Exhibit 2

Multiple Documents

Part	Description
1	Main Document
2	Exhibit 1- Hendershott Report
3	Exhibit 2- Services Agreement as of 5/1/10
4	Exhibit 3- FXCM Form S-1 dated 12/1/10
5	Exhibit 4- FXCM SEC Form 8-K dated 6/3/13
6	Exhibit 5- CFTC Initial Order
7	Exhibit 6- FXCM SEC Form 8-K dated 2/7/17
8	Exhibit 7- Werner Transcript
9	Exhibit 8- Regukh Transcript
10	Exhibit 9- Patt Transcript (REDACTED)
11	Exhibit 10- 683 Transcript
12	Exhibit 11- E-Global Trade Transcript

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EXHIBIT 7

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE GLOBAL BROKERAGE, INC. F/K/A FXCM INC. SECURITIES LITIGATION	MASTER FILE NO. 1:17-CV-00916-RA
THIS DOCUMENT RELATES TO: ALL ACTIONS.	

VIDEOTAPED DEPOSITION OF ADAM WERNER, PH.D.
FRIDAY, FEBRUARY 28, 2020

REPORTED BY: REAGAN EVANS, RPR, RMR, CRR, CCRR, CLR, CRC, CA CSR NO. 8176

VIDEOTAPED DEPOSITION OF ADAM WERNER, PH.D., TAKEN ON BEHALF OF THE DEFENDANTS AT 9:39 A.M., FRIDAY, FEBRUARY 28, 2020, AT 633 WEST FIFTH STREET, SUITE 1600, LOS ANGELES, CALIFORNIA, BEFORE REAGAN EVANS, CA CSR NO. 8176, RPR, RMR, CRR, CCRR, CLR, CRC.

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I N D E X

WITNESS	EXAMINATION	PAGE
ADAM WERNER, PH.D.	BY MR. ISAJIW	5

E X H I B I T S

NO.	PAGE	DESCRIPTION
EXHIBIT 1	7	MEMORANDUM OF LAW IN SUPPORT OF MOTION FOR CLASS CERTIFICATION AND APPOINTMENT OF CLASS REPRESENTATIVES AND CLASS COUNSEL
EXHIBIT 2	10	OPENING REPORT ON MARKET EFFICIENCY BY DR. ADAM WERNER, PH.D., DATED JANUARY 6, 2020
EXHIBIT 3	11	NOTICE OF ERRATA
EXHIBIT 4	14	CORRECTED OPENING REPORT ON MARKET EFFICIENCY BY DR. ADAM WERNER, PH.D., DATED JANUARY 10, 2020, 214 PAGES
EXHIBIT 5	17	CONSOLIDATED SECURITIES CLASS ACTION COMPLAINT, FILED 6-19-2017
EXHIBIT 6	19	SECOND AMENDED CONSOLIDATED SECURITIES CLASS ACTION COMPLAINT FILED IN THIS MATTER ON APRIL 6, 2018
EXHIBIT 7	20	OPINION & ORDER - CLASS ACTION

LOS ANGELES, CALIFORNIA

FRIDAY, FEBRUARY 28, 2020; 9:39 A.M.

THE VIDEOGRAPHER: Good morning. We are on the record. The time is 9:39 a.m.

Today's date is February 28th, 2020.

My name is Julio Luevano, Jr. I am the notary video technician with Veritext Legal Solutions, located in Los Angeles, California.

We are recording these proceedings at 633 West Fifth Street, Los Angeles, California.

This is Media 1 for the video deposition of Dr. Adam Werner, M.D., in the action entitled, "Global Brokerage, Inc., F/K/A FXCM, Inc., Securities Litigation."

This deposition is being taken on behalf of Defendants.

The case number is 1:17-cv-00916-RA.

Now, may I please have an introduction for the record, beginning with counsel.

MR. ISAJIW: Yeah.

Peter Isajiw with King & Spalding, counsel for Defendant Global Brokerage, formerly known as FXCM.

MS. ENNIS: Evan Ennis also with

King & Spalding, counsel for Defendants.

DR. ALEXANDER AGANIN: Alexander Aganin, Cornerstone Research.

MR. HAKLAY: Gonen Haklay from the Rosen Law Firm on behalf of the witness.

MR. BAKER: Josh Baker, the Rosen Law Firm on behalf of the witness.

THE VIDEOGRAPHER: Thank you.

Ms. Reporter, please swear in the witness.

ADAM WERNER, PH.D.,

having been first duly sworn by the reporter, was examined and testified as follows:

THE WITNESS: I do.

EXAMINATION

BY MR. ISAJIW:

Q Hi, Dr. Werner. We met off the record briefly.

But, for the record, I'm Peter Isajiw representing the defendants in this case. And I wanted to thank you for taking the time to come out here today and talk to us.

Just real quick, you were introduced as an

M.D. earlier on. I wanted to correct that. It's a Ph.D.; correct?

A Correct.

Q Good.

A That was a first, by the way. I said "Thank you."

Q Just making sure that we're clear.

I assume you have been deposed several times before, and you're familiar with the process; is that correct?

A Yes.

Q Okay.

So if at any point you don't understand a question that I'm asking, please let me know. And before we begin, I'm not going to go through all of the normal, kind of, witness instructions because I'm pretty sure you're familiar with them, but is there anything that's preventing you from testifying truthfully and fully today?

A No.

Q Okay. Great.

You're aware that the plaintiffs in this case have sought class certification; is that right?

A I believe that is correct.

Q Okay.

And you were asked to provide an expert opinion in support of their motion for class certification; is that right?

A I believe so.

Q Okay.

MR. ISAJIW: I'm just going to introduce a couple of exhibits here just for housekeeping purposes.

The first one is a Memorandum of Law in Support of Class Certification and Appointment of Class Representatives that counsel filed by the plaintiffs in this case.

THE REPORTER: Is that Exhibit 1?

MR. ISAJIW: That's Exhibit 1.

(Whereupon Werner Exhibit 1 was marked for identification by the Court Reporter.)

BY MR. ISAJIW:

Q Have you seen that Memorandum of Law before?

A As I sit here, I don't recall.

If you give me my report, I'm pretty sure I didn't rely on this, but I'm more than happy to refresh my memory by looking at the report and seeing somehow if I looked at this at some point.

Q Sure.

We'll get to your report pretty quickly actually, but just sitting here today right now, do you remember ever seeing that document before?

A Again, I'm happy to refresh my memory by seeing if it's something I saw before. I guess -- so I don't know, as I sit here today.

Q Okay.

Can you turn to page 1 of that document.

And in the Preliminaries, under the title "Preliminary Statement," there is a block quote. And this block quote represents the class the plaintiffs are asking to certify, which is (as read and/or reflected):

> All persons and/or entities that purchased or otherwise acquired publicly traded Global Brokerage, Inc., formerly known as FXCM Securities, including FXCM 2.5 percent Convertible Senior Notes due 2018, and Class A common stock, during the period March 15, 2012 through February 6, 2017, both dates inclusive.

Do you see that?

A I do.

Q Is that your understanding of the class that your testimony and expert report is intended to assist in certification?

A Again, I'm happy to look at my report to refresh my memory. So without -- just looking at this and reading this, I would like to look at my report to know whether or not I cite that.

Q Sitting here right now, does that sound at all familiar to you?

A I have no reason to disagree with it, as I sit here.

Q Okay.

But you don't specifically recall it being part of the class that your report is supporting?

A Again, I'm happy to look at my report to refresh my memory.

As I sit here today, it sounds reasonable, but it's not something I remember. I'm sure -- again -- well, let's go with a different document.

How about the complaint?

Q Yeah, we'll get to that.

I'm just asking you right now, sitting here today, and we'll introduce you to the report in a second, and we'll probably talk about your report

for most of today.

But so today, you don't have a general recollection of that being the class?

A It seems familiar, but I would like to refresh my memory to give you a complete answer.

Q Sure.

MR. ISAJIW: This will be Exhibit 2.

(Whereupon Werner Exhibit 2 was marked for identification by the Court Reporter.)

BY MR. ISAJIW:

Q So what you have been handed as Exhibit 2 is a document called the "Opening Report on Market Efficiency" by Dr. Adam Werner, dated January 6, 2020.

That is the original report you filed in this matter.

Do you recognize that document?

A When you say "original report," do you mean the report with the corrections or the report without the corrections?

Q I'm talking about the first one.

A So that's the report without the corrections?

Q That's correct.

A Yes, I believe I've seen this before.

Q Does flipping through this document refresh your recollection on the class?

A Yes.

Q Okay.

So is -- going back to the original question on the class certification motion, the definition of class is consistent; is that correct?

A That -- I believe that is correct.

Q You can put that to the side.

I'm going to put in front of you what we're marking as Exhibit 3.

(Whereupon Werner Exhibit 3 was marked for identification by the Court Reporter.)

BY MR. ISAJIW:

Q And this is a Notice of Errata that indicates that (as read and/or reflected):

On January 6th, 2020, Plaintiffs inadvertently filed a version of the "Opening Report on Market Efficiency" by Dr. Adam Werner that contained non-substantive errors. And it replaces a corrected copy.

Do you recognize that document?

A I don't think I've seen this letter before, but, otherwise, yes.

Q Okay.

And so this document has your original report and your corrected report; correct?

A Oh, does it? I don't --

Q I'm sorry. I'm sorry.

It has the corrected report and a redline showing the changes from your original report.

A Okay.

Q So you recognize that document as both your corrected report and a redline indicating the changes to your prior report?

A Well, I haven't seen the redlines. Can you point me to a particular page?

Q Generally speaking, what is your recollection of what you needed to correct in the second report?

A I believe there was some statistics that were slightly off.

Q Okay.

Anything else?

A Not that I recall, but, again, if you -- I'm happy to go through all of this, if you would

like me to fully refresh my memory.

Q I'll get there.

I'm just asking what you remember first.

A Okay.

Q So you had to correct some statistics.

Do you remember what the issue was with those statistics?

A I believe they were miscalculated.

Q And who recognized the miscalculation?

A I believe I did.

Q Okay.

And what was the context for you to realize that there were miscalculations?

A I had noticed that between drafts the numbers had changed.

Q Okay.

After you submitted the first report, so you were just reviewing the report?

A I -- correct.

Q Okay.

So we have taken the corrected report, which is an exhibit there, and just bound it so it's easier to deal with today.

So I'm going to hand you this as Exhibit 4 so that when we flip through, it will just be easier

to navigate.

(Whereupon Werner Exhibit 4 was marked for identification by the Court Reporter.)

THE WITNESS: Do you think you will return to Exhibit 3?

BY MR. ISAJIW:

Q I don't think so. We may, though.

A I'm just going to place it up there. It's not like I'm going to --

Q We're just using Exhibit 4 to make it easier so that you don't have to deal with that pile of paper.

A Thank you.

Q So that is your corrected report. Like I said, we just bound it for ease of navigating.

Did you write that report?

A I wrote the report and was assisted by people at Crowninshield in writing this report. They helped me draft the report. But I approved everything that is in this report.

Q Okay.

Anyone other than Crowninshield help you draft the report?

A I'm trying to remember. There may be

someone who is named Narinder Walia, who I'm not sure what his relationship with Crowninshield is.

Q Can you spell that?

A Sure. It's "W" as in Werner; "A" as in Adam; "L" as in Larry; "I" as in imbécil; "A" as in Adam.

Q Okay.

A Do you want his first name?

Q Sure.

A Sure. So it's Narinder. "N" as in Nancy; "A" as in Adam; "R" as in Robert; "I" as in -- we'll deal with something else -- interesting; "N" as in Nancy; "D" as in David; "E" as in eventually; "R" as in Robert.

Q Okay.

And you believe that Mr. Walia -- is it Mr. or Mrs.?

A Mr.

Q You think Mr. Walia works for Crowninshield?

A I don't know what his relationship with Crowninshield is.

Q Okay.

A Sorry.

Q Sure.

A If anything, he's a 1099 employee.
Q Okay.
A So, yeah, he's not -- I don't think he -- he does not receive a W-2 from Crowninshield.
Q So aside from those people, anybody else you can think of who assisted you with the report?
A No.
Q Okay.
Have you done any more work on this matter since filing that corrected report?
A No.
Q When were you retained?
A I don't recall.
So what are we in? We're in -- it's not --
Q Approximately?
A I probably was contacted in October or November. That's speculative -- speculating on my part. I don't have the exact date.
Q Okay.
Do you know what year you were retained?
A Last -- oh -- so when you say "retained," you mean signed a retention agreement?
Q Let's start with that.
A I don't know.
Q Okay.

Let's start with just contacted to potentially work on this matter.

A I believe that would be 2019.

Q Okay.

Can you keep that in front of you because we'll talk about it, but I want to have you take a look at two more documents.

A Sure.

Can I put Exhibit 1 up here as well?

Q Sure.

Just keep Exhibit 4, your corrected report, handy.

MR. ISAJIW: Which one is this?

THE REPORTER: 5.

(Whereupon Werner Exhibit 5 was marked for identification by the Court Reporter.)

BY MR. ISAJIW:

Q I'm handing you what is being marked as Exhibit 5, a Consolidated Securities Class Action Complaint in this matter, which was filed 6-19-2017.

Have you seen this document before?

A I have.

Q Okay.

And did you review this document in

connection with your work on this matter?

A I did.

Q Okay.

And did you review this document before you started your analysis on this matter?

A Define "analysis."

Q So you were asked to render a couple of opinions which you put into this report; is that correct?

A That is correct.

Q Okay.

In the process of rendering those opinions, you did some analysis in order to come up with those opinions; is that correct?

A That is correct.

Q Okay.

Prior to beginning the analysis to support your opinions, did you review this complaint?

A I don't know the exact timeline. My guess is yes, but, again, that's a guess.

Q Okay.

I'm going to put one more document in front of you. This is going to be Exhibit 6.

///

///

(Whereupon Werner Exhibit 6 was marked for identification by the Court Reporter.)

BY MR. ISAJIW:

Q And Exhibit 6 is the Second Amended Consolidated Securities Class Action Complaint filed in this matter on April 6, 2018.

Do you recognize that document?

A I do.

Q Okay.

And have you reviewed this document before?

A I have.

Q Okay.

A Let me correct my previous testimony now.

I'm not sure that I've reviewed the first complaint.

Q Okay.

A I may have just reviewed the second amended complaint.

Q Okay.

So did you review the second amended complaint before beginning your analysis in this matter?

A I don't recall.

Q Okay.

So when we were talking about the first amended complaint, you said you may have reviewed it before the amended -- before the analysis.

And so does that answer change with the second amended or --

A No.

Q Okay.

So you just don't remember if you reviewed it before or after?

A Right.

As I -- that's what I stated with regards to this first complaint. It's the same answer.

Q Okay.

But you certainly reviewed it during your analysis?

A Yes.

Q And you reviewed it before you finalized your report?

A Yes.

(Whereupon Werner Exhibit 7 was marked for identification by the Court Reporter.)

BY MR. ISAJIW:

Q And what I've just handed you as Exhibit 7 is the Opinion & Order on the motion to dismiss in

the class action in this case, which was decided March 28th, 2019.

Have you seen this document before?

If you don't mind, I'm just wondering, looking at that document, do you recognize it?

A I mean, it looks like any other legal filing I've seen.

Q Okay.

A So I would like to refresh my memory by seeing if it's something I have seen before.

Q So just to be clear, you're saying that you can't remember if you've ever seen that document before, just sitting here today?

A I believe that is accurate.

Q Okay.

A I don't believe I've seen it before.

Q Okay.

Has anyone ever summarized it for you?

A No.

Q Are you aware that there was an order on the motion to dismiss in this matter?

A I believe I was aware.

Q How did you become aware?

A I think I was told by Counsel.

Q Okay.

When did you become aware?
A I don't know.
Q Did you become aware before you finished your report?
A I don't recall.
Q Were you aware of the result of the order?
A Can you repeat the question, please.
(The record was read back as follows:
"Question: Were you aware of the result of the order?")
THE WITNESS: And so when you mean the "result," you mean the conclusions on page 38 and 39?
BY MR. ISAJIW:
Q I'm just trying to understand your understanding of the results.
A Right.
And I'm just trying to understand your definition of results.
Q Using your best definition of the word "results," are you aware of the results of the motion to dismiss?
MR. HAKLAY: Objection. He stated that he doesn't know what you mean by it. He doesn't want

to give an answer where somebody might one day say, here's what results mean.

So define what you mean by "results" and he'll answer it.

MR. ISAJIW: Okay.

We can limit the speaking -- just objection to form --

MR. HAKLAY: I'll limit it to whatever is necessary.

MR. ISAJIW: -- is the appropriate way to go.

MR. HAKLAY: That's fine.

Don't answer it until he does.

MR. ISAJIW: You're instructing him not to answer the question?

MR. HAKLAY: If you don't understand it.

BY MR. ISAJIW:

Q So you told me earlier, and correct me if I am wrong, that you were aware that there was a decision on the motion to dismiss.

A Correct.

Q Okay.

And you don't remember exactly when you became aware that there was a decision on the motion to dismiss?

A That is correct.

Q Whenever you became aware of the decision on the motion to dismiss, what did you understand the decision to be?

A I'm not sure I even thought about it.

Q So in what context did you become aware of it?

A Someone told me they survived a motion to dismiss.

Q Did someone tell you anything else, other than they survived the motion to dismiss?

A I don't believe so.

Q Okay. Sitting here today, you have no additional context whatsoever for "what survived the motion to dismiss" means?

A In general, or in this matter?

Q Let's start in general.

A Could you repeat the question, please.

(The record was read back as follows:

"Question: Sitting here today, you have no additional context whatsoever for "what survived the motion to dismiss" means?")

THE WITNESS: I don't understand the question.

BY MR. ISAJIW:

Q In your view, what does "surviving a motion to dismiss" mean?

A In practical terms, in general, it means that the judge has allowed the case to go forward.

Q Okay.

In context of this case, specifically, what do you understand surviving the motion to dismiss to mean?

A It wouldn't be any different than my general understanding of what it means to survive a motion to dismiss.

Q Do you have any understanding if any claims or allegations were removed from the case in connection with the decision on the motion to dismiss?

A I do not.

Q Okay.

So the motion to dismiss came out in March of 2019?

MR. HAKLAY: You mean the opinion?

MR. ISAJIW: I'm sorry. The order.

THE WITNESS: March of 2019, correct.

That's what it says anyway. Excuse me.

BY MR. ISAJIW:

Q And your first report came out in January of 2020; is that correct?

A Yes.

Q Okay.

So to the extent you were notified of the decision on the motion to dismiss, do you believe it would have been before or after you started your work on the report?

A Well, I'm just -- and just based on logic, I don't think -- if they hadn't survived the motion to dismiss, my guess is they wouldn't have asked me to submit a report in this matter.

So I guess I was probably aware of it before I started working on my report.

Q Okay.

A But that's just based on logic. I don't recall any specific date.

Q Okay.

So the -- you're employed by The Rosen Law Firm here; is that correct?

I'm sorry. Retained by The Rosen Law Firm?

A I believe that's correct.

Q Okay.

A But I think formally, Crown- -- I'm not sure how the exact relationship works because they sign the engagement letter with Crowninshield.

Q Okay.

A So I don't know if that means that technically Crowninshield is retained by The Rosen Law Firm.

Q Okay.

Are you aware if Rosen -- The Rosen Law Firm is paying Crowninshield for your efforts in this case?

A I believe so.

Q And do you know how much they are paying Crowninshield for your efforts in this case?

A You mean for my work?

Q Yes.

A And I'm referring now to paragraph 7 of my report.

Q Uh-huh.

A $675 per hour.

Q And you mentioned earlier that some additional Crowninshield consultants have assisted.

Are you aware of what their rate is?

A Again, referring to paragraph 7, it's between 250 to $500 per hour.

Q And do you know how much Crowninshield has billed for this matter so far?

A I do not.

Q Approximately, how many hours have you spent in connection with this matter so far?

A Somewhere between 20 and 30 hours.

Q Do you know if Crowninshield has submitted invoices to The Rosen Firm for your work in this matter?

A I believe they have.

Q Do you know if they've been paid?

A I -- well, I believe so.

Q Okay.

A If I could just add. The Rosen Law Firm is very timely in their payment of bills. So that's why -- I don't know if we've submitted a bill for January. I know they've paid their bill through December -- sorry -- on my work through December.

Q Okay.

And so going back to your report, you were asked by The Rosen Law Firm to provide an expert opinion on market efficiency as to the FXCM common stock; is that correct?

A Well, again, let's just turn to my report. I was retained (as read and/or reflected:)

To provide an opinion that will assist the court in determining whether the common stock of -- and this is paragraph 1 in my report -- Global Brokerage, Inc., formerly known as, and that's F/K/A/ -- oh, no slash after the "A," sorry, FXCM Inc., and that's the abbreviation for incorporated, ("FXCM" or the "Company") and the FXCM 2.25 percent Convertible Senior Notes due 2018 traded in efficient markets during the periods for March 15, 2012, through February 6, 2017 (the "Class Period"), and June 24, 2014, through February 6, 2017 (the "Notes Period"), respectively. Oh, sorry (as read and/or reflected:)

In addition -- and this is paragraph 2 -- The Rosen Firm asked me to provide an opinion that will assist the court in understanding and determining whether the trier of fact will be able to measure

damages in this matter by means of a common methodology and calculate them on a class-wide basis for all Class members in connection with their claims under Section 10(b) of the Exchange Act of 1934 (the "Exchange Act") and the U.S. Securities & Exchange Commission ("SEC") Rule 10b-5 adopted thereunder.

And we'll just leave it at that.

Q Thank you for that.

So my question was: You were asked to provide an expert opinion on market efficiency concerning the FXCM common stock; is that correct?

A That was your question, correct.

Q Yeah.

Did you need to refer to your report to answer that question?

A Well, in any deposition, I try to be as accurate as possible.

And so to the extent that this reflects my opinion and full understanding of what I have been asked to do, as well as my opinions on this matter, I would like to refer to my report. It's just

generally what I like to do.

Q Okay.

A So that is my full understanding of what I was retained.

So I guess your question -- the answer to your question is yes, but then I was also hired to determine or opine upon market efficiency for the notes, which was not part of your question.

Q It was going to be my next question.

A Well --

Q But my current question is: Could you have answered that without reference to your report?

A Is it possible? It is possible for me to do so. But, again, in any deposition, I try to be as accurate as possible.

And so this fully reflects what I was hired to do in this matter.

Q Okay.

Does this corrected report in front of you embody the sum total of your opinions in this matter?

A As of this date, yes.

Q Have there been any other opinions you have been asked to provide in connection with this litigation that are not in that report?

A Not at this time.

Q Are you offering any opinion as to whether the defendants in this case made any false or misleading statements?

A I don't believe so.

Q Have you done any independent review to determine whether or not the statements that Plaintiffs are challenging in their complaint are accurate or inaccurate?

A What do you mean by "independent review"?

And I mean that because I have seen documents, such as the SEC or -- they're not the SEC, the order at the end of the Class Period. That certainly formed my opinion.

But I don't -- so I don't know if that's independent work or work that was done as part of this report.

Q It informs your opinion on what?

A Well, so -- right.

So I saw, and I'm referring now to Footnote 126 of my report.

I've seen this document from the U.S. Commodities Futurist Trading Commission press release.

I don't know if that -- if that, under your

definition, is considered independent research or it's research that I was done -- that was done, you know, in forming my opinions.

Q Okay.

The original question that I was asking is whether or not you were asked to form an opinion on the accuracy of the statement that the plaintiffs are challenging in their complaint.

And I believe your answer was you were not.

A That is correct.

Q Okay.

When I was asking the next question of if you did any independent research to confirm the accuracy of the statements that Plaintiffs are challenging in the complaint, you mentioned the document in the footnote.

Is it fair to say that you have not rendered any opinions as to the accuracy of the statements that Plaintiffs are challenging in their complaint?

A That is correct.

Q Okay.

Let's flip to Exhibit 1 of your report, which begins on page 65. And I just want to run through some of your -- it's your curriculum vitae,

your C.V.

MR. HAKLAY: Can we have an understanding that when he says "my report" or you say "my report," unless otherwise indicated, we're looking at the -- at Exhibit 4, the correct reported, just so --

MR. ISAJIW: That is an excellent housekeeping note.

Q So just looking at this -- I just want to run through your background.

You have a BA in economics from Overland College; is that correct?

A Correct.

Q And a Ph.D. in finance from Northwestern?

A As well as a master's in finance, but I don't normally list that.

Q Any other degrees?

A I don't believe so.

Q Any other professional certifications relevant to your work here?

A No.

Q And you're currently a lecturer in finance and economics at Cal Poly, San Luis Obispo; is that correct?

A I think it would be more accurate to say

I'm a lecturer in economics. I can't -- I haven't taught a course in finance probably in three or four years.

Q Okay.

Have you lectured in economics in the last three or four years?

A Yes.

Q Okay.

And where were those lectures?

I guess my question was, you were currently a lecturer, and then you made a clarification. So I'm trying to figure out what's the -- what's the clarification.

A Oh, the clarification is I don't teach -- I can't -- I haven't taught finance in a couple of years. So it's probably more accurate to say that I am a lecturer in economics at Cal Poly as opposed to a lecturer in economics and finance.

Q I see. Okay. Thank you for that.

You have been a lecturer since 2014?

A Correct.

Q Okay.

Is that a tenured-track position?

A No.

Q And can you just briefly describe your work

there with Cal Poly?

A Yeah.

I teach classes almost -- now almost exclusively in macroeconomics. There have been discussions of teaching other courses, but --

Q And how many classes a year do you teach?

A When you say, "how many classes," do you mean how many sections?

Q I don't know how the curriculum at Cal Poly is cut up.

Do you teach one course a year? Two courses a year?

A Okay.

So let me ask a clarifying question, right.

So when you say "course," all right, I would consider macroeconomics a course. All right.

Q Okay.

A Now -- so if that's the definition, I normally teach one course a year.

Now, if we're talking about the number of sections I have, because I have multiple sections, I probably teach between eight and nine sections a year.

Now, I don't know if you consider each section a course, as you've defined it. Or --

Q What is a section?
A It is a classroom filled with students.
Q Okay.
So for macroeconomics, a classroom filled with students meets eight or nine times a year?
A No.
Q Okay.
A I'm not sure what the confusion is on this. It's no different than any other college or university.
I mean, you went to law school and got a BA; right?
If you went to an economics class, would you say that was a class or a course?
Q Let's, for the purposes of this conversation, call that a course.
A Okay.
And so you take a course in economics, and then you take another course in English.
Is that a separate course?
Q Yes.
A Okay.
If you had taken the same macroeconomics class again for whatever reason, would that be considered a different course but the same class?

Q Is that a common phenomenon in your experience?

A Well, I'm -- well, unfortunately, yes. Some students fail the course and then have to retake it.

So it's more common than one would like.

But I'm just -- I'm really not trying to make this difficult. I'm just trying to have -- understand the question. I don't understand why you are confused about the difference between a course and a class.

Q I don't believe that I am. I'm just trying to understand how many -- how many subjects do you teach a year?

A So now we're on subjects.

Q Okay.

Students sign up to learn from you in some capacity; is that correct?

A I believe that's correct.

Q Okay.

When they sign up, they sign up for what? A class? A course? A section? What do they sign up for?

A I think, in layman's terms, I would call it a class.

Q Okay.

In those terms, how many classes do you teach?

A Between eight and nine.

Q In what subjects?

A Macroeconomics.

Q All macroeconomics?

A Well, I mean, macroeconomics encompasses a large field, but, yes, all in macroeconomics.

Yeah, well, so sometimes I teach survey of economics, which would include macroeconomics. I have taught managerial economics and international finance. And this, again, is at Cal Poly, but mostly I just -- now I just teach macroeconomics.

Q Okay.

A Occasionally I will teach another course or -- yes.

Q How many hours a week do you devote to that effort, generally?

A So this is teaching and prep?

Q Yes.

A Somewhere between 15 and 20 hours a week.

Q Okay.

A It varies from quarter. Some quarters I teach a large lecture class, and so then I have what

I consider two sections of my macroeconomics course. But those lectures also have, like, 230 students in them. So ...

Q Okay.

You also work for Crowninshield; is that correct?

A Again, just for accuracy, when you say "work," do you mean employed?

Q I mean render services in exchange for money.

A I believe that's accurate.

Q Okay.

What is your position at Crowninshield?

A I think they refer to me as -- it's either expert or associated expert.

Here on the card it says "expert." If you want me to look at the website, I can give you the exact title, but -- oh, affiliated expert. There we go. I believe I -- if you look at the website, I'm under the title Affiliated Expert.

Which is --

Q How long have you been an affiliated expert with Crowninshield, roughly speaking?

A Hold on one second. I just want to make sure.

Q I'm just looking for your best understanding right now.

A Yes. No. No. No.

Q Do you not -- are you not able to answer the question?

A No. I'm trying to refresh my memory about the previous question.

Q Which question are you trying to answer?

A My title at Crowninshield.

Yes. I am also an affiliated expert. So that is paragraph 4 of my report. So that is my official title with Crowninshield.

Q How long -- how many years have you rendered services in exchange for money with Crowninshield?

A Since 2015.

Q How many hours a week, on average, do you spend in connection with your services for Crowninshield?

A On average? Maybe ten.

Q Okay.

In terms of proportion of your yearly income, which is larger, the income you derive from your work at Crowninshield or the income you derive from your work at Cal Poly?

A Crowninshield. Depending on the year.
Q Let's look at last year.
A Crowninshield.
Q Are you employed by, or work for, in any capacity any entity, other than Cal Poly or Crowninshield?
A Okay.
So I work as a planning commissioner for the City of Pismo Beach for which I receive I believe it's $50 per meeting. So I don't know if that would be considered employment or not. I think of it more as community service.
Q Focusing on economics.
A Well, part of my job on the planning commission would include my understanding of economics. So --
Q Okay.
Any other jobs?
A No.
Q Taking a look at page 66, starting at 65 going over to 66, we were talking about your Papers and Publications.
The most recent one under Publications I see is a "Law360" article from 2013 entitled, "More 'Dark Pools' Deepen Litigation Issues"; is that

correct?

A That's what it states. I had a "Law360" article, I think, last year.

Q Okay.

That "Law360" article is not listed in this list of publications; is that right?

A That is correct.

Q So your most recent one was last year?

A I believe so.

Q And what was the topic of that "Law360" article?

A It had to do with settlements, settlement statistics, looking at -- I think that fairly summarizes it.

Q And under Presentations, I see the most recent one also in September of 2013, "Cause or Effect: Are Settlement Statistics Driving Down Settlement?" And it's a presentation to a number of law firms.

Do you see that?

A I do.

Q Is that your last and most recent presentation?

A I believe that's accurate. Other than presenting in a classroom environment.

Q How many peer-reviewed articles, broadly speaking on the subject of economics, have you published?

A Well, okay. So this -- it really depends. I would not -- I mean, one might argue that the Federal Reserve paper I wrote was peer reviewed.

And what I've seen defendant experts refer to "Law360" articles as peer-reviewed articles. I don't personally consider them as peer-reviewed articles. So based on that definition, possibly one.

Q Okay.

A I mean, based on my definition. If you want me to go with the defendant expert's definition, possibly three.

Q Okay.

So based on your definition, it's one. And that the 1993 Federal Reserve Bank of Cleveland Economic Commentary that you're talking about?

A Right.

I mean, I suppose you could consider my dissertation peer reviewed, but ...

Q When was that?

A That was completed in 1999.

Q Okay.

How much of your time is dedicated to research in the area of market efficiency?

A When you say "research," do you mean academic research?

Q I do.

A I mean, to the extent that I discuss market efficiency in my macroeconomics class, a small portion of it.

Q Okay.

A But outside -- outside of that -- I mean, I certainly read about market efficiency and -- I don't know if you -- that would fall under your definition.

Q How much time do you spend reading about market efficiency?

A To the extent I read these reports about market efficiency, I don't know. Five hours a month.

Q Okay.

And in your research on market efficiency, how much time would you spend researching the difference in market efficiency in connection with equity securities versus fixed income securities?

A I don't understand the question.

Q When you research market efficiency --

A Well, so -- and I'm sorry. I don't mean to interrupt you. I just want to ask a clarifying question so to help move this along.

So when you say "research," do you mean reading about market efficiency? Because I'm not actively, like, writing papers on market efficiency. If that's what you want to consider research.

Q Okay.

Before you mentioned academic research when I asked you about how much time you spend researching.

Using that same definition of academic research, how much, if any, time do you spend in academic research in connection with market efficiency and differences between equity securities and fixed income securities?

A Okay.

So I'm excluding just reading papers. I would say none.

Q If we turn to the expert reports and testimony section of your report, starting on page 67 and 68. There are a number of cases listed where you've provided expert reports and testimony.

And I'm just wondering if you can tell me whether any of these expert reports or testimony

were on behalf of a defendant in a federal securities action.

A Well, so let me just go through this.

So I'm not sure if you would consider this a securities matter.

This Gwyn Hartman -- I'm now looking at page 69 of -- well, just go with page 69 of Exhibit 4. "Gwyn Hartman Revocable Living Trust versus Southern Michigan Bancorp." That was not a 10b-5 case, but I don't know if you would consider that a securities matter.

Q But that was for a defendant in a litigation?

A Correct.

Q Okay.

Is it fair to say that the majority of your engagements, expert reports, and testimonies listed here are for plaintiffs --

A So when you --

Q -- in securities litigations?

A When you say "engagements," you mean engaged as an expert?

Q I mean, for each of the lists of expert reports and testimony starting on page 67 and continuing on to page 71. To the extent they are in

connection with federal securities cases, is it fair to say that the majority are for plaintiff's side?

A And, again, I'm not trying to be difficult. I'm just trying to define what you mean by "experts."

So having submitted a report; right? Because I've worked on hundreds of defendant cases at places like Cornerstone and CRA and NERA. I don't consider myself having been retained as an expert in those cases.

Q I'm just referring to the section of your CV entitled "Expert Reports and Testimony."

So I assume those are, based on your CV, matters in which you were retained to submit an expert report or testimony.

A Right. Which is why I asked the clarifying question when you said "expert," whether you meant retained as an expert to provide an opinion.

So as long as that's the definition --

Q Yeah.

A -- yes, your statement would be correct.

Q The statement that the majority is for the plaintiff's side?

A That is correct.

Q Okay.

In any of these matters listed on pages 67 to 71 of your CV, and we're referring to the same set of expert reports and testimony related to fixed income securities as opposed to equity securities.

A Is there a question? Could you read that -- I didn't think there was a question. I think it was a statement.

(The record was read back as follows:

"Question: In any of these matters listed on pages 67 to 71 of your CV, and we're referring to the same set of expert reports and testimony related to fixed income securities as opposed to equity securities.")

THE WITNESS: I think it's an incomplete question. If you're asking me how many reports have I rendered an opinion about efficiency in a fixed income security? Is that the question?

BY MR. ISAJIW:

Q That's not the question. But let's answer that question.

A A few.

Q Can you give me context for what "a few"

is? Is it one? Five? Ten?

A I don't recall. No. It would certainly be less than ten.

Q Okay.

A And I would be surprised if it was five.

Q And in those approximately five or less matters, were any of them Rule 144A bonds?

A I don't recall.

(Reporter clarification.)

BY MR. ISAJIW:

Q Have you ever issued a written opinion in any case indicating that a security stock or a bond did not trade in an efficient market?

A Well, so I'm not -- I'm not sure I've actually seen anyone ever render an opinion that a stock or bond has not traded in an efficient market, specifically said -- stated that.

To the extent that I have found instances where I believed that the market for these -- for a stock or a bond is inefficient and I relay that to my potential clients, I'm usually then not asked to write a report.

Q Okay.

In those situations, what findings led you to conclude that the market for the security would

not be efficient?

MR. HAKLAY: Objection. Vague.

THE WITNESS: I mean, again, I would look at the same factors I would look at in providing my opinion here.

So I would look at the Cammer and Krogman factors.

BY MR. ISAJIW:

Q Okay.

In those situations where you have made a decision that you cannot issue the report and, therefore, you're not asked to issue the report --

A Well, it's not that I can't issue a report. I could issue a report. Right? I mean, I could issue a report with my findings. So that ...

Q How often have you been asked about whether or not a market is efficient and you've come to the conclusion that it is not?

A I don't recall.

Q Roughly speaking, how often?

A I have no idea.

Q More than five times?

A Maybe.

Q No idea whatsoever?

A I mean, it's less than 20.

Q Okay.

A Probably less than ten, but beyond that, I would be speculating.

Q The very last time that this situation came up, what were the reasons that led you to believe that the market was not efficient?

A Well, again, it's not that the market was inefficient.

It was that I could not opine that the market was efficient. Those two statements are different.

Q Okay.

What was the basis on which you could not opine that the market was in- -- was efficient?

A My review of the Cammer and Krogman factors.

Q Which Cammer and Krogman factors in particular?

A I can't recall.

Q No recollection whatsoever?

A Not as I sit here, no.

Q Have you ever been disqualified by any court from serving as an expert?

A No.

Q Have any of your opinions been subject to a

Daubert motion?

A Subject to a Daubert motion?

Q Yes.

A As in one was filed against me?

Q Correct.

A I believe so.

Q Have any of your opinions been excluded pursuant to a Daubert motion?

A No.

Q Going back to the documents you considered in connection with this report, were there any materials that you requested as part of your engagement that you did not receive?

A When you say "receive," you mean received from either Plaintiffs' counsel or Crowninshield?

Q In any capacity.

A I don't believe so.

Q And did you conduct any market efficiency analysis that is not reflected in your report?

A I don't believe so.

Q How much time did you spend prepping for this deposition?

A So when you say "prepping," do you mean meeting with counsel, or do you mean prepping on my own, like, reviewing material?

Q Both.
A Both. Total, probably, I don't know, eight hours, maybe less.
Q And in connection with your prep, I assume, based on your answer, you did meet with counsel?
A I did.
Q How many times?
A Once.
Q And roughly how long?
A Forty-five minutes. Thirty minutes.
Q And reviewing on your own, how long?
A Well, then the rest would be reviewing on my own.
Q And how much was the total? I'm sorry.
A Could you read back my answer, please.
Q I think it was eight hours, maybe less.
A Right. So subtract 30 minutes, 45 minutes from -- possibly an hour. The rest was spent reviewing on my own.
Is now a good time to take a break?
Q Would you like to take a break?
A I mean, I wouldn't mind, but --
Q Sure.
A -- if you're just -- if we're going to go through this in five minutes.

MR. ISAJIW: We're about to switch gears, so now is a great time.

THE WITNESS: Right. I assumed we were about to. Fantastic. Thank you.

THE VIDEOGRAPHER: We're going off the record.

The time is 10:35 a.m.

(Recess was taken at 10:35 a.m. until 10:45 a.m.)

THE VIDEOGRAPHER: We are back on the record.

The time is 10:45 a.m.

BY MR. ISAJIW:

Q Dr. Werner, I want to turn to Appendix A of your report, which is on page 60 and entitled "Primer on Market Efficiency."

Are you there?

A I am.

Q Okay.

Did you draft this section, this primer?

A Over many years, yes.

Q And do you normally include this type of thing in your reports?

A It's usually in the body of my report. I've been -- I had been thinking about pulling it

out and putting it as an appendix, to make it --

Q Okay.

In the very first paragraph on paragraph 1 on page 60, it says (as read and/or reflected:)

> The efficient market hypothesis is the foundation of modern finance theory. In essence, a stock trades in an efficient market when all publicly available information is incorporated in the stock price. And any new information that impacts the economic outlook of the firm gets quickly reflected in the stock price.

Did I read that correctly?

A You did.

Q How do you define "quickly"?

A I mean, it depends on the situation.

I mean, I've seen courts rule that quickly can be a couple days. So within a reasonable amount of time.

Q In your view as an economist, does that mean the price should both start and finish reacting to news in one day? Two days? Three days?

A Again, it would depend on the situation. I think normally what you would see would be within one day.

Q Okay.

Would that statement apply to bonds as well?

A With the same caveat, yes.

Q Have you done it --

A Well -- go ahead. Sorry.

Q Have you done any test to see if the price reactions for both FXCM common stock and notes meet that definition of quickly here?

A Meet that definition of quickly test. Well, I mean, I performed an event study and a news/no-news analysis.

Q Okay.

Did -- I believe you said that the price for quickly, generally speaking, the price would start and finish reacting to the news within a day?

A Correct.

I mean, but we see periods of market uncertainty where -- or people -- people -- it takes the market time to fully digest information and the implication of those -- of that information.

Q Okay.

But so for your event study here, you use one-day returns in your study; is that correct?

A That is correct.

Q For both the stock and the bond?

A Well, let's go -- let's go to what I did with regards to the bond specifically.

Q We're going to get there later.

Do you recall right now, sitting here today?

A I'm trying to answer your question to the best of my ability. So looking at my report will refresh my recollection.

Yeah. So -- and I'm looking at paragraph 142 of my report.

(As read and/or reflected:)

For the notes, the regression data series included only days on which there was a trading price for two consecutive trading days so that a one-day return could be computed.

All returns for the Effex --

Well, I don't need to read any more.

Q Does that refresh your recollection that you used a one-day return for the bond?

A Well, with the caveat that it had to have two consecutive trading days.

Q You mention in the first paragraph there that an efficient market the information that impacts the economic -- sorry. First paragraph on page 60.

A Hold on.

MR. HAKLAY: He's there.

MR. ISAJIW: Okay.

Q That (as read and/or reflected:)

The stock price and any new information that impacts the economic outlook of the firm gets quickly reflected in the price.

Correct?

A That is correct.

Q Would you agree that the market, in order to be efficient, must also fully incorporate the new value-relevant news?

A I don't know how to answer that.

And what I mean by that is there's no assumption that the market has to be fully correct about -- it is an average of what peoples' expectations are. And so people may update their beliefs and stock prices may move based on those

updated beliefs.

Q So the stock price, when it updates based on updated beliefs, do you believe in order for the market to be efficient it must fully reflect those beliefs and the information at the time?

A To the best of the market's ability, yes.

Q So both quickly and fully reflect the available information at the time?

A Well, again, I've suggested cases where -- I mean, let's look at the Coronavirus, right.

I don't know. I mean, the market presumably has some expectation of the impact of that and, yet, so if I said to you, well, what's the impact of the Coronavirus on the market? I wouldn't expect that the market would fully incorporate all of the implications of that on one single day, right.

And -- I mean, we've seen -- I didn't look at the market today, but when I did look at it earlier, it continued to go down.

I don't -- I'm not sure anyone would argue that the S&P 500 was inefficient based on the fact that we were still talking about the Coronavirus.

Q Okay.

You'll agree with me that the Coronavirus

and the stock price reaction to the Coronavirus has nothing to do with the case that we're here talking about today; correct?

A Well, we're -- you asked me about stock price reactions. And so that would be one such example; correct?

MR. HAKLAY: Don't ask him questions.

MR. ISAJIW: Yeah. Thank you.

THE WITNESS: All right. Correct. Period.

BY MR. ISAJIW:

Q You base your work off of the work of other economics and you've cited a number -- other economists and you've cited a number of them in the footnotes of your report; is that correct?

A I believe that's accurate.

Q Okay.

One of those economists is Fama, who drafted a paper in 1970 called the "Efficient Capital Markets: A Review of Theory and Empirical Work" for the "Journal of Finance."

And you quote him in Footnote 12 of your report on page 62 of the appendix.

A Right.

So Footnote 12 of the appendix, not Footnote 12 of my report.

Q Yes.
Are you on page 62?
A Not yet.
Q So on Footnote 12, you have -- and towards the bottom of the footnote -- a citation to, it says (as read and/or reflected):
(Quoting Efficient Capital Markets: A Review of Theory and Empirical Work, Eugene Fama, "Journal of Finance," 1970).
And then you quote (as read and/or reflected:)
A market in which prices always, 'fully reflect' available information is called 'efficient.'
Do you agree with that?
A I agree with that statement, yeah.
I agree that that's what I wrote or that's what I quoted from Fama, yes.
Q Do you agree with the statement that you quoted, not that you quoted it?
A Generally, yes.
Q Are you familiar with the concept of price overreaction?
A The concept? What do you mean by "the

concept"?

Q As an economist, if I was to say "stock price overreaction," what would that mean to you?

A I mean, it would depend upon the context. Do you mean overreact to information?

Q So if a piece of value-relevant information came into the market and the stock price initially increased very quickly, but then reversed in the next few days, would that be consistent with your understanding of an overreaction?

A In your -- I would need to know more in order to answer your hypothetical.

Q What additional facts would you need in order to determine whether or not that would be consistent with your understanding of an overreaction?

A Well, I would need more context in terms of what else -- what was happening during that time period, what was happening to the market, what would happen to comparable companies over that period, what people were saying about the stock at the time.

Q Okay.

A So there's a whole host of factors that I would need to consider when looking at that.

Q Okay.

So outside of a specific example, just generally speaking, conceptually, the stock -- concept of stock-price overreaction is not something that you're familiar with?

A Are you asking: Is it possible for a stock price to overreact?

Q No. I'm asking if you're familiar with the concept of stock-price overreaction.

A If you want to show me a document that defines it. I'm just not -- it's not clear to me what your definition of --

Q I'm trying to get your definition.

A Well, and, again, so it would -- it would depend upon the context.

Q Okay.

What about stock-price underreaction? Conceptually speaking, what does that describe?

A Concept -- in general, I guess the -- I -- not fully incorporating the news. I don't -- I don't know. I would really need to know more.

Again, if you want to put a definition in front of me, I'm happy to answer your question.

Q Okay.

But sitting here today, as an expert in economics, who teaches several courses in economics,

who has drafted a report related to stock-price movement, you have no general definition of either the concept of price overreaction or underreaction in connection with stock prices?

A That's not it. I just don't want to give an inaccurate answer.

So if you want to put a specific definition in front of me, I will be happy to review that definition and give you my understanding.

I mean, presumably there have been papers on this -- on under or overreaction. So I'm just asking that you put it in front of me so we have a common understanding of what you mean.

Q Yeah. I'm just looking for your understanding of it.

A Well, so, I mean, can a stock overreact to news or underreact to news? Yeah, it's possible.

Q If a stock overreacts or underreacts to news, is that a suggestion that the market for that stock is inefficient?

A I would need to think more about that.

Again, I would need to look at the specific case and the situation around it, or I would need more specifics to answer your hypothetical question.

If you want to place a full example in

front of me, I would be happy to look at it and then answer your question, but as I sit here today, I'd need more information.

Q In connection with your work, sitting here today, did you do any test to confirm whether or not the price of FXCM securities over- or underreacted to value-relevant news?

A I'm not sure I've seen specific -- I'm not sure I've seen -- I would need to refresh my memory with regards to specific academic tests for over- and underreaction.

Q You need to refresh your memory for those tests to determine if you tested in this case for over- and underreaction?

A Well, again, it would inform my opinion -- it could be under the context of these tests that you're talking about that I did -- I don't know what these tests do.

I'm not sure I -- again, I'm not sure I've specifically seen a test in economics that defines over- or underreaction. My guess is it's some kind of event study. And so to the extent I've performed an event study, I suppose that information would inform my opinion of over- or underreaction.

But, again, I would need to know more

information in order to answer that question.

Q So in connection with your event study, did you evaluate whether or not the price of FXCM securities overreacted?

A I found that the -- my findings are that the market for FXCM's equity and notes were efficient during the Class Period. That was my finding. That's what I concluded. That's what I was asked to do. That's what I concluded.

I also concluded that damages could be calculated in this case.

Q Okay.

So you did not evaluate whether or not they over- or underreacted?

A Again, I'm not sure what you mean by "evaluate" because I don't know -- I'd need to fully understand these tests that you are describing.

Q I just want to know what test you conducted.

A And I -- I've answered your question.

Q Okay.

Generally speaking, is it possible for a market to be efficient at one point in time but not another?

A Is it possible?

Q Yes.

A I mean, I -- yeah, I believe it is possible.

Q So if you tested the efficiency of FXCM securities in 2010, would that tell you whether or not the market for the same securities would be efficient today?

A No.

Q Okay.

And if you tested the efficiency of a security in 2010 and today, would that tell you whether the market for that security would be efficient throughout 2015?

A So I looked at two snapshots in time. That -- is it possible? It's possible. My guess is it would not be sufficient to determine -- to opine upon market efficiency.

Q And is that true for both stocks and notes?

A Yes.

Q Okay.

Generally speaking, would stocks and bonds react differently to the same types of information?

A It's certainly possible.

Q Okay.

Why so?

A Bondholders are typically more concerned with bankruptcy risks because they're senior securities. Equityholders, while still probably concerned about a firm's bankruptcy, less so.

Q So if a company's stocks and bond react differently to the same news -- sorry -- strike that.

Can a security -- can a company's securities stocks and bonds react differently to the same news in an efficient market?

A When you say "differently," do you mean in different directions?

Q Yes.

A So, like, one went -- goes up and one goes down?

Q That would be one example of differently.

A Okay.

So in that example, yes, that's certainly possible.

Q It's possible that they would react in different directions?

A Yeah, I've seen that before.

Q And can that happen in an efficient market?

A Yes.

Q If that happens, could it also be evidence

that either the stock or the bond is trading in an inefficient market?

A As I sit here today, I have no reason to conclude that.

Q Hypothetically possible?

A Right. In your hypothetical -- well, so hypo- -- in your hypothetical, is it -- so you're asking me, hypothetically, is it possible that if a stock and a bond for the same company moved in a different direction, that one of those securities was inefficient?

It is possible.

Q Okay.

Would that suggest inefficiency?

A As I sit here, I have no reason to believe that it would necessarily suggest inefficiency based on your current hypothetical question.

Q Do you have any basis in your methodology to determine what types of news would cause a stock and a bond to react similarly or differently?

A I don't understand the question.

Q Before actually conducting an event study, would you have a general sense of what type of news would cause stocks and bonds to react differently?

A And I'm trying to -- I have been trying to

think about that as we have it -- we've had this conversation.

I should be able to answer your question. I need -- but I need to think more about it. It is certainly something I have been considering as we have been having this conversation.

Q If a piece of news had clear positive implications for a company's asset value and the bond was trading substantially below par, would you expect the bond and the stock to be more likely to react to the news that had a positive value for the firm's asset or have a similar reaction?

A Yeah, that's a completely incomplete hypothetical. Like, I can't answer, as I sit here today.

Q Okay.

What additional information would you need?

A I don't know. If you want to place the question in front of me, I will be happy to look it over and try to opine upon what additional information I would need.

But as it is, it's a compound, complex, hypothetical example.

And so it would be completely speculative on my part to attempt to answer it without knowing

more.

Q Generally speaking, if a bond was a convertible bond, meaning convertible into equity, would it be more or less likely to react differently to news in the market?

A Differently than the equity?

Q Yeah.

A I would have to think more about that, as I sit here.

As I sit here today, I'm not sure.

Q Looking back at your appendix. In paragraph 3 you say (as read and/or reflected:)

> While financial economists rely on event study analysis as direct evidence demonstrating stock price response to new information, they accept other factors as tending to support the existence of an efficient market for security.
>
> For example, financial economists have argued that trading volume is correlated with the market sufficiency, such that the higher the trading volume, the more likely it is to be efficient.

Did I read that correctly?

A That is correct.

Q What do you mean when you say they -- (as read and/or reflected):

> Financial economists accept other factors as tending to support the existence of an efficient market?

A Well, I mean off the top of my head, generally, the Cammer and Krogman factors would be included in that.

I'm not sure I've actually ever seen any economic study that's looked at S3 eligibility as a function of market efficiency.

Q Okay.

And what do you mean by the "Cammer factors"?

A The Cammer and Krogman factors as listed in my report. I'm happy to --

Q Just wondering if you can summarize them off the top of your head.

A Sure.

Q I think we can probably get on the same page pretty quickly here, but we're talking about average weekly trading volume as one; is that

correct?

A That is correct.

Q And analyst coverage as a second?

A Correct.

Q Market makers as part of the third?

A And listing on the NYSE, yes.

Q Okay.

Eligibility for S3 registration?

A That is a Cammer factor.

Q And price reaction to new information?

A I believe -- yeah. I mean, the fifth Cammer specifically says, and I'm reading from page -- paragraph 44 (as read and/or reflected):

> It would be helpful to have empirical facts showing a cause and effect relationship between unexpected corporate events or financial releases and an immediate response in the stock price.

Q Okay.

THE WITNESS: Can we pause for a second? Or could one of you get me a Diet Coke?

MR. HAKLAY: I think I took the last one.

THE WITNESS: I'm sure King & Spalding has more.

BY MR. ISAJIW:

Q So in the paragraph of your appendix, which I believe is paragraph 3 that I just read.

A Okay. So remind me. We're on page 60 something?

MR. HAKLAY: 61.

THE WITNESS: 61.

BY MR. ISAJIW:

Q 61, paragraph 3 of Appendix A.

You said (as read and/or reflected:)

These other factors -- I'm sorry -- financial economists accept these other factors, including the Cammer factors, as tending to support the evidence of an efficient market.

What do you mean by "tending to support"?

A I guess just the general definition of tending.

Q Are they direct proof of the market efficiency?

A Well, so yours is a complicated question and this is why.

You know, there's -- courts have ruled stocks efficients ignoring, in fact, Factor 5. And

so, I mean, is it sufficient to just look at the first four factors?

Certainly courts have found it's sufficient to look at the first four factors.

I think most academics would agree that you want to look and see if there's a cause and effect relationship between a stock and information to determine whether or not a stock was efficient. Or a bond for that matter.

Q Okay.

In your view, how many Cammer factors would have to be satisfied to find a market for a security efficient?

A I have no opinion about that. I've never -- nor have I ever been asked to opine upon that.

Q Okay.

For example, if analyst coverage was very high, but trading very low, would that be sufficient?

A Again --

MR. HAKLAY: Objection. Sufficient to what?

MR. ISAJIW: Determine the market to be efficient.

MR. HAKLAY: Thank you.

THE WITNESS: From an academics perspective or a court's perspective?

BY MR. ISAJIW:

Q From an academics perspective.

A I have no idea. It's not anything I've ever thought about.

MR. HAKLAY: Here's four Diet Cokes for you.

THE WITNESS: Sorry. They're trying to get me hopped up on caffeine. Are we off the record for that? I know. I'm joking. Sorry. You'll edit the video.

BY MR. ISAJIW:

Q When conducting market efficiency analysis in evaluating the Cammer factors, are there any factors that you would feel comfortable excluding in your determination that a market is efficient?

A So now we're just talking about the Cammer factors?

Q Yes.

A I would need to think about it. I mean, again, I don't think S3 eligibility really plays into market efficiency.

I mean, it has to do with firm size, I

suppose, and their ability to file financials.

Is there anyone I would ignore?

Again, it's not a question I've ever asked myself. I mean, the court demands that I opine on these factors, or at least case law has suggested I need to opine on the factors and the court will then decide whether or not the market for that stock is efficient.

So it's not anything I've thought about other than S3.

Q Okay.

What if there was insufficient data to conduct an event study, for instance?

A So, again, so your hypothetical is there's insufficient information to conduct an event study. And I guess my question would be why? Because that --

Q Say there was not enough trading to conduct an event study over a specific period.

A I'm sorry. I just -- I don't understand your hypothetical example or your hypothetical question.

I'm not -- have I ever seen literature discussing the number of days needed to conduct an event study?

I'm not sure I have, as I sit here today.

Q Do you have a personal opinion -- I'm sorry.

Do you have a professional opinion?

A It's not something I've ever thought about.

Q Let's dig in a little bit more into the specific Cammer factor. So No. 1 was average weekly trading volume.

Why is trading volume an important measure of market efficiency, in your opinion?

A It's -- well, let's go to my report.

Q So --

A I'm trying to read my report. Hold on one second.

Yeah. I mean, it's -- again, it's not something I've thought about. It's something that the court demand.

Q What, in your view, would be the implication for market efficiency if a security had high trading volume?

A In general, I think economists believe that higher trading volume is an indicator of efficiency. But, again, it's -- it's not something I've ever considered.

I mean, there is a benchmark the courts

have used of 1 and 2 percent. I don't know if, you know, if it's 50 percent, is it somehow more efficient than a stock that's average weekly trading volume is 30 percent? It's not something I really thought about.

Q What would be the implication if trading volume was very low in terms of market efficiency?

MR. HAKLAY: Objection. Vague as to the words "very low."

THE WITNESS: Yeah. Again, I'm not -- there's no -- again, the court asked me to provide my opinion on this or provide my analysis with regards to this factor. So I've provided this analysis.

It -- yours is a question I've never really thought about.

BY MR. ISAJIW:

Q If a security had low trading volume or no trading volume, you've never thought about whether or not that would weigh on the efficiency of the market for that security?

MR. HAKLAY: Objection as to the word "low" as being vague.

THE WITNESS: Well, I mean, certainly -- for instance, I mean, we've seen bond cases where

there's no trading volume on a number of days. And the courts have found the market for those bonds are efficient.

So, you know, it's not something that I personally think about. To the extent that a court might think about it, I don't know. You could ask the judge or what his or her opinion is about that.

BY MR. ISAJIW:

Q I'm asking you for your opinion as an expert who has rendered a report discussing Cammer Factor 1 and the effect of weekly trading volume on inefficiency analysis.

And if your answer is you've never thought of it, that's fine, but I'm asking what your opinion is.

THE WITNESS: Could you reread his original question, please.

(The record was read back as follows:

"Question: If a security had low trading volume or no trading volume, you've never thought about whether or not that would weigh on the efficiency of the market for that security?")

MR. HAKLAY: Same objections I rendered before.

THE WITNESS: Yeah. You would need to look at that on a case-by-case basis.

BY MR. ISAJIW:

Q So in the case of no trading volume.

A I refer to my previous answer with regards --

Q Which was what?

A I told you, I found that there are -- certainly have been bonds with no trading volume or on days which found -- which courts have found to have been traded in an efficient market.

Q And as an economist, do you have a view as to whether or not that is an indication of an efficient market?

A I have no opinion one way or the other.

Q Let's talk about analyst coverage, which is the Cammer Factor 2.

Why, in your view, is analyst coverage an indicator for market efficiency?

A Well, I mean, I refer to this quote from the Cammer cover. And I'm looking at paragraph 26 of my report.

(As read and/or reflected:)

When investment professionals closely monitor a firm's information subsequently making buy/sell recommendations to their clients based on that information, investors bid up or down the market price of the stock to reflect the company's financial information as interpreted by the securities analyst.

So that's what the court finds.

Q So I'm asking about your professional opinion as an expert economist.

What would be the implication if a company has very high analyst coverage?

A Well, the implication would be that a lot of analysts follow the company.

Q In terms of whether or not the company trades in an efficient market.

A I think in -- I mean, I'm not quite sure how to answer the question.

I know -- again, I think -- let's look for -- yeah. Right.

So, for instance, and I'm reading from paragraph 26 of my report, this suggests that (as

read and/or reflected:)

The more analysts who followed a stock, the greater the likelihood that a stock traded in an efficient market.

I should have started this next sentence here. (As read and/or reflected:)

Barber, et al, 1994, found that coverage by one or two analysts strengthened the presumption of efficiency for a publicly traded stock.

Q So other than quoting from Barber, in your opinion, what is the implication of high analyst coverage?

A What's the implication? My -- my -- the implication is a lot of analysts follow the stock. Probably a large -- large company.

Q What would be in the implication in a market efficiency analysis if very few analysts covered a stock?

MR. HAKLAY: Okay. Vague as to what "very few" means.

THE WITNESS: Right. Again, I mean, the -- my best understanding with regards to academic work

is the work by Barber who basically -- Barber, et al, who found that one or two -- well, let's just read it again.

BY MR. ISAJIW:

Q Before you read it, I'm just asking for your view, sitting here today, as an expert economist.

A Right. My view is informed by their paper.

Q Do you have a view independent of the paper?

A No.

Q Okay.

When you are conducting a market efficiency analysis, how many analysts do you believe are required to cover a company before you believe it is an indicator of an efficient market?

A Again, I would have to look at that on a case-by-case basis. Clearly in this case, I believe that, as I've found -- let's just go to what I said with regards to my finding.

Right. So I'm reading from, excuse me, paragraph 32 of my report.

(As read and/or reflected:)

The number of analysts covering FXCM and the wide

dissemination of information about FXCM from Company press releases and from well-regarded and widely read sources in the news media support a finding of market efficiency for FXCM common stock during the Class Period.

And I -- that's for the equity.

If you want me to opine on the bonds as well, I'm happy to review my findings.

Q Did you draft that paragraph?

A Yes.

Q If there is a period of a year or two where only three analysts issued reports on FXCM, would you believe that that is sufficient under Cammer Factor 2?

MR. HAKLAY: Objection. Assumes facts not in evidence.

THE WITNESS: It's not my opinion -- it's not -- or it's not my job to form an opinion on your hypothetical example.

I present the information to the courts. In this case, I found that there was sufficient analyst coverage to indicate market efficiency in this specific case.

BY MR. ISAJIW:

Q So sitting here today, you can't answer the question that if there was a period of a year where only two or three analysts issued reports on FXCM, whether you would believe that that would be sufficient under Cammer Factor 2?

MR. HAKLAY: Objection. Misstates his testimony. It's asked and answered.

THE WITNESS: It certainly could be efficient -- I mean, sorry. It certainly could be sufficient.

BY MR. ISAJIW:

Q Let's talk about Cammer Factor 3. This is under your heading "Market Makers and Listing on the NYSE."

Why is the existence of market makers an indication of efficiency, in your view?

A Well, I mean, I think it largely agrees with the -- my view coincides with the Cammer court's opinion that (as read and/or reflected:)

> The existence of market makers -- and I'm reading from paragraph 33 of my report -- and arbitrageurs would ensure completion of the market mechanism;

these individuals would react swiftly to company news and reported financial results by buying or selling stock and driving it to a changed price level.

BY MR. ISAJIW:

Q Independent of the report, as an economist, what would be the -- your view of the implication if there were no market makers for a security in connection with an efficiency analysis?

A Well, so what do you mean by "market maker"?

And I mean that -- do you mean someone who is designated as a market maker whose job title is market maker?

Q In what context did you mean market maker when you wrote it in your report?

A My understanding of the Cammer court --

Q Was it --

A -- opinion.

Q -- somebody who was designated as a market maker?

A Right. So there is a title of a designated market maker in an NYSE stock.

Is that what you're referring to?

Q I'm asking what you were referring to when you used the phrase "market maker" in the report.

Were you referring to somebody who was designated as a market maker?

A So I don't know exactly what you mean by "designated."

And let me explain why.

Because there is a position called a -- there is someone called a "designated market maker" for each NYSE stock. Or at least one for each NYSE stock.

So I wouldn't, like, necessarily consider -- I mean, there are NASDAQ market makers. I don't know if you would consider them designated market makers.

There are people who are making markets off the floor. I don't know if you would consider them designated market makers.

Q I'm asking if you consider them designated market makers.

A Again, if you -- I don't believe -- I believe that there are many individuals or companies making markets in a stock that are not -- that do not fall under the definition of a designated market maker as explained or it's laid out by the NYSE.

Q In this case, can you give me any examples of those entities?

A Which entities?

Q The ones you just described who are making a market in a stock but are not designated market makers under your definition.

A Well, it -- well, so I do not know and, again, this is based on a mis- -- a clear definition of a designated market maker. Certainly Barclays Capital, BNY Mellon Capital Markets, JPMorgan, Morgan Stanley and Wedbush Morgan Securities made a market in this stock.

If we want to go to a complete list of market makers who made a market in the stock during the Class Period, we can go to my Exhibit 5.

MR. HAKLAY: Page 114.

THE WITNESS: Right. So there's multiple firms here. I don't -- what is it? 180, I believe. No. I'm sorry. It goes on to 115. So 205. I don't know if any of those are designated market makers as you -- because you have not defined designated market maker for me.

Again, if you're talking about the -- a designated market maker on the New York Stock Exchange as defined by the New York Stock Exchange,

as I sit here today, I don't know.
BY MR. ISAJIW:
Q In paragraph 34, you indicate that there were at least 205 market makers for FXCM common stock.
Did I read that correctly?
A I'm sorry. What paragraph?
Q 34, page 14.
A Page 34. Yes. That is correct.
Q Okay.
In your opinion, does the fact that there were at least 205 market makers for FXCM common stock tend to support the idea that the market for FXCM common stock was efficient?
A I believe that -- and I'm reading from page 38 in my report. (As read and/or reflected:)
The large number of market makers ... supports that FXCM common stock traded in an efficient market.
MR. HAKLAY: Let me just correct it. You read from paragraph 38, not page 38.
THE WITNESS: Oh, sorry.
BY MR. ISAJIW:
Q What would be the implication if there were

no market makers for FXCM common stock in terms of an analysis of market efficiency?

A I mean, I don't -- I haven't really thought about your hypothetical.

I mean, because I'm not clear. My understanding, I -- sorry.

If we're talking about designated market makers defined by the NYSE, it wouldn't have an effect necessarily.

I mean, people make markets off the floor. So -- I'm sorry. Let's --

Q If somebody made a market in any --

A -- what --

MR. HAKLAY: He's still answering.

THE WITNESS: Can you -- can you reread his question, please.

(The record was read back as follows:

"Question: What would be the implication if there were no market makers for FXCM common stock in terms of an analysis of market efficiency?")

THE WITNESS: I mean, that's honestly never -- something I've never even thought about.

BY MR. ISAJIW:

Q What if there were instead of 205 market makers, 100 market makers?

A That's not anything I've considered.

Q What if there were 50 market makers?

A Again, not a question I've asked myself.

Q What if there were less than ten market makers?

A Yeah. It would depend upon the situation.

Q But sitting here today, you can express no view as to whether or not that would have an implication for a market efficiency analysis?

MR. HAKLAY: Objection. Misstates his testimony.

THE WITNESS: It might have an implication.

BY MR. ISAJIW:

Q And if it had an implication, what would your view be on the implication it has?

MR. HAKLAY: Objection. Assumes facts not in evidence. Asked and answered.

Go ahead.

THE WITNESS: Okay.

I would need to look at that on a case-by-case basis.

///

BY MR. ISAJIW:

Q So currently, you cannot -- you do not have a view of the implication?

MR. HAKLAY: Objection. Misstates. Asked and answered.

THE WITNESS: Again, I would need to look at it on a case-by-case basis.

BY MR. ISAJIW:

Q You also note in this section of your opinion, you discuss the fact that FXCM's common stock was listed on an exchange; is that correct?

A Where are you reading from?

Q I'm not reading from your report. I'm just ...

Let's take it outside of the context of the report.

Do you know whether or not FXCM's common stock was listed on an exchange?

A It was -- yeah. It was -- yes.

Q Okay.

Was the fact that FXCM's common stock was listed on an exchange relevant to your analysis as to whether or not FXCM's common stock traded in an efficient market?

A Well, to the extent that some judges find

it helpful to be informed upon that question, I included that information.

Q In your view as an economist, is that relevant information to the analysis of whether or not FXCM stock traded in an efficient market?

A I'm not sure it's something I've ever really thought about.

So in your hypothetical, the stock doesn't trade on an exchange?

Q I haven't posed a hypothetical. I'm just asking if whether or not the fact that you cite in your report that FXCM common stock did, in fact, trade on an exchange is relevant to your analysis of whether or not FXCM common stock traded in an efficient market.

MR. HAKLAY: Objection. That question was asked and answered.

THE WITNESS: It formed my opinion that it traded in an efficient market.

BY MR. ISAJIW:

Q Okay.

In what way did it inform your opinion -- strike that.

Let me ask a better question.

Is being listed on an exchange an indicator

of efficiency, in your opinion?

A In my opinion? I believe that courts rely on that information to determine market efficiency.

Q When you were making a determination of market efficiency, do you rely on that information?

A I don't know if I've ever really thought about it.

I mean, can you give me -- well, I'm not supposed to ask questions. I apologize.

Q In your opinion, if a security was not listed on any exchange, would that have a bearing on whether or not it trades in an efficient market?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: It's possible. I mean, when you say "exchange," what do you mean?

BY MR. ISAJIW:

Q When -- have you ever heard the phrase "listed on an exchange" before?

A I have.

Q What is your understanding of the phrase "listed on an exchange"?

A Well, it's going to vary from place to place. I mean, my -- if I had to guess what your definition of exchange was, you would probably be

talking about the NYSE or the NASDAQ.

We're sitting, I don't know -- I don't know actually. Do they still have the Los Angeles Stock Exchange?

Certainly there's a San Francisco Stock Exchange. I don't know if that would fall under your definition --

Q So if all of --

A I'm trying to answer the question, please.

I'm not sure if that would fall under your definition of exchange.

And then, of course, stocks are traded off markets between companies. I don't know if you would consider that an exchange.

Q In this analysis for FXCM common stock, do you have an opinion as to whether or not it would be an indication of market efficiency if FXCM common stock did not trade on the NYSE?

A If it did not -- so the fact alone that it did not trade on the --

THE WITNESS: Could you reread the question, please.

(The record was read back as follows:

"Question: In this analysis

for FXCM common stock, do you have an opinion as to whether or not it would be an indication of market efficiency if FXCM common stock did not trade on the NYSE?")

MR. HAKLAY: Objection. Assumes facts not in evidence. Not a hypothetical, but couched as one.

MR. ISAJIW: I don't believe I couched that as a hypothetical. I was just asking about his opinion.

MR. HAKLAY: Okay.

Assumes facts not in evidence. Asks him to consider a situation that doesn't exist in his report.

THE WITNESS: So in your hypothetical example, you're suggesting that if -- if FXCM didn't trade on the NYSE, would that inform my opinion or would that inform my opinion about market efficiency?

Probably not. I mean, it can -- certainly there are all sorts of other exchanges it can trade on. Like the NASDAQ, which it did.

So I don't -- it's a really odd question. I'm not quite sure I --

BY MR. ISAJIW:

Q What if it traded on no exchanges?

MR. HAKLAY: Same objection.

THE WITNESS: Again, it's not something I've ever thought about. I mean, what do you -- what's a world with no exchanges? So it's traded within -- just between, let's say, institutional investors? Is that the world you're imagining?

I think I'm okay in asking this question because I'm clarifying his hypothetical example.

BY MR. ISAJIW:

Q Let's take that as an example.

A You know, that's something I would need to think about. I mean, there's no reason to think that if stocks are traded off exchanges between two parties that the stock is inefficient -- that a stock is not efficient.

Q There's no reason to believe that if a stock is just traded between two parties that it doesn't trade in an inefficient market?

MR. HAKLAY: Objection. Misstates his answer as to completeness.

But go ahead.

THE WITNESS: Again, I -- you would need to look at this type of thing on a case-by-case basis.

I mean, again, I gave you a hypothetical example, and I'm not -- I'm not even sure how to answer my own hypothetical example.

And I clearly -- I'm not quite sure how to answer your hypothetical example.

BY MR. ISAJIW:

Q Does listing on an exchange in and of itself mean that the security trades in an efficient market?

A Does trading on an exchange --

THE WITNESS: Could you reread the question, please.

(The record was read back as follows:

"Question: Does listing on an exchange in and of itself mean that the security trades in an efficient market?")

THE WITNESS: I think courts have certainly found that to be the case.

BY MR. ISAJIW:

Q And what about your professional opinion?

A It's not any -- it's not something I've thought about.

I don't think anyone's ever asked me that

question before.

Q And when you conduct your market efficiency analysis, do you have a professional opinion as to whether any of the Cammer factors are more important for finding of efficiency than others, generally speaking?

A That's an interesting question.

Let's go to my discussion in Factor 5.

I mean, I think economists, when they talk about market efficiency, oftentimes discuss event studies. But as I've stated previously, you know, we're seeing an increasing number of courts find for market efficiency ignoring the fifth Cammer factor.

Q When you say "economists," do you include yourself in that statement?

A I do.

Q Okay.

So do you believe that Factor 5 is one of the more important Cammer factors in a market efficiency analysis?

A It's not something I've ever been asked to opine upon.

I present the information that courts use to determine market efficiency. And so I do event studies.

Q What is an event study designed to analyze?
Let me withdraw that question.
Is it fair to say that you use an event study to try to determine whether or not there's a cause and effect relationship between new material information and the reaction in the stock price establishing -- to establish market efficiency?
A Is that stated somewhere in my report? It sounds like something from my report.
Q I'm asking if you agree with the statement.
A Well, if the statement is in the report, I would like to see the statement.
Q Other than -- I'll point you to the paragraph where you discuss it, but before I do, you can't answer it without reference to the report?
A I just want to be as accurate as possible. We are trying to be as accurate as possible here; right?
Q We are.
A Well, so if you're reading from something from my report, by all means, let me look at it.
Q It's paragraph 52.
A So it is from my report.
Okay.
Q Now that you've reviewed paragraph 52, is

it fair to say that you conduct an event study to determine if there is a cause and effect relationship between new material information and the reaction in the stock price in order to help establish market efficiency?

A I believe that is correct.

Q In your view, if there is information that is new and material but the security price does not react, does that suggest that the market is not efficient?

A No.

Q What if the information is new and material and the security doesn't trade at all, does that suggest that the market is not efficient?

A Not necessarily.

Q Can you -- in the presence of new and material information -- sorry -- strike that.

If a security does not react to new and material information in terms of price and does not trade based on new and material information, do you believe that has any bearing on whether or not the security trades in an efficient market?

MR. HAKLAY: Objection. Vague as to "any bearing."

THE WITNESS: Not necessarily.

BY MR. ISAJIW:

Q Would you incorporate that into your analysis of market efficiency?

A What do you mean by "incorporate"?

Q Would you incorporate -- sorry.

When you analyze market efficiency, if you encountered a situation where you believed there was new and material information but the price did not react, would that be relevant to your market efficiency analysis?

A Possibly.

I mean, if I -- if a firm announces earnings, I would argue that that information was material. If that earnings announcement was in line with expectations, I wouldn't necessarily expect to see a stock price movement.

I mean, that would just be one such example.

Q In that example, if the announcement was in line with expectations, would it be new?

A To the extent that the company is stating it? I mean, there's all sorts of things in an earnings report.

So, I mean, without -- I mean, my guess is, yeah, there's certainly some information in there.

I mean, is confirmation of expectations new information? I mean, from a philosophical standpoint? I would think so.

Q From an economist's standpoint, do you agree with that?

A Well, I think the information -- I think information -- let's say -- let's go back to my example.

I believe that that information, even if it's just confirming expectations, is material to investors.

I would not nec- -- but, again, even with that being material information and it is new to the fact that it has confirmed previous expectations, that would be something that would interest the investing public. And all other things equal, in a vacuum, I wouldn't necessarily expect the stock price to move.

Is now a good time for a break?

MR. HAKLAY: It's been about 57 minutes.

THE WITNESS: Is that a "yes" or "no"?

I would like to take a break.

MR. ISAJIW: Okay.

We can go off the record.

MR. HAKLAY: Okay.

THE VIDEOGRAPHER: We are going off the record.

The time is 11:42 a.m.

(At 11:42 a.m., the deposition of ADAM WERNER, Ph.D., was adjourned for noon recess.)

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(At 12:37 p.m., the deposition of ADAM WERNER, Ph.D., was reconvened.)

THE VIDEOGRAPHER: We are back on the record.

The time is 12:37 p.m.

EXAMINATION (Continued)

BY MR. ISAJIW:

Q Dr. Werner, I want to take you back to Exhibit 4 of your report where you tally the number of reports issued by analysts during the Class Period in this case. Page 104.

Was it important, in your view, that these analysts issued a report as opposed to just attending FXCM's earnings calls in connection with your market efficiency analysis?

A Again, I just present the information that the courts ask for. So if they want to know about analyst's coverage, that's one of the Cammer factors, that's what I present them with.

Q When you're analyzing the Cammer factors, it's not an important part of your analysis? You're literally just presenting the facts?

A No. I mean, I read the analyst reports, review the analyst reports, but if you're asking me --

THE WITNESS: Can you repeat his initial question, please.

(The record was read back as follows:

"Question: Dr. Werner, I want to take you back to Exhibit 4 of your report where you tally the number of reports issued by analysts during the Class Period in this case. Page 104.

Was it important, in your view, that these analysts issued a report as opposed to just attending FXCM's earnings calls in connection with your market efficiency

analysis?")

THE WITNESS: That's not something I've ever thought about.

BY MR. ISAJIW:

Q And there are a number of reports listed here. Again, in your view, if there was a period of time for a year or two where only one or two analysts covered the report, would that be relevant to your market efficiency analysis?

A It's possible.

Q Okay.

Is it something that you considered here?

A I found that based on analyst coverage and -- the analyst coverage for this stock supported my finding on market efficiency.

Q Let's switch back to Cammer Factor 3 in connection with the common stock, which is paragraph 34 of your report.

A I'm sorry. Does Exhibit 4, doesn't Exhibit 4 deal with Cammer Factor 3 or --

Q Exhibit 4 is analyst coverage; is that right?

A Yeah.

Q In your view, is analyst coverage Cammer Factor 3?

A Well, it says (as read and/or reflected:)

Factor 3: Prominent

Underwriters and Market Makers.

You suggested it was different the way you posed your question.

Q Maybe we misunderstood. I was saying, I want to go and focus now on Cammer Factor 3, paragraph 34, of your report.

Where am I?

A Paragraph -- oh, sorry.

MR. HAKLAY: The market makers.

MR. ISAJIW: Yes.

MR. HAKLAY: Okay.

Analyst coverage is the early one.

MR. ISAJIW: I was trying to move from analyst coverage to market makers --

THE WITNESS: Oh, I'm sorry.

MR. ISAJIW: -- well, to Cammer Factor 3 more generally.

MR. HAKLAY: Got you. Thank you.

THE WITNESS: Okay.

BY MR. ISAJIW:

Q So if you look at paragraph -- I'm sorry -- 33 of your report on page 14, second sentence, it says (as read and/or reflected:)

The Cammer court stated, quote, the existence of market makers and arbitrageurs would ensure completion of the market mechanism; these individuals would react swiftly to company news and reported financial results by buying or selling stock and driving it to a changed price level.

Did I read that correctly?

A That is correct.

Q Okay.

What is your understanding of arbitrageurs, as you use it in that sentence?

A People who are trying to make arbitrage profits. Not in your common academic definition of arbitrage, but ...

Q What is the common academic definition of arbitrage?

A I think ac- -- and you'll forgive me. It's been years since I've actually looked at the formal definition. I believe it is making a riskless profit.

Q Okay.

And what do you think it means in

connection with how it's used in paragraph 33?

A I think here it's more common understanding of, you know, people trying to make money buying and selling stuff.

Q Okay.

Why would arbitrageurs be relevant to your market efficiency analysis?

A Oh, well, to the extent that there might be market inefficiencies, oftentimes, that's how arbitrageurs attempt to make money.

Q How so?

A What do you mean -- well, I mean, what do we say? Buy low, sell high? Is that right? Buy low, sell high. Yeah. Sell high, buy low.

Q So if there are inefficiencies, the arbitrageur is attempting to capitalize on those efficiencies; is that -- is that the concept?

A Well, I mean, you call it an inefficiency. They're attempting to -- I guess -- yeah, to the -- I believe actually that sentiment is correct.

To the extent that there are inefficiencies, an arbitrageur would try to capitalize on them.

Q In connection with this analysis of FXCM common stock, what investigation did you do to

determine whether or not there was the existence of arbitrageurs, if any?

A Well, I don't know if you -- I wouldn't necessarily consider institutional investors arbitrageurs.

Some institutional investors probably are trying to make arbitrageur profits, so I'm not sure how to answer that question.

Q Sitting here today, do you believe that you did an investigation into arbitrageurs in connection with your analysis?

A I don't think I ever looked at a piece of paper that described any specific individuals or firms, entities, agents as arbitrageurs.

Q Is it fair to say, then, the arbitrageurs did not factor into your analysis in connection with this particular report?

A Is it fair to say? I don't know if it's fair or unfair.

Q Would you agree with it?

A I don't know. I mean, again, to the extent that I don't know enough about the institutional investors to know whether or not they're arbitrageurs.

Q Okay.

A So the fact that they were institutional investors certainly informed my opinion.

Q And the fact you don't know enough about them would be evidence that you did not independently analyze them as arbitrageurs in connection with your analysis?

A I did not independently do research on the trading strategies of the institutional investor. That is correct.

Q Okay.

Switching back to the selection -- not switching back.

Let's switch gears to focus on your event study in connection with Cammer Factor 5.

A So now let me just ask a clarifying question. When we talk about events studies, for the time being, we're focusing on the equity; correct?

Q Yes, for right now.

A Okay.

So I should just assume that any question you ask about an event study, at least during this time period, you're referring to equity.

Q I'll do my best to make sure the questions are clear, but to the extent there's a difference

that makes a difference and you believe it's unclear, please let me know.

MR. HAKLAY: So you should not assume that it's one and not the other unless he says so.

THE WITNESS: Yeah. I guess -- right. That is exactly.

MR. ISAJIW: There's no question pending to clarify. So if there is confusion, please let me know. That's all I'm asking.

THE WITNESS: No. I'm just trying to save time.

BY MR. ISAJIW:

Q So for your event study -- before you conducted the event study in this case, what did you know about FXCM as a company?

A Before I performed the event study?

Q Correct.

A I mean, I suppose I had probably read the complaint and read some analyst articles before the event study was performed.

Q Anything else?

A Not off the top of my head.

I mean, maybe I looked at the website. I honestly don't recall.

Q Okay.

And when you're designing an event study, how do you identify which dates to include in -- for testing market efficiency?

A Well, it depends on the situation.

I mean, typically, I think I -- with regards to event studies, I almost always -- and I'm now looking at page 25. So this is paragraph 66 and 67. I always attempt to at least as part of my event study, or an event study, (as read and/or reflected:)

Focus on disclosures of information related to the allegations in the Complaint.

I'm reading from paragraph 67.

Q Okay.

And generally when you're designing an event study, is there anything else that you almost always look at, any other types of events?

A In a litigation setting?

Q In the setting of doing an expert report to determine market efficiency.

A It really depends on the company.

In this -- as I said, I always attempt to use this third criterion or this third event that I've highlighted in my last answer. Beyond that,

it's really on a case-by-case basis.

Q And the -- what you highlight, is that the -- I just want to make sure I understand correctly -- the allegations in the complaint?

A Correct.

Q Okay.

You state in your report --

A I'm sorry to interrupt you.

Just for clarification, are we making a distinction between the event study and the news/no-news analysis?

Q For right now we're talking about the event study. I'll have questions about the news/no-news analysis later on.

A Right. You understand that that is based -- the analysis is based partially on my event study.

Q I don't understand what's in your report. So I'm trying to understand.

A Well, you perform -- in order to do a news/no-news analysis, you have to perform an event study.

Q Okay.

A So if we're talking about the event study section as opposed to my news/no-news analysis,

that's fine. I just wanted to make sure when you were talking about event study, you were specifically talking about this section and not an event study in general.

Q I thought that that was clear --

A Well --

Q -- but if it wasn't, I appreciate the qualification.

I'm looking for when you were designing your event study, the process by which you chose the events to include in the event study.

And I believe that you said one of the things that you always do is look at the events as described in the complaint.

A Well, I believe I said attempt to always do, but, yes, that's accurate.

Q Okay.

You state in your report at paragraph 68 that (as read and/or reflected:)

> An event study testing market efficiency does not require a comprehensive identification of all events during the Class Period, including all of those cited in the Complaint. An objective screen for

a market efficiency event study may capture only some of those events. Did I read that correctly?

A That is correct.

Q What is your objective screen process?

A Again, it depends on the case.

Q What was it here?

A In terms of -- well, there was one corrective disclosure, and I don't believe during the Class Period there were any other -- what was the term I used here? Allegation-related events during the Class Period.

Q So your objective screen process included looking at the corrective disclosures in the complaint?

A Well, I mean, no, if there was, like, in a case, let's say, where there is some kind of inflationary statement or the allegation is that, let's say, your client in the middle of the Class Period said we're earning a billion dollars in drafts when, in fact, they weren't, that would typically -- and I would typically, or I might look at that.

So that wouldn't be a corrective disclosure. All right.

Q So focusing on this event study for this particular case, you looked at the corrective disclosure and you discussed an objective screen.

I'm just asking what else was involved in your objective screen for this case.

A Well, that, to my knowledge, that is the only -- I did not find any inflationary statements made during the class, or I have not seen any allegations, as I sit here today, about inflationary statements or other corrective disclosures.

So the screen I used was, as I stated here, focusing on disclosures of information related to the allegations in the complaint.

Q And how many events did you settle on after your objective screen for this event study?

A For this particular event?

Q Correct. For this particular event study.

A Oh, for the particular event study. In full, three.

Q Okay.

And those three were January 14th, 2012; correct?

A Well, that was one.

Q Okay.

A Wait. Let me go there before we start

misquoting me.

Q I don't believe I was misquoting you.

A No, it's just possible.

All right. So where are we? Selection and selective of acquisition.

Q Let me withdraw that question.

Do you agree that you chose three event dates in connection with this event study?

A That is correct.

Q And only three event dates in connection with this event study?

A I'm sorry.

THE WITNESS: Can you reread the question.

(The record was read back as follows:

"Question: Do you agree that you chose three event dates in connection with this event study?")

THE WITNESS: I chose to look at three events. I believe there was another acquisition that was small during the Class Period. So if I was looking at all acquisitions, I suppose I looked at that event.

But there was -- I don't remember the exact size, but it was extremely small and it wouldn't be

something that I would expect to result in a material change in information about the company that would result in a -- be significant enough to result in an abnormal stock return.

BY MR. ISAJIW:

Q So you did not include whatever that acquisition was in your event study?

A I -- that is correct.

Q And your event study covers a Class Period that is nearly five years long; is that correct?

A That is correct.

Q Are you comfortable drawing any reasonable conclusions based on analyzing three days over a five-year period?

A Well, with -- in combination with my news/no-news study, yes.

Q What if you excluded the news/no-news study and just looked at an event study three days for a five-year Class Period?

MR. HAKLAY: Objection. Calls for hypothetical.

THE WITNESS: Right.

So in your hypothetical, I didn't do the additional analysis. I only looked at three days during the Class Period. It would really depend

on -- I would need to look at that on a case-by-case basis.

BY MR. ISAJIW:

Q As an economist conducting a market efficiency analysis, would you have concerns conducting an event study for a five-year period based on three events?

MR. HAKLAY: Objection. Vague.

THE WITNESS: Along with my news/no-news analysis, in combination with those two things, no. I clearly didn't have a concern, as I only looked at three --

BY MR. ISAJIW:

Q What about with -- I'm sorry.

MR. HAKLAY: Finish the sentence.

THE WITNESS: I only looked at three days.

BY MR. ISAJIW:

Q What about excluding a news/no-news analysis, would you have a concern?

A So that's an incomplete hypothetical and I would need -- it would really -- I would need to determine that on a case-by-case basis.

Q So as an economist, sitting here today, you can't tell me whether or not you would have concerns basing a five-year Class Period conclusion on three

events without a news/no-news event study?

MR. HAKLAY: Objection. Vague.

I apologize. I thought you were done.

THE WITNESS: I refer to my previous answer.

BY MR. ISAJIW:

Q Okay.

In your prior work, have you ever looked at a five-year class study with fewer than -- I'm sorry.

Have you ever conducted an event study for a Class Period of five years with fewer than three events?

A In a market efficiency analysis?

Q Yes.

A As I sit here, I don't recall.

Q Sitting here today as an economist, do you have a view on -- for a Class Period of five years how many events would be too few events?

A It's not anything I've thought about.

I mean, again, that is the purpose of including a news/no-news analysis is it looks at news over the entire Class Period.

Q Okay.

So for the event study if you had two

events over a five-year Class Period, that would not cause you concern?

A Again, it would have depended upon the situation.

I mean, certainly, I looked at two days during the bond event study period.

So ...

Q Okay.

So the first day in your event study is June 14th, 2012. And that is the day that FXCM announced the acquisition of Leucadia Markets; is that correct?

I'm sorry. Lucid Markets; is that correct?

A That is correct.

Q Okay.

Why did you decide to include this acquisition event?

A Well, in conducting my event study, and I'm reading from paragraph 56 now (as read and/or reflected:)

> I reviewed the history of the company over the course of the Class Period as presented in news articles, analyst reports, and Company announcements and filings.

The events during and immediately following the Class Period that I determined are appropriate for the inclusion in the market efficiency event study are June 14th, 2012; January 20th, 2015; and February 7th, 2017. The events were selected on the following basis.

And so if you wanted me to read paragraphs 57 and 58 as to how I chose that, I would be happy to do that as well.

Q We have your report. So I don't want you to read it again. I'm just asking for additional color, if you have it, on your selection process for these event studies.

A I think my report fully lays that out for you. So ...

Q When you conduct event studies, do you always look for acquisition dates?

A Not necessarily.

Q Why did you look for acquisition dates for this event study?

A Well, so I'm reading from paragraph 57 (as read and/or reflected:)

In 2012, 2013 and 2014, FXCM's business strategy included making acquisitions to expand its customer base -- if I'm going too fast let me know -- in those markets where it has low penetration. The Company acquired other companies "to expand [its] presence and capabilities in the institutional marketplace."

Given FXCM's business strategy, announcements of large acquisitions could be expected to impact the value of the Company. It follows that on certain dates when the Company announced a large acquisition, the value of FXCM common stock would be expected to move.

Q Thank you.

How many acquisitions did FXCM make during the Class Period?

A Well, let's see -- as I sit here, I believe it was two.

Q Okay.

How many did you include in your event study?

A One.

Q On what basis did you exclude the second acquisition that you're aware of?

A It was small. And as an economist, I wouldn't have expected it to have a statistically significantly impact on the stock price.

Q What is the threshold by which you determined it was small?

A As I sit here, I don't recall.

Q Did you test whether or not it has a statistically significant result on the stock price?

A Well, to the extent that my Event Study Results are presented in -- let's see where it is here.

Q Just before you go in there, does the second acquisition that you did not include in your event study include the -- would that be included in your results?

A Well, the abnormal return on that date would be included in my results. So yes.

Q Okay.

Sitting here today --

A I'm just -- hold on. Let me just refresh

my recollection.

Q I don't believe there's a question pending.

A Oh, okay. Go ahead.

Q Sitting here today, and I -- is there -- can you give me any explanation for why you excluded this second acquisition?

MR. HAKLAY: Objection. Asked and answered.

You may answer again.

THE WITNESS: Yeah, it was too small.

BY MR. ISAJIW:

Q Okay.

And do you have any recollection on how small it was?

A I do not.

Q Do you remember if it was half the size of the event -- the acquisition that you included?

A At this point, I would be speculating. I believe it was smaller than that. But I do not recall.

Q And is that information included anywhere in your report?

A It -- I don't believe so.

Q Okay.

The second event that you chose was the

January 20, 2015; is that correct?

A That is correct.

Q And why did you choose that day?

I'm sorry. I'll withdraw that question.

Do you recall that that was the day that the Swiss National Bank had a flash crash?

A I believe that's correct.

Q And that was the day that FXCM announced a $225 million loss and a possible regulatory capital breach?

A Let me just look at the data to fully refresh my memory.

Yeah, I believe that's correct.

Q What is your understanding of FXCM's regulatory capital requirements?

A As I sit here today, I don't remember.

Q You don't remember, does that imply that you at one point knew but don't remember now?

A I believe that's correct.

Q Generally speaking, what is your understanding of a regulatory requirement?

A Well, it's usually a requirement stated by a government agency or some kind of -- I don't know, I mean, I suppose if you -- I don't know if you consider things like this CFTC a government

agency -- requirement with regards to how much capital they have.

Q Okay.

In this case, do you know which regulator was relevant to the regulatory capital requirement for FXCM?

A I can refresh my memory by looking at the press release by the company on January 15th, 2015.

But as I sit here right now -- well, hold on. I may be able to give you an answer to that question.

MR. HAKLAY: Can you hang on a second while you do that?

BY MR. ISAJIW:

Q Let me ask a different question.

Are regulatory capital breaches normally something that you would look for when conducting an event study?

A It depends on the situation.

Q What situations would you look for regulatory capital events when conducting an event study?

A Well, I mean, so by way of example, one that would require a 300-million-dollar infusion of cash would certainly be one.

Q Have you ever used a regulatory capital breach in any other market efficiency event study?

A I believe so.

Q Which ones?

A I don't recall. Certainly -- I've certainly worked on FDA cases where that's been the case.

Yeah, at least some. Yes.

Q Were you aware of the January 2015 regulatory capital breach before you conducted your event study?

A Well, I believe I had read about it prior to conducting my event study.

Q Was that in the complaint? Meaning, did you read about it in the complaint?

I don't think it's -- I don't want to require you to read the entire complaint.

Would it be fair to say that you likely found out about the regulatory capital event from the complaint?

A I don't know.

Q Can you think of any other source where you would have found out about it?

A Yeah. Sure. In my review of news and analyst reports.

Q And is regulatory capital violations something that you typically review for when designing an event study in connection with a market efficiency analysis?

A As I stated -- yeah. So I'm going back to paragraph 56. (As read and/or reflected:)

> To identify appropriate event dates for the market efficiencies event study I reviewed the history of the Company over the course of the Class Period, as presented in news articles, analyst reports, and Company announcements and filings.

Q When you start any event study, not necessarily this one, is regulatory capital events one of the things that you look out for when you're looking at a company's reports?

A I typically do the exact same process that I just described.

Oftentimes, there are not regulatory capital breaches in some of my cases. So to the extent that those are not in any news related to an additional company, I don't review them.

Q The third event that you chose was February 6th -- the third date was February 6th,

2017, and that's the alleged corrective disclosure event.

Is that correct?

A Correct.

Q Okay.

And I think you testified -- well, sorry. I don't want to -- do you always use alleged corrective disclosure events in your market efficiency studies?

A To the extent that I believe they were material, I attempt to.

Q And how do you determine that they were material before conducting the study?

A Well, I mean, there are certain, you know, there may be things mentioned in a complaint that have nothing to do with the alleged allegations. And so I would typically ignore those.

Q So your process to determine which events to include in the event study come from a review of the complaint and a judgment as to which ones you believe are material to the allegations in the complaint?

A In addition to the process I described previously.

Q Which was what?

A Again, reading from paragraph 56 (as read and/or reflected:)

To identify --

Q If that's what you're referring to, you don't need to reread it. I wanted to make sure that when you said what I had described previously that we were on the same page.

A Did you -- oh, okay.

Q In paragraph 8 of your report, you state that (as read and/or reflected:)

FXCM common stock traded in an efficient market during the Class Period.

Does that mean that you conducted -- that you concluded that the stock traded in an efficient market on each day during the Class Period?

A My conclusion is that it traded in an efficient market throughout the Class Period.

Q Okay.

A That is my conclusion.

Q And so --

A That is what I was asked to perform. That's what I concluded.

Q And does that conclusion mean that you concluded that it traded in an efficient market on

each day of the five-year Class Period?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: I've explained to you what I have been asked to do. That's what I did.

BY MR. ISAJIW:

Q Sitting here today, based on the analysis that you did, did you conclude that FXCM common stock, in fact, traded in an efficient market in each day of the five-year Class Period?

A Again, I was asked to determine whether or not the stock traded in an efficient market during the Class Period. That is what I did -- did an analysis on, and that's what I concluded.

Q Would you agree that over a five-year Class Period a market for a particular security could be efficient at some periods and inefficient during other periods?

A So you're asking me a hypothetical based -- the question is could it occur?

Q That's my question.

A Anything -- almost anything can occur. So based on that definition, it is possible.

Q Okay.

Did you do an analysis in this case to

determine whether it did occur?

A Again, I was asked to determine whether or not the stock was efficient during the Class Period. That is what I looked at.

Q So when you come to the conclusion that it was efficient -- it traded in an efficient market during the Class Period, are you inferring that trading over the whole Class Period for FXCM common stock was efficient based on your sample of -- based on your sample event of three days?

A Again, I performed a news/no-news analysis. I did my event study. I looked at the other eight Cammer factors or other seven Cammer factors and determined that the stock traded in an efficient market during the Class Period.

Q You also state that (as read and/or reflected:)

> FXCM Notes traded in an efficient market during the portion of the Class Period when they traded, which is June 24th, 2014, through February 7, 2017.

Is that correct?

A That is correct.

Q In your opinion, does that mean that the

bond also traded in an efficient market on each day between June 24th, 2014, and February 7th, 2017?

A Again, my finding was that the stock -- I'm sorry -- the bonds traded in an efficient market through June 24th, 2014, through February 7th, 2017.

That's what I was asked to opine upon. That's the analysis I performed. That's the conclusion I reached.

Q And did you do any -- other than what's in your report, did you do any direct testing of the efficiency of markets on a daily basis throughout the Class Period for either the notes or the stock?

A I'm confused.

What do you mean by tested for efficiency on a daily basis? Like explain -- describe one of these tests to me.

Q I'm asking what test you did.

A Well, I told you what I did. And I told you that I determined the stock traded in an efficient market over the Class Period, and it's traded during an efficient market during those -- its period.

Q And my question was: Other than the test described in your report, did you perform any others?

A Oh, other than the tests performed in my report? I don't believe so.

Q Okay.

When you were designing your event study, did you look at earnings days as potential events?

A Well, to the extent that 8-Ks possibly looked -- talk about earnings, I certainly did my news/no-news analysis.

Q So focusing on the event study portion of your analysis, did you include any earnings days?

A Unless -- I don't know. I mean, let me look at their 10-Qs. I don't know if there was an overlap between the event days I used and the issuance of 10-Qs.

I assume when you say "earnings days," are we just talking about 10-Qs and 10-Ks? Is that your definition of an earnings day?

Q Would any other events be included in your definition of earnings days?

A Not typically. But, again, it's -- it would depend on the situation. I suppose you could have, I don't know, when you consider -- well, I don't want to speculate.

So let's look at their ...

Do you have a pen I can borrow? Do you

have a piece of paper?

MR. HAKLAY: I do.

THE WITNESS: Thank you.

I'm more than happy to turn this over to you, which I'm obligated to do.

Hold on one second.

BY MR. ISAJIW:

Q Let me ask a different question.

A Okay.

Q The three days that we just discussed which were included in your event study, were any of them included because they were an earnings day?

A I stated the reason why I chose them.

(Reporter clarification.)

THE WITNESS: I guess the logical conclusion is no.

MR. ISAJIW: Okay.

MR. HAKLAY: He said, "why I chose them."

BY MR. ISAJIW:

Q Were there earnings days, during the five-year class periods, available to include in your event study?

A There were certainly earnings days. I don't recall whether or not those earnings days were earnings surprises.

I mean, look, that's what -- that's one of the difficulties in performing an earnings day event study.

Most of the time when earnings are -- meet expectations, you don't typically see a statistically significant stock price movement.

So looking at those days doesn't really provide you with any information.

Now, in a lot of these classes; right, the end of the Class Period or one of the corrective disclosures might be in an earnings announcement, and so then you'd certainly look at an earnings day.

But so over, like, if I were to look at a five-year Class Period, my expectation on how many of those earnings days would contain new material information that would cause -- that were severe enough to cause a statistically significant stock change, or stock decline, stock increase, would be relatively low.

Q What -- did you do an analysis to determine that in this case when you conducted -- when you designed your event study?

THE WITNESS: Can you reread the question, please.

(The record was read back as

follows:

"Question: Did you do an analysis to determine that in this case when you conducted -- when you designed your event study?")

THE WITNESS: I don't understand the question.

BY MR. ISAJIW:

Q Did you do an analysis in connection with your event study in this case to determine whether or not earnings days were appropriate to include?

A To the extent that I, again -- well, rather than go there. I refer you to paragraph 56. And so to the extent that there were earnings days during the Class Period, yes, certainly would be something I considered.

Q Let me point you to paragraph 76 of your report, page 29.

When you were conducting your event study for the stock here, you chose to break the Class Period up into yearly sub periods; is that correct?

A That is correct.

Q Okay.

Can you give me an explanation as to why you chose to do that?

A Based on my experience.

Q What in your experience suggested that breaking it up into sub periods was appropriate?

A Something I've oftentimes seen based on the fact that there was a structural break in the company's stock. All those things informed my opinion.

Q All which things?

A All the things I just mentioned.

Q It's something you've often seen and based on the fact that there was a structural break in the company's stock.

Any other things?

A Oh, it's something that has commonly been accepted by courts, also would be another.

Q What difference in the analysis would there be if you did not break it up into sub periods?

MR. HAKLAY: Objection.

In this case or is it a hypothetical?

MR. ISAJIW: In this case.

MR. HAKLAY: Okay. Thank you.

THE WITNESS: Well, given that there was a structural break, my guess is you would have some weird regression results.

///

BY MR. ISAJIW:

Q And what do you mean by "structural break"?

A Well, the stock -- as of the flash crash, the stock traded differently before and after that date.

Q Okay.

In paragraph 76 you say (as read and/or reflected:)

> Prior to running a regression, one often decides on an event window over which to measure the relationship between the security at issue and the corresponding market and/or industry factors.
>
> Given that the Class Period in the current case for FXCM is approximately five years in length, and so that the regression estimates would be relatively contemporaneous for the events I [verbatim] tested, I ran regressions on a daily returns covering the entire Class Period broken down into 252 day periods.

Did I read that correctly?

A Where are you reading from?
Q Paragraph 76.
A Well, do you want to reread it?
Q I don't.
A Will you stipulate that what you read was from my report?
MR. HAKLAY: It was.
MR. ISAJIW: I generally don't stipulate with witnesses.
MR. HAKLAY: That's fine. There was one word, whatever, it was not important.
THE WITNESS: He just -- I didn't know that he was reading from my report.
BY MR. ISAJIW:
Q I'm not trying to be argumentative. I'm literally just trying to understand the process here.
A Okay. But then just point me to the paragraph. And I'm happy -- if you're reading from the report, just tell me, hey, we're on paragraph 56, or whatever it is.
Q I believe I've pointed you to --
A Paragraph 76.
Q -- 76 a number of times. But, again, I'm asking you, feel free if you have questions or if

I'm not clear, let me know.

What I want to focus you on in this report is in connection with your breaking this down into multiple sub periods, you say, in paragraph 76, that (as read and/or reflected:)

> The regression estimates would be relatively contemporaneous for the events being tested.

Do you see that?

A Yes, I do.

Q Okay.

What do you mean by "relatively contemporaneous"?

A Well, that's when the events are taking place. So in just, I guess, a common understanding of what contemporaneous means.

Q That's when which events are taking place?

A Well, events throughout the -- I mean, announcements are being made throughout the entire Class Period; right. There is news being released during the entire Class Period.

So when I say "contemporaneous," I mean contemporaneous when the news is being released.

Q Are you talking about the news related to the three dates you chose as the basis of your event

study?

A I'm talking about all company news.

So, again, referring to paragraph 56.

Q So you chose five regression estimation periods here, March 15th, 2012, to February 1, 2013; February 4, 2013, to February 3, 2014, et cetera. This is the last couple of sentences of paragraph 76; is that right?

A That is correct.

Q How did you decide how many sub periods to use in connection with this analysis?

A Well, when I decided to use annual trading days -- or annual -- what do I say here? When I decide to use a full year of data, that's how the sub periods broke up.

Q Is it fair to say that you broke it out -- you broke the analysis out into sub periods because stocks may behave differently during the sub periods in connection with your analysis?

A Is it safe to say?

I'm not sure I would use that terminology.

Q I believe I said "fair."

A Oh, I'm sorry.

THE WITNESS: Could you reread the question. Maybe I misunderstood it.

(The record was read back as follows:

"Question: Is it fair to say that you broke the analysis out into sub periods because stocks may behave differently during the sub periods in connection with your analysis?")

THE WITNESS: I don't know if I would say -- I'm not sure I would use the word "fair." I mean, it's something I've done before. It's something I did in this case.

BY MR. ISAJIW:

Q Is it true to say that you broke -- that you broke out the analysis into sub periods because stocks may behave differently during the sub periods in connection with your analysis?

A I'm sorry.

THE WITNESS: Can you reread the question, please.

(The record was read back as follows:

"Question: Is it true to say that you broke out the analysis into sub periods because stocks may

behave differently during the sub periods in connection with your analysis?")

THE WITNESS: I don't know if it's true or not. I'm not quite sure.

I don't understand the question.

BY MR. ISAJIW:

Q So other than what's in your report, do you have -- can you give me any other explanation as to why you broke this out into five sub periods?

A You mean other -- other than what's in my report and what I've stated previously in my deposition?

Q Correct.

A I don't believe so. I mean -- well, I mean -- yeah. We'll leave it at that. That's fine.

Q I'm just trying to get your best answer as to why you conducted the analysis in this way. And if you believe you've already given me your best answer, that's great.

And if not, that's what I'm trying to understand.

A Okay.

Let -- let -- well, I don't want to --

MR. HAKLAY: There's no question for you.

THE WITNESS: Right. That's correct. Yes.

MR. HAKLAY: Don't worry. He'll ask another one.

BY MR. ISAJIW:

Q So let's turn to Exhibit 8a of your report on page 165.

Backing up for a second.

When you were doing your study in connection with this report, did you find that FXCM financial and market positions changed throughout the Class Period?

A What do you mean by their "market positions"?

Q Let's say financial position.

A That's still vague. I don't understand the question.

Q As an economist, you don't understand what a financial position of a company would be in connection with an analysis throughout a Class Period in a securities litigation case?

MR. HAKLAY: That's actually not a question.

Please ask one.

MR. ISAJIW: I believe it was a question.

Q What do you understand about -- just based

on your common understanding as an economist -- a company's financial position throughout a Class Period?

A Well, okay.

So let me ask a clarifying question.

So, I mean, if we're talking about, let's say, Apple, all right. And we talked about their financial position, I would look at, you know, their market -- not their market structure, sorry, their capital structure.

If you're talking about a trading firm and you're talking about -- we certainly -- we could look at a --

Q I'm talking about FXCM.

A Can I -- I'm trying to answer the question to the best of my ability.

You have asked a vague question.

MR. HAKLAY: Please continue.

THE WITNESS: So when you say "financial position," do you mean as in the holdings of the company, which oftentimes when you're talking about an investment firm is referred to as a financial position?

Or are you referring to the firm's financials, as in the SEC filings?

BY MR. ISAJIW:

Q I think I'm referring to both collectively. But what I'm asking you is, do you have a general understanding of the term "a firm's financial position"?

MR. HAKLAY: Objection. Asked and answered.

MR. ISAJIW: Well, it was asked.

MR. HAKLAY: It was answered.

THE WITNESS: Like I --

MR. HAKLAY: He told you there's more than one -- one possibility. That's an answer.

Go ahead, sir.

THE WITNESS: Like I said, it varies from firm to firm.

BY MR. ISAJIW:

Q Okay.

Looking at Exhibit 8a, this is (as read and/or reflected:)

FXCM Common Stock Regression Results, Estimation Period: March 15, 2012, through February 1, 2013.

Can you just explain to me what this exhibit demonstrates at a very high level.

A Yeah. It's a market model with the results of my regression.

Q Okay.

So what does R squared, for instance, mean?

A I'm not sure -- can I give you a formal definition?

Q Informal is fine. You asked me a question.

A No. No. Sorry. I was talking out to -- I was speaking out to myself. I apologize. It seemed as if it was a question to you.

It just -- in some sense, it just explains how -- how much of the model is described -- how much of the data is described by the model.

Q Okay.

And what about adjusted R squared?

A That's typically -- it would be the same answer, but it's adjusted for the number of variables included in the model.

Q Standard error.

A Would just be, I don't know, if you want to think of it as a variance of the model.

Q Okay.

Jumping down below, we have coefficients. Intercept coefficient.

What does that indicate?

A It's the coefficient on the intercept.
Q Market index.
A The term "market index" or "coefficient on the market index"?
Q Coefficient on the index demonstrates what?
A It's the coefficient on the market index. Let me -- I'll give you a more formal definition.
It is a measure of the relationship between how the market moves on a daily basis and how the common stock moves on a daily basis, if we're just talking about this particular regression analysis.
Q I am.
And what about peer index?
A Similar to the answer I just gave you, but it's with regards to peers as opposed to the market.
Q Those two index, which measure against the market and the peer, they can change over time; is that correct?
A That is -- when you say "they can change over time," you mean their components can change over time?
Q I mean the coefficients, the calculation.
A So that's -- okay. So now you're asking can the coefficients change over time?
Certainly.

Q Okay.

And in connection with your analysis, they did change substantially between the different periods that you looked at; is that correct?

A They changed over the different periods I looked at.

Q So, for instance, the one that we're looking at now on page 165, we have a market index of 0.691.

A Yep.

Q And a peer index of 0.357?

A Uh-huh.

Q And a standard error of 2.05?

A Correct.

Q Okay.

And if you turn to 8d, which is 168.

A All right.

What are we looking at again? I'm sorry. Can you read back the question. I need to write these down.

Q I'll try to do this as easy as possible.

A I want to look at them side by side.

Q That's fine. Look at page 165.

A Yeah.

Q Okay.

Grab page 166 in your right hand, flip it over and you will see 8d, 168; right?

A Yeah. I want to be able to look at the numbers together --

Q I got you.

A -- to compare them.

Do you want to give me one of those? I'm happy to look. Just give me two.

MR. HAKLAY: Why don't you look at 165 here and he can show you 168, and then you'll have them next to each other.

THE WITNESS: There you go.

BY MR. ISAJIW:

Q So for 8a, the market index is 0.691; correct?

A That's what it says, yes, correct.

Q And then 8d, the market index is 0.023?

A Correct.

Q Okay.

Would you characterize that as a change over time?

A It's certainly different.

Q Okay.

And is it a substantial change over time?

A My guess is if I ran some statistical

analyses, there would be a statistically significant difference between those two coefficients.

Q And then the peer index on 0.357 on 8a. And if you look at 8d, which is for the period of February 6, 2015, through February 5, 2016, we have 0.579.

A Correct.

Q Okay. Again, would you characterize that as a substantial change over time?

A It's certainly different. I don't -- I -- I'm not sure if it would be statistically significantly different.

Q And then the standard error in 8a is 2.05. And the standard error in 8d for this other period is 6.59.

Do you see that?

A I do.

Q Okay.

Again, would you agree they are substantially different?

A Again, I will -- I agree that they are different.

Q How would you -- you have no characterization for the extent to which they are different?

A They're different. I mean, if I were to -- if someone were to ask me to perform statistical tests, I could determine whether or not they were statistically significantly different.

And I guess when -- if there's some formal definition of substantial, I mean, we talk about significant in economics and then we talk about statistically significant. So that has a standard meaning.

Substantial, if you're measuring it by differences in coefficients, I don't -- I'm not quite sure how to -- how to answer in economic terms.

Q Would you say it's a de minimis difference between the two?

A I haven't even thought about that.

Q An insignificant difference between the two?

A Is it insignificant?

Again, so now you're using formal definitions. I would need to form -- I would need to perform a statistical test to determine whether or not it's insignificant or significant.

Q What do those differences represent in terms -- just looking at the market index, what does

the difference represent? The market index you described is a relationship between -- I'm sorry. Can -- you can look back.

How did you describe the market index and what that means?

A You mean the coefficient on the market index?

Q Yes.

A It's how the underlying stock responds, on average, to changes in the market index.

Q Okay.

And so the 0.691, as compared to 0.023, how would you -- what would drive that difference?

A What would drive the difference?

Q What would the difference in the coefficients indicate in terms of the measurement that you're trying to achieve here?

A That during that one-year period in Exhibit A, a 1 percent increase in the market would result in a 0.691 percent increase in the underlying stock. A 1 percent -- in the second example, a 1 percent increase in the market would result in a 0.023 percent change in the stock.

Q Okay.

And the same question for the peer index.

A I'm sorry.

THE WITNESS: Can you repeat the question, please.

(The record was read back as follows:

"Question: What would the difference in the coefficients indicate in terms of the measurement that you're trying to achieve here?")

BY MR. ISAJIW:

Q I'm trying to get the same explanation for the peer index.

A So here it looks like a 1 percent -- and this is Exhibit 8a -- a 1 percent change in the peer index would result in a 0.357 percent increase in the underlying stock.

And the -- and in the other, this is Exhibit 8d, a 1 percent increase in the peer index would result in a 0.579 percent increase in the underlying stock.

Now, I'm just talking about positives. Obviously, it could also be negative.

MR. HAKLAY: Finish your subject. We're getting close to an hour. I'm not suggesting we

break right now, but close.

MR. ISAJIW: You know what, this is as good a time as any to take a break.

MR. HAKLAY: Okay.

THE VIDEOGRAPHER: We are going off the record.

The time is 1:34 p.m.

(Recess was taken at 1:34 p.m.

until 1:47 p.m.)

THE VIDEOGRAPHER: We are back on the record.

The time is 1:47 p.m.

BY MR. ISAJIW:

Q Just before we broke, we were discussing your regression analysis for the common stock and the five regression estimate periods you used in connection with that analysis.

Correct?

A Correct.

Q Okay.

Did you use any regression estimation periods in connection with your analysis of the bond in this case?

A Did I use any -- I'm sorry. Can you repeat the question?

Q Let me ask it, hopefully, better.

You broke your analysis for the common stock into five sub periods; correct? Paragraph 76 of your report.

A That is correct.

Q Did you break your analysis of the bond into any sub periods in connection with your analysis?

A No. The estimation period I used on the bonds or the notes was June 24th, 2014, through August 16, 2016.

Q Why didn't you subdivide that into sub periods?

A It was after the -- well, hold on. Before I answer that.

That's a good question. I certainly could have. I don't think it would change my results at all.

Q Was it a conscious decision not to?

A No.

Q Okay.

Focus on paragraph 77 of your report, page 29.

Do you have paragraph 77?

A Yeah.

Q Great.

In this paragraph you described using (as read and/or reflected:)

(Dummy) variables to control for potential abnormal returns on news events for which the company filed a form 8-K with the SEC.

Can you explain to me at a high level what -- why you used dummy variables and what you were trying to achieve there.

A Well, so if you -- really at least with regards to these specific dummy variables, this goes to my news/no-news test.

So -- so to the extent that I define -- and I'm looking at starting at paragraph 96 (as read and/or reflected):

I conducted an empirical test to compare the stock price reactions on a sample of "news days" to all other "non-news days."

If the underlying assumption is that those days are news days, I typically want to don't use -- I mean, I would want to adjust for them somehow.

That having been said, if I exclude the dummy variables, it doesn't change my results.

Q So what is the use of the dummy variable designed to achieve?

A What is it designed to achieve?

It's designed -- I don't quite understand the question.

It's -- yeah. I don't -- I'm sorry. I don't understand the question.

Q You are focusing, in this analysis, on what you term as "news days"; is that correct?

A Now, we're looking, again, at that paragraph I was just citing? What are you -- are we talking about the news/no-news analysis, or are we talking about the event study?

Q So I'm talking about the use of dummy variables.

Let's back up.

Your use of dummy variables to control for potentially abnormal returns on news events for which the company filed a form 8-K with the SEC, was that in connection with the event study or the news/no-news analysis?

A Well, because I did a news/no-news analysis on days on which Company filed a form 8-K with the SEC, that, I, then, included those dummy variables in the market models I used.

Q Okay. So I'm trying to understand the process.

You didn't include all 8-K days in your news/no-news analysis, or did you?

A I didn't include all 8-K days.

I believe I used all 8-K days during the Class Period.

Q For some of the 8-K days, did you use a dummy variable?

A Oh, for each of the 8-K days, I used a dummy variable.

Q Okay.

A Because under my news/no-news test, I am trying to come up with an objective definition of news.

And so I define "news" as 8-K days. To the extent that the underlying assumption is, is that the stock price would move on those news days, I would usually want to remove that abnormal movement out of my market models.

So it's something I commonly do.

Q So is it fair to say you're trying to estimate the volatility of the stock to benchmark whether the price movement is normal or abnormal?

A I'm sorry.

THE WITNESS: Can you read back that question, please.

(The record was read back as follows:

"Question: So is it fair to say you're trying to estimate the volatility of the stock to benchmark whether the price movement is normal or abnormal?")

THE WITNESS: I don't understand that statement.

BY MR. ISAJIW:

Q Do you know how many -- just focusing on the common stock, do you know how many days you dummy out of your regression analysis for FXCM common stock?

A 107 days. And I'm looking -- I'm now reading from paragraph 97 of my report.

Q Out of approximately 1,230 days?

A Well, let's go to -- 1,231 days, yes.

Q Okay.

A Sorry. I'm reading from paragraph 104 there.

Q So that's roughly, what, 8 percent or so?

A That sounds right.

Q And for the bond, do you know how many days you dummy out?

A Ten.

Q Okay.

And that's out of how many? Sixty-six, I think?

A I believe that is correct, yes.

Q So that's roughly 15 or so percent?

A Sure.

Q Okay.

In your view, when conducting these analysis, is there a threshold of days that would be too high to dummy out and still have a reliable analysis?

A Well, so this is the way I would put this.

I have seen courts reject models by economists when they've dummied out, I don't know, maybe 50 percent of the days. I don't remember the case.

But it is the -- in this case, it is -- intellectually, it is the proper thing to do.

That having been said, if I exclude those dummy variables except for those dummy variables after -- immediately after the break or the stock flash trash, my results do not change at all.

(Reporter clarification.)

BY MR. ISAJIW:

Q Okay.

Are you aware of any academic peer-reviewed literature supporting the use of dummy variables in connection with this type of analysis?

A Using dummy variables with an event study? Sure.

But I can't give you -- I mean, I've seen hundreds of articles use dummy variables in performing event studies. I can't name them off the top of my head.

Q Do you cite any in your report?

A You know, I don't remember if -- where are we looking?

I don't remember -- I'm happy if you have them. So it's possible that "The 'Less Than' Efficient Capital Markets Hypothesis," in Footnote 129 might have contained that, as well as Footnote 131.

Here's another paper. "Use and Misuse of Event Studies to Examine Market Efficiency," which is a NERA working paper.

"The Curious Incident of the Dog That Didn't Bark and Establishing Cause-and-Effect in

Class Action Securities Litigation."

I don't -- again, without having those papers in front of me, I don't remember if they specifically used dummy variables.

But, like I said, I've seen it used numerous times. I've used it hundreds of times, both in my role as an expert here, and then, you know, when I used to work at places like Cornerstone.

So it is a common practice.

That having been said, if I exclude those dummy variables, save for the days in which immediate -- that immediately followed the flash crash, it does not alter my regression results at all or my findings at all.

Q Okay.

A Forget the regression results.

Q Again, I'm just looking for the best answers to my questions here. And when I asked if you were aware of any academic peer-reviewed literature supporting the use of dummy variables in connection with this type of analysis, you looked and read a number of the articles in the footnotes of your paper.

Are you telling me specifically that these

articles support the use of dummy variables within events -- these are academic peer-reviewed literature supporting the use of dummy variables in connection with this type of analysis?

A As I sit here, again, I don't recall.

Q Okay.

A If you would like to place the articles in front of me, I'll be happy to look at them.

It is certainly possible that they -- as I stated before, that they used dummy variables in their analysis.

I guess there is an implicit assumption that if they used dummy variables to conduct their analysis that they are suggesting that they are in support of that type of analysis.

Q Okay.

You also mention that courts criticize the use of dummy variables at, I think you said, 50 percent or more.

A I can think of one case. I don't recall the case. I don't recall what happened. I don't recall -- I don't remember any details. So, yes, there's at least one case I can think of.

I can also think of thousands of cases in which courts have accepted dummy variables in this

type of analysis.

So, yes, there's one example I can think of where they did not accept it and found a flaw with it. There are thousands -- probably not thousands; that might be an exaggeration -- hundreds where they have been accepted and used.

Q In your view as an economist and an expert witness conducting market efficiency analysis, is there a threshold by percentage that is too high to use for dummy variables in order to get reliable results?

A That's not something I've ever thought about.

Q Okay.

Would you -- you mentioned 50 percent before and I recognize that that wasn't from a specific recollection of a specific case, but could you, sitting here today, believe that 50 percent would be too high?

A I have no idea, as I sit here today. I don't know what happened to that case.

I mean, it's complete speculation on my part.

Q Independent of that case, have you ever given any consideration about what level of dummy

variables would be too high to get reliable results in connection with this type of an analysis?

A What level of dummy variables?

I --

THE WITNESS: Could you reread the question, please.

(The record was read back as follows:

"Question: Independent of that case, have you ever given any consideration about what level of dummy variables would be too high to get reliable results in connection with this type of an analysis?")

THE WITNESS: I have never thought about levels. I -- and this analysis and all analysis I attempt to do, I try to do the intellectually honest thing.

That having been said, my results are robust to the inclusion or exclusion of the majority of those dummy variables, specifically the exclusion of all of those 8-K dummy variables.

BY MR. ISAJIW:

Q Switching gears to your news/no-news

analysis, which I think you describe in and around paragraph 49 on page 18.

A Paragraph 49.

Okay.

Q So in paragraph 49, you write (as read and/or reflected:)

> To determine whether the requisite cause and effect relationship existed, I performed a collective test of the efficiency of the market for FXCM's stock on a broad set of FXCM news events that occurred over the course of the Class Period.

Did I read that correctly?

A That is correct.

Q And the cause-and-effect relationship that you were testing to see whether it existed, that related to Cammer Factor 5, the price impact of new information?

A I believe that's correct.

Q For this -- the paragraph goes on to state (as read and/or reflected:)

> For the second empirical test, I examined whether the proportion

of statistically significant abnormal returns exhibited by FXCM common stock on the news dates was significantly different than the proportion of statistically abnormal returns on other dates -- I'm sorry -- on all other dates. This test is often referred to as a "news no-news test." What does this test entail mechanically?

A So running the market models. Typically, you -- again, you would use dummy variables on -- in your market models on those days that you have defined as news.

Well, so I guess the first thing you need to do is define what a news day is.

So, you know what, let's just go to paragraph 97 because that will give you a better explanation.

(As read and/or reflected:)

First, one must define what constitutes a "news" day. It is important to use a specific and objective criteria to identify news events that contain a higher flow

of information.

For purposes of these tests, I identify news days as unique days on which the Company filed an 8-K.

Q Did you write that paragraph?

A Yes.

Q Yourself, from scratch?

A From scratch?

Q Uh-huh.

A Certainly at some point I have.

Q In connection with this report?

A I believe so.

Q The very first time you wrote that paragraph was for this report?

MR. HAKLAY: Objection. Misstates.

THE WITNESS: That's -- that's not what I said.

BY MR. ISAJIW:

Q I was asking if you wrote it from scratch in connection with this report, and I think you said "I believe so." So I was asking for clarity.

MR. HAKLAY: That's a mistake.

BY MR. ISAJIW:

Q Let's withdraw those questions.

A What I stated was is that I believe at some

point in time I have written that -- that sentence.

Q Okay.

A Because this is typically how I would do a news/no-news analysis.

Q Okay.

A Now, did I go ahead and specifically type out this sentence separately as opposed to use -- taking it from another report? I don't recall.

Q Okay.

Is it a fair summary of the news/no-news test that you determined that there were news days where FXCM issued 8-Ks and no-news days where there were no 8-Ks, as -- that's the collection of information you were looking at?

A Maybe I'm missing something.

THE WITNESS: Could you reread the question, please.

(The record was read back as follows:

"Question: Is it a fair summary of the news/no-news test that you determined that there were news days where FXCM issued 8-Ks and no-news days where there were no 8-Ks, as -- that's the

collection of information you were looking at?")

THE WITNESS: I don't believe that that statement is necessarily correct.

I refer you to paragraph 97 in my report as to what exactly I did.

BY MR. ISAJIW:

Q What do you believe is not correct about that statement that I made?

A Well, I'm not sure how you are necessarily defining news. And my guess is you mean news as in all-company news.

And so I'm not sure -- I don't know what definition of news you're using.

So to be specific -- as specific as possible, I would like to rely on paragraph 97 to accurately reflect my opinion in this matter.

Q So I was saying news days were days where FXCM issued 8-Ks.

Is that different than the definition you're using in paragraph 97?

A That has -- that is how, in this test, I have defined news days.

Q And I also said that no-news days were where there were no 8-Ks.

Is that different than how you defined it in paragraph 97?

A That is the underlying assumption in this model.

Q Okay.

A But that having been said, it's possible that there are news days that aren't captured under this definition. I am using this specific definition as a news day.

Q Okay.

So if it counts as a news day for the purpose of your news/no-news analysis, it had to be an 8-K day?

A That is correct.

Q Okay.

Do you know of any peer-reviewed academic studies supporting the use of the news/no-news test, as you've set it forth here?

A Well, so I suppose -- I'm not sure that there -- it's something that academicians would normally look at.

That having been said, it is certainly -- when we talk about a news/no-news analysis, hold on. One second.

Certainly the less and efficient capital

market hypothesis. This is the paper. Excuse me. In paragraph 127. I believe they do it -- hold on.

And where am I? Paragraph 130. Maybe -- this may not be considered academic, but another way, and I'm quoting from paragraph 101 (as read and/or reflected:)

> Another way to perform an event study is to provide the days of the Class Period ex ante into expected news days and non-news days before examining price movements, and then compare the stock's price movements in the two categories to see if there's a statistically significant difference in price movement between the two categories.
>
> If the study finds a difference in price movement between the two sample sets (e.g., earnings-release dates versus non-earnings-release dates), that is statistical evidence that the market incorporates new public information into the price of the

stock.

And that is quoting from the (as read and/or reflected:)

Brief of Testifying Economists as Amici Curiae -- I'm sure I botched that -- in Support of Respondent, Haliburton, Incorporated, and David Lesar v., Erica P. John Fund, Incorporated, FKA Archdiocese of Milwaukee Supporting Fund, February 5th, 2014, page 10.

So I don't know if that brief by all those economists would be considered an academic article or not, but they're certainly in favor of it.

Q As an academic, you don't know if a brief filed in connection with a court proceeding would be considered a peer-reviewed academic study?

A Well, I mean, it's -- it's presumably been read by other peers.

So I -- it has not appeared -- to my knowledge or to the best of my knowledge, it has not appeared in a journal, but it certainly suggests that the economists support that.

If you specifically want peer reviewed, as

normally defined in academia, at least off the top of my head, I believe the article I noted in paragraph 129 suggests this as a use.

MR. HAKLAY: You mean Footnote 129?

THE WITNESS: I'm sorry. Yes. Footnote 129.

But, again, that's going off the top of my head. I'm happy to look through the article if you have it.

BY MR. ISAJIW:

Q Okay.

Have you used this news/no-news test when evaluating market efficiency in prior engagements?

A You mean prior to issuing this report?

Q Yes.

A Yes.

Q Okay.

Roughly how many times?

Maybe it's an easier question to ask. In what proportion of cases involving market efficiency have you used this test? Most of them? Half of them?

A Probably more than 20. I don't remember exactly.

Q Twenty reports as opposed to 20 percent of

your reports?

A Yes.

Q Okay.

A But that's, again, that's complete speculation on my part. I've used it what I would consider to be numerous times.

Q In connection with this test, what would you conclude if a security did not have a significantly higher proportion of significant returns on news days than it did on no-news days?

A That's an interesting question.

I would have to think about it. Do you mean with regards to market efficiency?

Q Yes.

A It would -- obviously, it would depend on the case because in determining market efficiency, I'm looking at all eight factors.

Q Would that kind of finding be inconsistent with the conclusion of market efficiency?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: Would it be inconsistent with the definition of market efficiency?

BY MR. ISAJIW:

Q With the conclusion of market efficiency.

A Well, I mean, I can think of all sorts of examples where you could get the wrong answer. Like you identify, you know, you come up with a bad definition of news days.

You know, maybe I decided that a news day would be a Monday and so I dummied out all Mondays, you know, that would give me a spurious result presumably.

So it's not -- it's not something I've given a lot of thought to, but I can certainly think of situations where, you know, if the test is misspecified, you're going to get bad results.

And so that -- it may -- yeah. Well, that's it. I'll leave it at that.

Q Barring testing errors, if a security did not have a significantly higher proportion of significant returns on news days than it did on no-news days, would that be inconsistent with the conclusion of market efficiency?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: It would depend on the case.

So beyond testing errors, I mean, the definition of a news day is something that's integral to this process. And so you need to be

specific about how you define a news day.

So that wouldn't be a testing error. And so -- I mean, there's all sorts of things. It's -- there's all sorts of things that go into this.

And so if you would like to be more specific about your example, certainly I would take under consideration that additional information, but just on its face alone, not necessarily.

BY MR. ISAJIW:

Q So in a hypothetical where you do a news/no-news test, you define news days as days with 8-Ks; you define no-news days as days without 8-Ks; you run the analysis; and you conclude that the security did not have a significantly higher proportion of significant returns on the news days than it did the no-news days, would that be inconsistent with the conclusion that the security traded in an efficient market?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: Yeah. I refer to my previous answers. I don't have anything more I can say on this topic.

BY MR. ISAJIW:

Q The only thing I was trying to add was in

your previous issue I believe you said if there was an issue about defining news days. I was trying to ask a new question defining news days as 8-K days.

A Ah. Okay. Yeah, I refer to my previous answer.

Q I want to flip for a minute to the Unger/Krogman factors in connection with the FXCM common stock.

And this is your analysis on paragraphs 108 to 111.

A 108 to 111. Okay.

Q And that's paragraphs -- looks like page 42.

MR. HAKLAY: I think it's more than -- you can ask him about those. I think that analysis goes beyond 111.

MR. ISAJIW: I apologize. It begins on page 42. Give me one second.

Just give me a second. I have a pretty targeted question. I'm just trying to find it.

THE WITNESS: Okay.

BY MR. ISAJIW:

Q In paragraph 117, on page 44 --

A 117. Okay.

Q -- you've discussed the bid-ask spread.

And the bid-ask spread is one of the, to your understanding, that's one of the Unger/Krogman requirements -- sorry, factors; correct?

A Correct.

Q And you state that (as read and/or reflected:)

> The average bid-ask spread for FXCM's common stock during the Class Period was 0.28 percent.

Why is it important, in your view, to study the bid-ask spread?

A Well, it's what the court requires. That's what the court asks for. So I presented it.

Q So a number of times you have said that's what the court asked for. You haven't been retained by the court in this matter; right?

A No. But I have presented -- I have been retained to present evidence that the court will consider. And so to the extent that, in forming an opinion about market efficiency, this is one of the factors a court typically undertakes or looks at, I've included it in my report.

Q Okay.

And you've been asked by the plaintiffs' counsel to be an expert to submit a report that the

court will consider in connection with a determination as to whether or not these securities traded in an efficient market; is that correct?

A That sounds right.

Q Okay.

So as an expert economist, why as an economist would you -- analyzing the bid-ask spread be important in your determination as to whether or not a market is efficient for FXCM's common stock?

A Well, so as an economist, I'm not sure I would -- undertaking an academic exercise, I'm not sure I would normally look at whether or not FXCM traded in an efficient market.

To the extent that this is something that is commonly relied upon by courts and their determination of market efficiency, I have included this analysis.

Q Okay.

In your determination as an economist, do you have a belief that a narrow bid-ask spread is -- tends to support the concept that a security traded in an efficient market?

A Tends to?

I believe it -- some economists -- well, let's see. I'm pretty sure -- right. So -- and

this is paragraph 7 of my appendix.

MR. HAKLAY: What page are you on, sir?

THE WITNESS: Page 62.

MR. HAKLAY: Thank you.

THE WITNESS: So (as read and/or reflected:)

A narrow bid-ask spread of a particular security is also often associated with efficiency. In academia, a stock's bid-ask spread is frequently used as a measure of liquidity or cost of trading.

(Reporter clarification.)

THE WITNESS: So that's my understanding of bid-ask spread in academia and why it's sometimes looked at.

I don't know of a specific paper in academia -- well, let me correct that.

There might be papers that talk about market efficiency and bid-ask spread.

But I personally have presented it here based upon my assignment and what my understanding of what courts like to look at in their determination of market efficiency.

///

BY MR. ISAJIW:

Q Independent of -- if a court did not have an opinion that looked at bid-ask spread, would you view it as an important thing to evaluate in connection with your analysis as to whether or not FXCM securities traded in an efficient market?

A So if I was performing an academic study where I was trying to determine whether an individual stock traded in an efficient market, that's not anything I've ever seen.

But given your hypothetical, which, again, I have never seen that I recall anyway in academia, it may be a factor that I would take into consideration, but it's an incomplete hypothetical and not something that most academicians would ever consider or take into consideration.

Not the bid-ask spread. I'm saying most academicians would not perform an event study for a single stock.

Q Just in this same section on Unger/Krogman, you discuss two additional factors, market capitalization and float?

A I'm sorry. I closed this. What page are we looking at?

Q 42 and 43.

A 42 and 43.

Q For market capitalization as an economist conducting this analysis, do you have an independent view as to whether or not market capitalization is relevant to a determination of trading in an efficient market?

A Again, I don't think economists -- academicians look at a single company and try to determine whether or not a single stock trades in an efficient market.

Now, that having been said, let me take a look at my appendix here.

Q I'm not asking for support from others. I'm just asking for your view today.

A Right.

Well, and so I'm refreshing my memory of what other economists have said and that will, then, help refresh my memory as to how I -- what my position on such things are.

Yeah. So -- yeah. So Fama -- right. It says (as read and/or reflected:)

> Similarly, financial economists have considered the market value -- I'm reading from paragraph 6 of my appendix -- and

its relationship with market efficiency. Larger companies tend to attract more analysts and news media coverage and gain the attention of a greater number of investors.

MR. HAKLAY: Slow down.

THE WITNESS: Oh, sorry. A little too much Coke.

MR. HAKLAY: Keep going.

THE WITNESS: (As read and/or reflected:) All of these characteristics, which accompany a large market capitalization, promote, and, therefore, tend to support, market efficiency.

So I agree with that statement.

BY MR. ISAJIW:

Q For float, again, I'm not asking what other economists believe. I'm asking what you, sitting here today as an economist, believe, does the size of the public float -- is the size of the public float relevant in your professional opinion to whether a security trades in an efficient market?

A Well, so -- okay.

So you talked about my professional opinion as an academician. I don't believe I've ever seen any academic articles that discuss float as a factor in market efficiency. And so that informs my opinion.

I mean, look at if no one ever looked at it before, I might say, well, okay, then I probably wouldn't look at it. Right. Seems reasonable.

So to the extent that I'm not sure I've seen it discussed anywhere, I don't -- I don't think float in and of itself is some kind of magic criterion.

But, again, the courts find it informative. That's what -- this is one of the factors that they consider in their analysis. And so I present it here in my report.

Q Okay.

Let's take a look at the note section of your report, starting on page 45. I just wanted to go through some of the Cammer factors with respect to the notes.

Before we start: Are you aware of any court ruling suggesting that there could be a presumption of efficiency for bonds based on the same analysis that you performed for the common

stock?

A I have no idea.

Q Okay.

In your professional opinion, do you believe it's appropriate to apply the same Cammer factors in an analysis of market efficiency to bonds as it is for common stock?

A Well, so let's go to my report, paragraph 119 (as read and/or reflected:)

> In assessing bond market efficiency, courts recognize that bond characteristics are distinct from common stock characteristics. And that cites to at least one securities case. (As read and/or reflected:)
>
> The indicia typically relied upon in assessing market efficiency for equity securities need to therefore be adjusted, when appropriate, for the bond market.
>
> Trading behavior --

Now in paragraph 120 (as read and/or reflected:)

> Trading behavior in the bond market can differ drastically from

the stock market. Because the bond market is comprised of large institutional investors, pension funds, and hedge funds that trade in much larger volumes per transaction than typical trades in the stock market, bonds also trade less frequently than typical stocks.

Though the trading frequency in the bond market is typically lower, participants in the bond market, being institutions, pension funds, and hedge funds, are nonetheless very well-informed traders.

Thus, even if the FXCM notes do not trade every day during the Class Period, this pattern is typical in the bond market, is not unique to FXCM notes and does not indicate an efficient market --

MR. HAKLAY: An inefficient market.

THE WITNESS: -- an inefficient market. Thank you very much.

BY MR. ISAJIW:

Q Okay. Thank you for that.

You just mentioned in your response, patterns that are typical for the bond market.

What, in your experience, would be the typical trading volume or turnover as a percentage of par for a corporate bond?

A I have no way to answer that.

Typical? I have no idea.

Q Okay.

Do you believe that a typical corporate bond would trade in any way that is different from a typical Rule 144A bond?

A Do I think a corporate bond would trade -- so what do you mean by "trade"?

Q What does the term "trading bonds" mean to you?

A Well, I'm trying -- I mean, bonds being sold back and forth.

Q Okay.

Do you believe a typical corporate bond would be sold back and forth at a higher or lower level than a typical Rule 144A bond?

A That's not something I ever thought about.

Q Do you believe that bonds generally trade

as frequently as stocks trade?

MR. HAKLAY: Objection. Vague.

You can answer.

THE WITNESS: I think bonds typically trade less -- normally, if I were to look at one corporation's equity and its bonds, normally the -- there would be more frequent trading in the equity than in the bond. I guess -- so if that's your definition of frequency, I guess that addresses that.

Q I believe in paragraph 120 where you just read, four lines down, there's a sentence that says (as read and/or reflected:)

> Though the trading frequency in the bond market is typically lower, participants in the bond market, being institutions, pension funds, and hedge funds, are nonetheless very well-informed traders.

Did I read that correctly?

A That is correct.

Q And when you say "typically lower," what are you comparing it to?

A The equity market.

Q Okay.

And what is the basis for your statement that participants in the bond market are nonetheless very well-informed traders?

A My understanding of the bond market.

Q Who are participants in the bond market, based on your understanding?

A Well, again, quoting from paragraph 120 (as read and/or reflected:)

Institutions, pension funds, and hedge funds.

Now, obviously that does not -- although those are typically informed traders, that obviously doesn't exclude individuals.

BY MR. ISAJIW:

Q Cammer Factor 1, I believe we discussed earlier today, focuses on the volume of trading in connection with the security; is that correct?

A Correct.

Q And generally, higher volume of trading, I think, would be associated with more likely efficient market than lower trading?

A I think courts have found that, what is it? Over 2 percent -- oh, let me go back to my other discussion in Cammer Factor 1.

Q So regardless of actual percentages, you state in paragraph 120, in the last sentence, that the lower trading frequency of FXCM notes (as read and/or reflected:)

Does not indicate an inefficient market.

Why not?

A Because bonds typically trade less frequently than equities.

Q Is there a threshold of trading below which you think would be an indication of an inefficient market?

A Hmm. That's not something I've thought about. And to the extent that this met the 2 percent threshold that's been specified previously by the Cammer court, that's not something I've really thought about.

Q In paragraph 125, you determine that the (as read and/or reflected:)

Trading volume as a percentage of par value of outstanding notes for the FXCM notes was 2.92 percent.

Is that correct?

A That is correct.

Q You go on to say (as read and/or reflected:)

This level of average weekly trading volume exceeded the Cammer benchmark of 2 percent necessary for a "strong presumption" of market efficiency for common stock securities.

(Reporter clarification.)

BY MR. ISAJIW:

Q Did I read that correct?

A You did.

Q Okay.

The 2.9 percent based on that sentence there was related to common stock; right?

A You mean the court's -- when the court was discussing Cammer, were they referring to equity? Yes.

Q Okay.

And they weren't -- the 2.92 percent threshold was not in connection with the notes; right, with the fixed income or debt security?

A Well, that was -- I don't understand the question.

The 2.92 percent was the average weekly

trading volume of the notes.

Q Okay.

So from your perspective, and you're doing the analysis, is the analysis equal?

Is 2.92 percent good enough for common stock; same should be true for notes? Or do you need to adjust the analysis in some way when you're dealing with notes?

A I'm sorry. I just don't understand the question.

It's -- the court has determined in Cammer that 2 percent is sufficient for equities. To the extent that I've stated here that bonds trade less frequently than equity, the fact that it meets that 2 percent threshold might indicate to the court, probably would be considered by the court in their determination as to whether or not these bonds traded in the efficient market.

That's the answer to the best of my ability. I'm not quite sure I understand the question.

Q So the trading period you used to analyze the notes was January 24th, 2014, to February 6th, 2017; correct?

A I'm sorry. Where are you looking?

Q I'm sorry. I said "January." I meant "June."

A Where are you looking?

Q This is the notes trading period. I'm not pointing to a particular part of your report.

It is a part of your report.

A Right. So yes.

(As read and/or reflected:)

The test described herein for the F- -- and I'm reading from paragraph 122 now -- for the FXCM notes were performed over the period during the Class Period when trading data was available, June 24th, 2014, through February 6th, 2017.

Q Would you concede that there was not an efficient market for the notes before they began trading on June 24, 2014?

A I don't know enough about the notes, sitting here, to opine on that.

Are you telling me that that's what happened?

Q I'm just asking the question.

The notes were issued before June 24th,

2014; correct?

A Let's see what he said.

Okay. Could you reask the question, please.

Q Would you concede that there was not an efficient market for the notes before they began trading on June 24th, 2014?

A That was not something that I was asked to look at.

Q Do you agree that before June 24th, 2014, the notes were issued?

A That's my -- well, I don't -- I believe that is true.

Q Okay.

Do you believe that -- strike that.

You were not asked to opine on the efficiency of the notes prior to June 24th, 2014?

A That is correct.

Q In connection with your notes analysis, you found an average weekly trading volume of 292 over the entire Notes Period.

Sorry. I said "292." I meant 2.92 percent.

A Correct.

Q Okay.

Did you calculate a median weekly trading volume over the same period?

A I did not.

Q Would it surprise you to know that the median weekly trading volume for the notes over that same percent was 0.54 percent?

MR. HAKLAY: Objection. Relevance.

THE WITNESS: Would it surprise me?

BY MR. ISAJIW:

Q Yeah.

A Well, I've never seen a court look at median statistics when looking at this -- doing this type of analysis.

Would it surprise me? I guess that's the actual question. I don't know. It's not something I really ever thought about.

Q Okay.

A As I said, look, bonds are different than stocks. They trade less frequently.

Q In your analysis, would the significantly lower median trading of the notes during the time period be relevant to whether or not they traded in an efficient market throughout that entire time period?

A Not necessarily.

Q Would it be irrelevant?

A Would it be irrelevant?

Well, I mean, to the extent that any information has value, I suppose it, by definition, would be relevant. So I -- or would not be irrelevant. That's a double-negative.

So I don't know. It's a philosophical matter. I would need to think about that more.

Q Do you have any idea why the weekly trading volume, as you calculated it, and the mean trading volume would be so different?

MR. HAKLAY: You mean "median"? I thought you said "mean." That's why.

MR. ISAJIW: Apparently, I did say "mean" and I meant "median."

MR. HAKLAY: It's otherwise the same.

THE WITNESS: You're asking me why the mean and median are different?

BY MR. ISAJIW:

Q Yeah.

A Again, bonds tend to trade less frequently than equities, so it wouldn't surprise me that the mean and median are different.

Q If you look at Exhibit 3b on page 101 of your report.

A Exhibit 3b, did you say?
Q I did.
A Okay.
Q I'm sorry. I said "page 101" and I meant page 100.
A Ah, okay. Yep.
Q Is one explanation for the difference between the average weekly and the median trading volume the fact that there were small number of a high-volume weeks at the beginning of the trading period for the bond as composed to the rest of the period?
A I'm sorry. High volume during the beginning of the trading period?
Q Yes.
A I'm not quite sure I would agree with that characterization. But, I mean, I agree that there's a difference between -- I would expect that there's a difference between the median and the mean.
Q So of --
A I have presented what the court's asked me -- or usually asked experts to present. So that's what I did.
Q Okay.
And other than the fact that the courts

usually ask experts to present on this information, you have no independent view of the information's meaningfulness?

A Hmm. Interesting question.

THE WITNESS: Could you repeat the question, please.

(The record was read back as follows:

"Question: And other than the fact that the courts usually ask experts to present on this information, you have no independent view of the information's meaningfulness?")

THE WITNESS: I was asked to opine upon market efficiency for FXCM and their equities and notes.

Beyond my -- beyond my job in this case, I'm not sure that's -- your questions are things that I've thought about.

BY MR. ISAJIW:

Q Okay.

Would it be relevant in your analysis if the notes had, during the entire period, only 35 weeks with volume over 2 percent, but 103 weeks

with volume under 2 percent?

A Would it be relevant to my analysis?

Well, again, to the extent that courts look at average trading volume, no, that would not be relevant to my analysis.

Q Did you analyze the notes trading on a quarterly basis?

A Did I analyze the notes traded on a quarterly basis?

I'm not sure how to answer that question. I looked at average weekly trading volume. I don't -- I mean, I suppose I could somehow aggregate these things into quarters.

Q Okay.

And you looked at average weekly trading volume because that is what you understand courts to look at as a relevant factor?

A That -- under Cammer, that is correct.

Q If a security had an average weekly trading volume of 0.5 percent over several quarters within a period, would you view that as consistent with an efficient market in connection with Cammer Factor 1?

A It certainly could be, but it wouldn't -- yeah, it certainly could be.

Q Is there any situation where it would not

be?

A So it would not be what?

Q Consistent with an efficient market in connection with Cammer Factor 1.

A Is there a case where it would not be consistent with -- is there a double-negative in there? I don't know why I'm tripping over this.

Could you just restate the question and I'll try to answer it.

Q In your expert -- in your analysis, if you looked at a security whose average weekly trading volume was 0.05 percent over several quarters of a Class Period, would you perceive that to be an indication of it being in an inefficient market pursuant to Cammer Factor 1?

MR. HAKLAY: Objection. Asked and answered.

Go ahead.

THE WITNESS: It would depend on the security.

Certainly -- I mean, look, if I present -- I don't remember. Did you say "average"?

I'm pretty sure a court would -- well, I'm not going to speculate what a court would do.

///

BY MR. ISAJIW:

Q I'm not asking for a court's opinion. I'm asking for yours.

A Yeah. And so it would depend upon the type of security.

Q If the security was a Rule 144A note.

A And so what happened with the Rule 144A notes? The average -- was it the average trading volume you were talking about?

Q If it had an average weekly trading volume of 0.5 percent over several quarters within a Class Period, would that be consistent with market efficiency pursuant to Cammer Factor 1?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: I don't -- I mean, pursuant to Cammer Factor 1?

Cammer Factor 1 gives you a specific benchmark at least for equities.

We -- I think we've read paragraph 120 numerous times. Bonds are a different animal. So I don't know how to answer your question because Cammer Factor 1, at least the Cammer court gave us some thresholds. So I don't know how to answer your question.

BY MR. ISAJIW:

Q What were those thresholds?

A 2 percent and 1 percent.

Q And 0.5 percent in my hypothetical is below those thresholds; correct?

A In your hypothetical?

Q Yeah.

A Yes. But it's not -- again, the Cammer court was not ruling on bonds. This was an analysis of equities.

Q Okay. Thank you.

Let's move to Cammer Factor 2.

MR. HAKLAY: Let's take a -- it's been an hour. Let's take a break. The witness has indicated to me he would like to take a break.

MR. ISAJIW: When did he indicate that?

MR. HAKLAY: About ten minutes ago. I told him it was ten more minutes until the hour goes by.

MR. ISAJIW: I apologize.

THE WITNESS: He is right. I did.

MR. HAKLAY: He's doing his watch thing and I'm, like, ten more minutes.

MR. ISAJIW: He did not indicate to me.

MR. HAKLAY: No. No. No. He looked at me and I slapped him down.

MR. ISAJIW: All right. We can go off.

THE VIDEOGRAPHER: We're going off the record.

The time is 2:46 p.m.

(Recess was taken at 2:46 p.m. until 2:59 p.m.)

THE VIDEOGRAPHER: We are back on the record.

The time is 2:59 p.m.

BY MR. ISAJIW:

Q So, Dr. Werner, I want to focus on Cammer Factor 2 in relation to the notes, which is an analysis that begins on page 47.

Are you there?

A I am. Oh, sorry, yes.

Q Here is an example where you take a slightly different approach for the notes than you do with the stock in connection with analyst reports where you look at, quote, other avenues of information dissemination.

A I'm sorry. Where are you looking at?

Oh, because it -- oh, I see where you're reading.

Go ahead.

Q Why did you do that?

A I'm not sure -- I mean -- while that is the statement, I'm not sure that that's an accurate statement. So let's go back to my discussion of equities.

Yeah, that's poorly worded on my part.

Q So you did not look at other avenues of information dissemination?

A I looked at analysts following FXCM. So I did that for equities.

I looked at their conference calls in both cases.

What -- I'm sorry. Just let me finish here.

And I looked at news articles. Maybe -- I mean, I believe I -- again, I think I was just inartful in stating that.

Q Okay.

A Oh, wait. I'm sorry. It's been a long day.

Q Did you -- let's just go back to your analyst report.

Do you remember how many analyst reports were issued over the full Class Period? It's paragraph 27 of your report. That's the number.

A I'm sorry. Paragraph 27?

Okay. Now, I understand why I say a different approach or additional analyses.

So -- right. During the Class Period, 1,608 stories -- this was for the equity Class Period.

Q Uh-huh.

So in paragraph 27, the last sentence, you say that (as read and/or reflected:)

> These firms and analysts released at least 263 reports and recommendations during the Class Period.

A That is correct.

Q And then in paragraph 126 --

A Let me just write down that number. Are you going to refer back to that number?

Q I am.

A Okay. So where was that? 263. Okay.

Q And in paragraph 126 on page 47 -- actually, part of 126 that bleeds over to 48. You say (as read and/or reflected:)

> These firms and analysts released at least 89 reports and recommendations during the Notes Period.

Do you see that?

A I do.

Q So that's a significantly fewer number of reports; 263 versus 89?

A Well, I would agree it's fewer. We're looking at different periods of time.

So by definition, yes, 89 is less than 263.

Q Okay.

And for the notes, you found that 12 analysts followed FXCM during the Note Period?

A That is what is stated in our paragraph 120, yeah.

Q And how did you conduct that analysis to figure out the 12? Did you actually just add them all up yourself, or did somebody provide you with that information?

A Did I add them all up myself?

I believe that information was provided to me.

Q Okay.

And of the analysts that covered the company in this period, in paragraph 127, you indicate that three did not issue reports; is that right?

A Well, I believe that, yes, that is the gist

of what I was saying in that paragraph.

Q In connection with a Cammer Factor 2 analysis of analyst coverage, does the fact that an analyst doesn't issue a report weigh in favor of finding market -- an efficient market or against?

A I don't think that's something I've ever seen discussed in discussions of Cammer Factor 2.

Q Regardless of whether or not you've seen it discussed, do you have an opinion, sitting here today?

A No.

Q Of all the analyst reports that you considered in connection with your review, were any of them specifically covering the FXCM notes?

A I remember seeing a couple.

Q Do you remember which ones?

A I do not as I sit here today.

Q And how many is a couple?

A I don't recall.

But, again -- I mean, it's not clear to me why the information -- the information would still be firm relevance, so -- but, again, I don't remember. We'll leave it at that.

Q When you say "a couple," do you mean five? Ten? A hundred?

A Where was that?

Q We determined that there were 89 reports and recommendations.

A Right. So that's the number I was looking for. So, yeah, it would definitely be less than a hundred.

Q Okay.

A But I don't remember.

Q Would it be 89?

A No.

Q Okay.

Would it be 40?

A I don't -- I -- again, a couple.

Q Okay.

A So less than five.

Q Okay.

A Less than ten. Is that sufficient?

Q That's fine. I'm just trying to get a gauge.

So the analyst reports tended not to refer to the FXCM notes?

A They referred to the economic conditions of the company, which would affect the FXCM notes.

Q Did they also refer to the stock?

A Yes.

Q Okay.

So they specifically discussed one of the securities at issue in this litigation, but they did not discuss the other?

A To the extent that they were not reports that discuss both, I believe that statement is accurate.

Q And I think what we're getting at is the majority of the reports you looked at were not both, only --

A I -- again, I said "a couple." Less than five or ten. That's the answer.

Q Is it relevant in your analysis as to whether or not an analyst discusses the specific security at issue in connection with the market that you're studying?

A Not necessarily.

Q Why not?

A Why? Because we're worried about firm information and its impact on securities.

And so to the extent that an analyst report is talking about the firm's financial condition, that is going to affect both equity and stock.

Q Would it be more likely that a security trades in an efficient market if the analyst

discussed the security as opposed to just the company?

A That's an interesting question. I've never really thought about that.

I would need to think about that more.

Q Sitting here today, you have no view on that?

A It's -- well, yeah, I would want to think about that more.

Q One of the things you considered in your analysis for Cammer Factor 2 for your notes that you did not for the common stock is institutional ownership.

A That is correct.

Q Why is that?

A Because these -- as economists, we typically think of these institutions as more informed, and, thus, the fact that they held those would suggest that information was incorporated into the bond prices.

Q Okay.

Is it -- what is your understanding as to who -- who is eligible to purchase the FXCM notes at issue in this case?

A Well, I -- I need to refer somewhere else

in my report, but looking at paragraph 130, (as read and/or reflected:)

> Because Rule 144A notes are held and traded solely as by QIBs, the entire issue of the FXCM notes was owned by an institutional investors.
>
> I don't remember what -- it's, like, qualified in -- I don't remember exactly what QIB stands for or the exact -- something about qualified investors. So I think I have that somewhere else in my report.

Q Okay.

What is your understanding of what a Rule 144A note is just at a very high level?

A Well, I mean, it's a bond offering obviously. It can only be -- it can only be held by QIB investors. But I think --

Q Is that true of all bond offerings, that they can only be held by QIB investors?

A No.

Q What's different at a high level between Rule 144A notes and other bond offerings?

A Well, so these are -- and I'm reading from paragraph 21 (as read and/or reflected:)

Notes that are not registered with the SEC and are exempt from the typical registration requirements are commonly referred to as Rule 144A issues.

Notes issued under Rule 144A can only be traded by qualified "investment" buyers, hence QIBs --

MR. HAKLAY: I think it's "institutional."

THE WITNESS: What did I say?

MR. HAKLAY: "Investors."

THE WITNESS: (As read and/or reflected:)

-- qualified institutional buyers, which are entities acting for [their] own account or the accounts of other qualified institutional buyers, that in the aggregate owns and invests on a discretionary basis at least $100 million in security of issuers that are not affiliated with the entity.

BY MR. ISAJIW:

Q Other than what's on that paragraph, do you have any other understanding of Rule 144A?

A I think that gives an accurate description of my understanding of Rule 144A.

Q And that's the entirety of your understanding of Rule 144A as it relates to your opinions in this case?

A I don't know. It's an overly broad question. I'm not sure how to answer that.

Q Have you ever done an event -- I'm sorry.

Have you ever done a market efficiency analysis in any other matters related to Rule 144A bonds?

A So yes.

Q Which ones?

A I don't know. I mean, I've done hundreds of cases over my lifetime.

Q How many of those hundreds of cases do you believe had to do with Rule 144A notes?

A I have no idea.

Q Proportionately, do you think it is 20 percent? 10 percent? 5 percent?

A In my lifetime, in terms of cases that I've worked on?

Q In the last ten years.

A Okay.

Let me ask a clarifying question. Do you

mean issued expert reports on?

Q Let's start there.

A Okay.

Because that is a different question than what you asked me.

Q Okay.

Let's ask that question.

A I have no idea.

Q How many times have you issued an expert report on Rule 144A bonds?

A I have no idea.

Q Other than this case, do you remember that you have, in fact, issued an expert report on a Rule 144A bond?

A I'll stick with I have no idea.

Q What about just being engaged as a consultant? How many times have you been engaged as a consultant in connection with an analysis for an efficient market in a Rule 144A bond?

A Yeah, I don't recall. When did I start -- well, let's go to my ...

Q I'm not looking for exact numbers. Is it at least once?

A Sure.

Q Okay.

Is it more than 20?

A Again, at this point -- at that point, I would be speculating.

Q Okay.

A I have no idea -- when I say "I have no idea," I mean I have no idea. If -- I know it's more than one, less than 20. I have no idea.

Q Okay.

A I'm giving you the best answer I possibly can give you.

Q I appreciate that and I'm trying to make sure we get to there. So ...

In connection with your Cammer Factor 2 analysis of the FXCM notes, would you consider coverage by rating agencies to be potentially important?

A With regards to 144A bonds? I'm sorry.

THE WITNESS: Could you reread the question.

(The record was read back as follows:

"Question: In connection with your Cammer Factor 2 analysis of the FXCM notes, would you consider coverage by rating agencies to be

potentially important?")

THE WITNESS: So when you say "coverage by the rating agencies," do you mean of the bonds?

BY MR. ISAJIW:

Q What is your understanding of what a credit rating agency does when it covers a fixed income security?

A Well, it performs analysis. It looks at --

Q What kind of --

A Looks at things like the firm's profitability.

Q To do -- to determine what?

A How "safe" the bonds are for -- well, and I put safe in quotation marks because rating agencies don't always do the best jobs.

To help inform people about whether or not the risk associated with holding these securities.

Q Do you have a view as an economist as to whether or not a bond being covered by a rating agency would tend to support it being traded in an efficient market?

A I could certainly see where that would be something that I might take into consideration.

And I can think of other cases where I have looked at that.

Q Okay.

Would the lack of rating agency coverage for a security tend to be inconsistent with the conclusion that it traded in an efficient market?

A Not necessarily.

Q But possibly?

A Anything is possible.

Q Is it more likely that a security trades in an efficient market if it is covered or not covered by a rating agency?

A That's not any -- that's not a question I've ever been asked to consider, so it's not something I've ever thought about.

Q Okay.

Sitting here today, you've never thought of it once?

A No.

Q Okay.

Do you know if these FXCM notes were covered by a rating agency?

A I don't believe so, but I don't -- I don't specifically recall.

Q Is it something that you looked into when you were conducting your analysis?

A As I sit here, I don't recall. I mean --

here. I'm sorry. Let's be more precise.

Yeah. To the best of my recollection, I don't believe they were covered by a ratings agency.

Q Okay.

Looking at page 48, under Cammer Factor 2, one of the additional factors you looked at is institutional ownership.

Do you know which institutions transacted in the notes during the Notes Period?

A As I sit here today, no.

Q Is it anywhere in your report?

A I don't believe so.

Q Is that information available to you?

A I don't believe so.

Q Did you request it?

A No.

Q So let's move to Cammer Factor 3, "Prominent Underwriters and Market Makers."

This is another example where you took a slightly different analysis from the common stock to the notes in that you discuss not only market makers but also underwriters; is that correct?

A Correct.

Q Why is that at a very high level?

A At a very high level? Well, underwriters

oftentimes make markets -- well, let's -- yeah. As I stated here (as read and/or reflected:)

> Investment banks that underwrite --
>
> And I'm looking at paragraph 132. (As read and/or reflected:)
>
> Investment banks that underwrite notes typically then serve as market makers for the notes.
>
> It would be a mistake to think that once the bonds are all sold, the investment banking firm's ties with the deal are ended. Those who bought the bonds will look to the investment banking firm to make a market in the issue. This means that the investment banking firm must be willing to take a principal position in a secondary market transaction.

Q And the footnote to the section of your report you just read references (as read and/or reflected:)

> "The Primary and Secondary

Bond Markets," by Frank J. Fabozzi, F-a-b-o-z-z-i, and Frank J. Jones, Chapter 3, in "The Handbook of Fixed Income Securities," 7th edition, edited by Frank J. Fabozzi and Steven V. Mann.

Is that correct?

A That is correct.

Q Other than that source, what are you basing that statement on?

The statement that investment banks underwrite notes -- that investment banks that underwrite notes typically then serve as market makers for the notes.

A I don't know. Thirty years of experience doing Ph.D., which focused on the role of investment banks in securities offerings.

Q In connection with notes?

A Specifically 144A notes? No. But in general, yes.

Q Okay.

Does Fabozzi discuss how long an investment bank will act as a market maker after the initial issuance of a note?

A As I sit here, I don't recall.

Q Do they discuss whether all of the underwriters who are involved in the initial issuance of a note will continue on as market makers?

A As I sit here, I don't recall.

Q Do you know in connection with this analysis how long any of these underwriters operated as a market maker in connection with the FXCM notes?

A I don't -- I need to relook at -- I need to relook at the TRACE data, but as I sit here, no.

Q Would the TRACE data tell you which underwriters operated as a market maker in connection with the 144A notes?

A I don't -- I don't recall as I sit here.

Q Do you have any understanding as to whether the underwriters acted as a market maker throughout the entire notes period at issue here?

A I do not.

Q Did you do any investigation to determine whether or not the underwriters acted as a market maker throughout the entire Notes Period here?

A As I sit here, I don't recall.

Q To the extent -- to the extent these underwriters did not act as a market maker for the notes throughout the Notes Period, would that tend

to indicate that the notes did not trade in an efficient market?

MR. HAKLAY: Objection.

THE WITNESS: No.

BY MR. ISAJIW:

Q It would at least remove whatever evidence of trading in an efficient market was ascribable to the time period when they did act as a market maker; is that correct?

A I'm sorry. I don't understand the question.

Q If I understand what you're saying in this report correctly, the fact that underwriters act as market makers for these notes is one -- under Cammer Factor 2, one indicia that the notes traded in an efficient market; is that correct?

A I believe that's accurate.

Q Okay.

MR. HAKLAY: I'm sorry. I think you meant Cammer Factor 3. Just so the record is clear.

THE WITNESS: Oh, yeah, sorry.

MR. ISAJIW: Thank you for your clarification.

MR. HAKLAY: You both meant it, I know.

///

BY MR. ISAJIW:

Q So to the extent that wasn't true for some period of the Notes Period, that would no longer support for the period where it wasn't true that the notes traded in an efficient market; correct?

A Not necessarily.

Q I'm just -- so if it is true that an underwriter acting as a market maker tends to support efficiency, it can't also be true that an underwriter not acting as a market maker would still support the efficiency; it stopped.

A Well, okay. I guess you then need to discuss or differentiate between efficiency and inefficiency. Right.

Efficiency is not a yes-or-no phenomenon. It's not a bipolar or two tail, whatever you want -- however you want to say it. It is not a yes or no. It is on a sliding scale.

Q So to the extent on that sliding scale that an underwriter acting as a market maker tends towards efficiency, when it stops acting as a market maker, it no longer tends towards efficiency, does it?

A I'm not sure that's correct. I would need to think about it more.

Q Other than the underwriters for the FXCM notes, how many market makers were there?

And I'll point you to paragraph 133, which I believe is where you describe -- paragraph 144 -- no. Paragraph 133, it says (as read and/or reflected:)

Additionally, Barclays, Sandler O'Neill, and UBS published a report stating that they made a market in FXCM securities during the Class Period.

Did I read that correctly?

A That's correct.

Q The reason I'm asking is: Do you know as part of your analysis that Barclays, Sandler O'Neill, and UBS made a market in FXCM notes during the Notes Period?

A I'm sorry.

THE WITNESS: Could you reread that, please.

(The record was read back as follows:

"Question: Do you know as part of your analysis that Barclays, Sandler O'Neill, and UBS

made a market in FXCM notes during the Notes Period?")

THE WITNESS: I would need to take a close -- a closer look at these reports to refresh my memory.

BY MR. ISAJIW:

Q Would -- which reports are you talking about?

A The reports published by Barclays, Sandler O'Neill, and UBS where they state they made a market in FXCM securities during the Class Period.

Q Okay.

So this is in the notes section of your analysis; correct?

A That is correct.

Q And you're citing these in connection with FXCM securities, not stock or notes, but securities, the broader term. And you're citing the Class Period, not the Notes Period. Again, the broader term.

So I'm just trying to determine if you did any analysis in connection with your report to determine that these three entities were market makers in the notes for the subsection of the Class Period that was the Notes Period.

A Right.

And so in order to refresh my memory, I would need to look at the reports in which those statements were made.

Q Did you previously look at the reports in which those statements were made and conclude that they did and now you just don't remember? Or did you not do the analysis initially? That's what I'm trying to understand.

A Right. And I don't recall.

Q Okay.

Would you agree that there are significantly few market makers for the notes than there were in your analysis for the class -- for the common stock?

MR. HAKLAY: Objection. More significantly.

THE WITNESS: Could you reread the question, please.

BY MR. ISAJIW:

Q You identified 205 market makers for FXCM common stock; correct?

A That is correct.

Q Okay.

At best, based on what I'm reading in your

report, there are between 5 and 7 potential market makers for the notes, although it's unclear, based on the report, how many of them were actually market makers for the notes.

So what I'm asking is, did you do anything in your analysis to account for the fact that there is a significant difference in the number of market makers in common stock, 205, versus the notes, roughly 5 to 7?

MR. HAKLAY: Objection. Vague.

THE WITNESS: Yeah. I don't understand the question.

What type of analysis are you referring to?

BY MR. ISAJIW:

Q You did an analysis on market efficiency.

A Correct.

Q For both the common stock and the notes; correct?

A That is correct.

Q In both of those analysis, you looked at Cammer Factor 3, which deals with, amongst other things, market makers; is that correct?

A That is correct.

Q Is it your view that more market makers tend to support a finding of market efficiency than

less market makers?

A I don't know how courts rule on that.

Q I'm not asking how courts rule on it. I'm asking how you as an economic expert rendering an expert report view that factor.

A Right. But I'm doing that -- I'm doing this in the context of litigation in which that -- I have been asked to provide this information.

My understanding is courts find this information helpful, and so I presented it to them.

Q So sitting here today, as an economist, have you ever thought about whether or not more market makers tend to support efficiency versus fewer market makers?

A Hold on one second. I just need to look at something here.

THE WITNESS: Could you repeat the question, please.

(The record was read back as follows:

"Question: So sitting here today, as an economist, have you ever thought about whether or not more market makers tend to support efficiency versus fewer market

makers?")

THE WITNESS: I mean, I would need more information to ask that -- answer that question.

BY MR. ISAJIW:

Q If a security traded in a market that had 205 market makers, in your view, as an economist, would it be more likely that that security is -- trades in an efficient market than one that has seven market makers?

A Not necessarily.

Q Is the number of market makers relevant in any way to your analysis of efficient market?

A Could be.

Q In connection with this analysis, was the number of market makers relevant in connection with your conclusion that the common stock traded in an efficient market?

A Well, let's see.

It informed my opinion, yes.

Q In your opinion, is there a number of market makers that would be too few to establish an efficient market?

A I -- that's not anything I've ever thought about.

Q If there were no market makers for a

security and they traded just between individual buyers and sellers, would that support market efficiency under Cammer Factor 3?

A Well, so now you're asking me about under Cammer Factor 3. And then you get to court rulings.

Q Are you giving a legal opinion in your report or an economic opinion?

A No. I am presenting evidence that I believe supports my findings in this report.

Q If the evidence, under Cammer Factor 3 in your analysis, was that there was only one market maker for a security, would that support a conclusion that the security traded in an efficient market?

MR. HAKLAY: Objection.

THE WITNESS: It's possible.

BY MR. ISAJIW:

Q If there were no market makers in a security, would that support the conclusion in your analysis that the security traded in an efficient market?

MR. HAKLAY: Objection. Assumes facts not in evidence.

THE WITNESS: So in your hypothetical example, nobody makes markets in the security.

Sure. Something could still about efficient with no market makers if just traded between individuals.

There's no reason to -- yeah. That's the answer.

BY MR. ISAJIW:

Q Take a look at paragraph 134, page 49.

It says (as read and/or reflected:)

During the Class Period, according to the trades reported to TRACE, between 35 percent and 40 percent of the trades reported were dealer transactions which results from a large number or dealers facilitating transactions similarly to how Market Makers increase the efficiency of the equity market.

Do you see that?

A I do.

Q Did I read that correctly?

A Yeah.

Q Based on your analysis of the TRACE data -- I'm sorry. Let me step back for a second.

Why would the proportion of dealer-to-dealer trades be relevant to your

analysis?

A Well, to the extent that oftentimes in economics people make the argument that dealers are more informed, that would -- that would influence my analysis.

Q Okay.

What do you mean by "dealer transactions"?

A Dealer transactions defined by the TRACE data.

Q Okay.

And what is that -- is that between one securities broker dealer and another securities broker dealer?

A As I sit here today, I would need to look at the data to refresh my recollection.

Q Do you believe, as you sit here today, that a dealer transaction would -- in the TRACE data be relevant to a dealer trading with a qualified -- a QIB?

A I don't understand the question.

Q You indicated to me that the TRACE data, at least in some way, indicates when it's a dealer transaction.

A That is correct.

Q Does the TRACE data demonstrate any other

type of transaction?

A As I sit here, I don't recall.

Q Did you review the TRACE data yourself in connection with your analysis?

A I did.

Q Do you know if the TRACE data identifies which dealers are trading the notes?

A Well, I -- when you say "which dealers," you mean -- I don't believe so, as I sit here today, but, again, I would need to look at the data specifically to refresh my memory.

Q Assuming you're correct that the TRACE data does not identify which dealers were trading in a transaction, how did you determine that there was a large number of dealers?

A Well, based on the fact that 35, 40 percent of the trades were dealer transactions.

Maybe I was inartful.

Q Based on the TRACE data, can you tell how many dealers traded during the Notes Period?

A Again, I would need to look at the TRACE data to refresh my recollection.

I'm happy -- I'm happy if you have the TRACE dataset, or at least a page of the TRACE dataset to look over that.

But as I sit here today, I don't specifically remember the answer to that question.

Q When you were doing your analysis, do you remember if you ever tried to determine how many dealers traded during the Notes Period?

A Again, I would refer to the same answer.

Q So you don't recall right now whether or not you ever tried to determine whether -- how many dealers traded during the Notes Period?

A Again, looking at the TRACE data will help me refresh my recollection.

Q As to whether or not you tried to determine that initially?

A It will refresh my memory regarding the TRACE data, and so, then, yes, it will refresh my memory with regards to your question.

Q So in connection with the note in Cammer Factor 3, you looked at prominent underwriters, market makers.

Cammer Factor 3, as we discussed earlier today, also discusses arbitrageurs; correct?

A I believe that -- so let's look back at ... yes.

And I'm reading from paragraph 33 (as read and/or reflected:)

The Cammer court stated, "the existence of market makers and arbitrageurs would ensure completion of the market mechanism"...

Q So in connection with your analysis of the FXCM notes, under Cammer Factor 3, did you examine arbitrageurs?

A So is your question in the TRACE dataset is there an indicator with regards to whether or not these dealers are arbitrageurs?

Q No.

My question is (as read and/or reflected:)

So in connection with your analysis for the FXCM notes, under Cammer Factor 3, did you examine arbitrageurs?

A I don't know how to answer that question.

Q Did you conduct any analysis to determine whether or not arbitrageurs existed in trading for the FXCM notes?

A I do not know -- I have not pulled the market participants and asked them why they bought or sold the notes --

Q Okay.

A -- which is what I would need to determine whether or not they were arbitrageurs.

Q Okay.

So the existence or nonexistence of arbitrageurs is not a factor in your analysis of the FXCM notes?

THE WITNESS: Could you read the question, please.

(The record was read back as follows:

"Question: So the existence or nonexistence of arbitrageurs is not a factor in your analysis of the FXCM notes?")

THE WITNESS: Again, I don't know the overlap between what these traders were doing and their purposes in doing it.

So to the extent that I was unable to ask them the purposes of their trades, I guess that was accurate.

BY MR. ISAJIW:

Q Okay.

A But, again, that's a guess based on speculation.

Q You don't remember incorporating the

concept of arbitrageurs into your analysis of the FXCM notes, sitting here today?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: Yeah. I'm -- I'm not sure your question makes sense.

MR. HAKLAY: Peter, before you ask your next question, at the last break the witness ask that we take breaks more frequently than every hour, so I was thinking every 45 minutes, which is not for another seven minutes, but I meant to tell you that before we started again.

MR. ISAJIW: I'm happy to accommodate, but let's discuss that off the record when we get a chance.

Q Let's turn to Cammer Factor 5 as it relates to your FXCM notes analysis.

And, again, this is (as read and/or reflected:)

Price Reaction to New Information.

Let me know when you're there.

A Yep.

Q Okay.

Did you include all three of the event days

we discussed earlier with the common stock analysis in your notes analysis?

A Did I include them?

I think they're implicitly included, but that was not one -- I did not look at the first event date that I looked at with regards to the equity when I was looking at the bonds.

Q And why is that?

A Because there's no reason for me to think that the transaction undertaken by the company would have any impact whatsoever on the firm's probability of bankruptcy.

Q Why not?

A Why not?

Q Yeah.

A I -- there's no reason for me to think that buying another company in this -- in which the analyst said it was a positive would necessarily impact the probability of bankruptcy.

Q And that's the reason you've excluded it?

A Yeah.

As I state in my report (as read and/or reflected):

Of the three events I selected for testing FXCM common stock

market efficiency, only two events occurred following the issuance of the FXCM notes.

(Reporter clarification.)

BY MR. ISAJIW:

Q So what I heard in your answer just a moment ago is that you also had the view that unless an event relates to the possibility of FXCM's bankruptcy, it wouldn't be relevant to a noteholder?

A No. Let's -- let's be very specific here. So turning to paragraph 137 of my report. Clearly lays out my belief on this subject matter (as read and/or reflected:)

> Because of bonds' seniority in the capital structure of a company, bonds' values and therefore prices are insulated from all but the most extreme news by a common stock valuation cushion.
>
> As a result, bonds are typically the least sensitive of all securities to company-specific news while being the most sensitive to a change in a firm's probability of default.

It follows that not all of the event study events selected for FXCM common stock would make suitable candidates for a bond market efficiency event study.

Q I recognize that that's what's written there. But I'm talking about what you said earlier, which is (as read and/or reflected:)

There was no reason for me to think that buying another company in this -- in which the analyst said it was positive would necessarily impact the probability of bankruptcy.

I asked (as read and/or reflected:)

And that's the reason you excluded it?

And you said (as read and/or reflected:)

Yeah.

Of the three events I selected for testing FXCM common stock market efficiency, only two events occurred following the issuance of the FXCM notes.

So I'm just getting back, not to what you

wrote there, but I'm trying to better understand your answer orally about the relationship to the likelihood of bankruptcy and relevance to efficiency of markets and notes.

A Right.

So I didn't think that that particular transaction would change the firm's probability of default would be a more precise way to state what I inarticulately stated before.

Q Generally speaking, if an event would change the firm's probability of default, is it more likely that you would include it in an event study for notes like the FXCM notes?

A I mean, I would need to do -- I would need to do that on a case-by-case basis.

I guess it --

THE WITNESS: Could you ask the question again or reread the question. Sorry.

(The record was read back as follows:

"Question: Generally speaking, if an event would change the firm's probability of default, is it more likely that you would include it in an event study for

notes like the FXCM notes?")

THE WITNESS: It would depend on the situation.

BY MR. ISAJIW:

Q The situation is it's more like -- more likely to result in a bankruptcy.

A Well, okay.

Oh.

When you say "more likely," 1 percent more likely? Two percent more likely?

Q I'm trying to get your view of how -- what percentage of likeliness to increase the probability of bankruptcy is the threshold above which you would enter an event into an event study for the FXCM notes.

MR. HAKLAY: For that reason alone?

THE WITNESS: No. I don't think --

MR. HAKLAY: Objection. Calls for a hypothetical.

THE WITNESS: That's not a --

MR. HAKLAY: Misstates the facts in evidence.

Please.

THE WITNESS: That's not a question that I've ever been asked to address in these types of

analysis.

BY MR. ISAJIW:

Q You have been asked just now.

A Not in the context of doing my report.

Q No. I'm asking you the question now. I'm asking when you're -- you talked earlier about an objective screening of events to include in the event study.

You've just indicated that an event that is increasing the probability of bankruptcy would be an event that you would look at to include in the event study related to the notes.

I'm asking: What percentage of an increased likelihood is required for you to actually include it?

MR. HAKLAY: Objection. Argumentative.

Objection. Misstates his --

MR. ISAJIW: "Objection" is fine.

MR. HAKLAY: Excuse me?

MR. ISAJIW: "Objection" is fine. We don't need speaking objections.

MR. HAKLAY: You don't need to tell me what to say. If I want to give a 50-word objection, I will. You can tell the judge one day, if you like.

Objection. Argumentative.

Objection. Misstates his testimony.

You can answer, sir.

THE WITNESS: I don't think I've ever thought about a bright-line test like it has to -- it has to be done on a case-by-case basis.

BY MR. ISAJIW:

Q Okay.

On --

A In this --

Q In this case --

A In this case, I did not --

Q -- it was -- I'm sorry.

MR. HAKLAY: Finish your answer. No, no, just finish your answer, please.

THE WITNESS: In this case, I did not believe it significantly changed the firm's probability of bankruptcy.

BY MR. ISAJIW:

Q In this case, if one of the events you reviewed in your objective screen increased the probability of bankruptcy by 1 percent, would that be likely to be included in your analysis or unlikely?

MR. HAKLAY: Objection. Assumes facts not in evidence.

THE WITNESS: Right. It's an incomplete hypothetical. I mean, I can't do it.

Again, you would need -- I need to have the entire context, look at the entire facts associated with the situation in order to arrive at my determination.

BY MR. ISAJIW:

Q If an event, as part of your objective screen -- strike that.

If in part of your objective screen you reviewed an event that you determined was 87 percent likely to increase the probability of FXCM's bankruptcy, do you think you would include it in your event study?

MR. HAKLAY: Same objections.

THE WITNESS: So in your hypothetical, the probability of bankruptcy would be -- would increase by 87 percent or the -- there would be an 87 percent probability that that event would impact the probability of bankruptcy?

BY MR. ISAJIW:

Q I don't know. I'm asking you. Which of those two would be relevant for your objective screen?

A Yours is an incomplete hypothetical. It's

unclear. I can't answer it, as I sit here today.

Q If an event would increase by 87 percent the likelihood of bankruptcy, would that be something you would probably include in your event study?

MR. HAKLAY: Same objection.

THE WITNESS: So in your incomplete hypothetical example, if an event occurs that increases the probability of a firm defaulting by 87 percent. Again, I can't -- I would need more facts in order to make that determination.

BY MR. ISAJIW:

Q Of the events that you reviewed in connection with designing your event study in this case, was your view of probability of increasing bankruptcy relevant to your selection process?

MR. HAKLAY: Objection. Asked and answered.

Please answer it.

THE WITNESS: I don't understand the question.

I thought -- I don't understand the question.

Can we take a break now?

MR. ISAJIW: One second.

Q Earlier today you testified that you reviewed a number of possible events for inclusion in your event study; correct?

A That is correct.

Q And that you -- we talked about you have a process where you considered to be an objective screening for selecting amongst those which are the actual events that you include; is that correct?

A Well, we're not discussing my news/no-news analysis, that is correct.

Q Okay.

In that or any other context in your analysis here, was probability of bankruptcy a selection criteria?

A I don't know how to answer that question.

Q In the news/no-news context, was probability of bankruptcy a selection criteria?

A No.

Q Okay.

In the event study, choosing the three --

A Well, I do not believe so.

Q Okay.

In your decision-making process to pick the three days that you ultimately included in your event study, was the probability of bankruptcy a

selection criteria?

A In my equity analysis?

Q Let's start there.

A I don't know. It's not something I've ever been asked before. It's not something I've -- I mean, I thought that those three events were new material information that would result in a statistically significant stock -- that was material enough to result in a statistically significant stock price movement.

With regards to the bonds, same answer except I only found two events.

Q Okay.

And was the selection process for the bonds of those two events related to your perception of increased likelihood of bankruptcy?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: So is your question: Do I think the firm losing $220 million increased their probability of bankruptcy?

BY MR. ISAJIW:

Q That's not my question. My question is --

A Well, it is -- sorry.

May I please finish my answer?

Q You asked me a question --
A No, I'm asking --
Q I'm answering your question.
You asked me --
MR. HAKLAY: You know what, it's been almost an hour. It's time to take a break.
THE WITNESS: Let's take a break.
BY MR. ISAJIW:
Q There's a question pending. I would like you to answer the question pending before we take a break. It's a relatively simple question. If the answer is yes or the answer is no, that's fine.
I'm just asking if your perception of likelihood of bankruptcy was a selection criteria for the event study in connection with the notes.
MR. HAKLAY: Objection. Argumentative. Repetitive. Asked and answered.
Please. You can answer one more time.
THE WITNESS: I believe -- and let me get the number exactly correct.
For instance ...
BY MR. ISAJIW:
Q Maybe I can reframe the question.
A Well, no. Let me answer your question as stated.

Q Okay.

A So on paragraph 85, I'm quoting here (as read and/or reflected:)

FXCM -- let's see --

Their clients owed them approximately $225 million.

So do I think that having their clients owe them $225 million increases their probability of bankruptcy?

Yes, I do believe that, but I did not select that date strictly because it increased the probability of the firm's bankruptcy.

BY MR. ISAJIW:

Q Was it a relevant factor?

A That's a question I have not considered, as I sit here.

Q Okay. Now take a break --

A I'm giving you the best answer I can give you.

MR. ISAJIW: I appreciate that.

THE VIDEOGRAPHER: We are going off the record.

The time is 3:52 p.m.

(Recess was taken at 3:52 p.m.

until 4:07 p.m.}

THE VIDEOGRAPHER: We are back on the record.

The time is 4:07 p.m.

BY MR. ISAJIW:

Q Dr. Werner, I want to talk about your -- again, in relation to the notice, your event study that you conducted under Cammer Factor 5, the section titled "Cammer Factor 5: Price Reduction and New Information."

MR. HAKLAY: Price reaction.

BY MR. ISAJIW:

Q "Price Reaction to New Information."

A All right. Okay.

And what page?

Q 50.

A Okay.

Q And specifically just to start off, if you turn a couple pages to 53.

A Page 53?

Q Yes.

We see "Event Study Results" as a heading for the January 16th, 2015 day and the February 7th, 2017 day on 53 and 54, respectively.

And my first question is: Did you perform a news/no-news analysis for the FXCM notes like you

did for the FXCM common stock?

A I did not.

Q Okay.

Why not?

A I mean, I haven't seen it done in the past. Certainly, no one's asked me to do it in the past. I'm not sure I've ever seen a news/no-news analysis for a bond offering. So I guess I would say, to the best of my understanding, it's not part of industry practice.

Q As an economist, is there a principal difference between the equity and the bond -- the equity security and the bond that would make the news/no-news analysis inappropriate?

A Well, so let's go back to what I -- where I describe bonds.

So, again, this is reading from paragraph 137 (as read and/or reflected:)

> Because of bonds' seniority in the capital structure of a Company, bonds' values and therefore prices are insulated from all but the most extreme news by a common stock valuation cushion.
>
> As a result, bonds are

typically the least sensitive of all securities to company-specific news while being the most sensitive to a change in a firm's probability of default.

It follows that not all of the event study selected for -- sorry -- all of the event study events selected for FXCM common stock would make suitable candidates for a bond market efficiency event study.

Q Okay.

And so that's why there are few -- fewer events in your event study for the bond, but I'm just talking about the news/no-news analysis that we discussed earlier with the common stock.

A Right. And that's my answer to your question.

Q What about that answer would indicate that you cannot do a news/no-news study for bonds?

MR. HAKLAY: Objection. Misstates his testimony.

THE WITNESS: Right. So you're asking -- now you say "cannot."

So is it possible to do one? It is possible to do one. I'm not sure I've ever seen one performed.

BY MR. ISAJIW:

Q Okay.

You mentioned that twice that you haven't seen one performed and that you don't believe that it is part of any kind of industry standard.

What are you basing that on?

A As I sit here today, my recollection.

Q Okay.

Earlier we talked about how many times you analyzed notes transactions from a market efficiency perspective, as opposed to common stock, and I think the summary of that was notes are a far fewer -- the subject of notes is far fewer times the subject of your analysis -- let me rephrase that.

Earlier we discussed your prior work in connection with market efficiency analysis as between common stock and notes.

And I believe you testified that you analyzed notes far fewer than you do common stock; is that correct?

A I believe it is correct with regards to -- with regards to me acting as an expert.

In general, there are much fewer bond cases than there are equity cases brought.

So I think industrywide, that statement is true as well.

Q Which statement?

A That people analyze bonds less than they do stock.

Q Okay.

I'm asking if there's any reason why you -- why a news/no-news analysis would not be conducted with a bond, as opposed to a stock.

MR. HAKLAY: Objection. Asked and answered.

Please answer.

THE WITNESS: Again, I refer you to paragraph 137 and not -- I'm speaking not just of my own analysis. I've seen, obviously, other reports on bond market efficiency. I've just never -- to the best of my recollection, as I sit here today, I have not seen it done.

BY MR. ISAJIW:

Q Which other reports on bond market efficiency are you talking about?

A I don't recall, as I sit here today.

Q Is it possible to do a news/no-news

analysis on bonds?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: As I stated before, is it possible? So in the grand -- in the world of possibilities, yes, it is possible.

Again, that having been said, I have, to the best of my recollection, I have never seen one performed.

BY MR. ISAJIW:

Q And at any point in connection with this analysis, did you try to perform one?

MR. HAKLAY: Objection. Asked and answered.

Please answer.

THE WITNESS: I don't believe so.

BY MR. ISAJIW:

Q And when you made the decision not to perform one, was that based on anything, other than you just haven't seen them being done before and that you were not asked to do one?

A Asked to do one.

So I don't understand the question.

Are you suggesting that -- I don't understand the question.

Q I thought when I asked you earlier about whether or not you did, you said no.

And I said, "Why not?"

And I believe you said you weren't asked to do one.

A No.

Q Okay.

A That's inaccurate.

Q Okay.

Were you asked to do one?

A I'm never asked to do any specific analysis.

Q So at some point during your analysis, you did a news/no-news for the common stock; correct?

A Not at the -- that is correct, but not at the behest of plaintiffs' counsel.

Q I wasn't suggesting it was. I was just asking if you did it.

A Right. But your previous question was about had anyone asked me to do an analysis. And so I'm just trying to be clear about what we're talking about here.

Q Okay.

To be clear, at some point during your analysis, you did a news/no-news analysis for the

common stock.

Yes or no?

A That is correct.

Q Okay.

You also, at some point in your analysis, had to make a decision whether or not to do a news/no-news analysis with the bond; correct?

A I -- I'm sorry. Could you reread the question?

(The record was read back as follows:

"Question: You also, at some point in your analysis, had to make a decision whether or not to do a news/no-news analysis with the bond; correct?")

THE WITNESS: I'm not sure how to answer that question.

I refer you to my previous answers about why I didn't do one.

BY MR. ISAJIW:

Q And your previous answer is paragraph which again? I'm sorry.

A Well, can you read back my answer from before?

Q Is it one -- I believe it's 137.

A It is paragraph 137, but I don't -- I don't believe that that was the only reason I stated I did not do it. And so as to be as accurate as possible, if you would like me to have her read back the exact statement --

Q I don't want her to read back. I'm just trying to make sure that I get your best answer.

You did not do a news/no-news analysis for the bond, partly because of the reasons in 137; correct?

A That is correct.

Q Okay.

Were there any other reasons?

A Other than the ones -- the other ones I stated?

Q Which are the other ones that you stated?

A Again, just for accuracy, can you please read back my statement where I discussed my decision initially not to do this type of analysis?

Q I think reading that record would be difficult to do.

So let me try to break it down.

Of the reasons you did not do a news/no-news analysis, one of them were the reasons

in paragraph 137; correct?

A That is correct.

Q One of them is you do not believe it is an industry standard to do a news/no-news analysis for bonds; is that correct?

A If that is what I stated, then that is correct.

Q I'm asking you if that's correct now as you sit here today, regardless of whether or not you said that before.

A I don't remember the exact way I phrased it. At this point, I'm just confused about the question.

I'm -- let me say it this way: I have answered your question to the best of my ability.

Q And I'm trying to make sure I understand your answer.

So part of the reason was 137. Part of the reason was, you don't believe it's an industry standard to do a news/no-news analysis on the bond; correct?

A I'm not sure that that's exactly what I said.

I believe I --

Q Would you adopt that statement now

regardless of whether or not you said it before?

A Oh, so now the statement is it is not an industry standard.

I do not believe I have seen a news/no-news analysis performed for bonds before.

Q Okay.

A That is my full understanding.

Q So part of the reason is that you have not seen it done before; correct?

A I'm telling you -- I've answered your question to the best of my ability.

Q Is any part of the reason that it could not be done?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: I'm sorry. What was the question?

(The record was read back as follows:

"Question: Is any part of the reason that it could not be done?")

THE WITNESS: Oh, so, again, I would refer you read my previous answer. It is possible to do one.

That having been said, I have never seen,

to the best of my knowledge or the best of my remembrance, as we sit here today, one having been performed.

BY MR. ISAJIW:

Q Other than the reasons we've talked about, can you think of any other reason why you did not perform a news/no-news event analysis on the bond?

A Any other reason than what I have previously stated?

I don't believe so, but at this point, I'm not -- I don't believe so.

Q Okay.

In your review of the bond, do you note whether or not the bond traded on each day of the Notes Period?

A I'm sorry. Where are you looking?

Q I'm not looking anywhere. I'm asking you a question.

A Okay.

Sorry. Then, I don't understand the question.

Q Do you know if the bond traded on each day of the Notes Period?

A Oh, I don't believe so.

Q Okay.

Would it be appropriate in your analysis to consider trading of the bond that occurred over a weekend?

MR. HAKLAY: Objection. Vague.

THE WITNESS: I don't understand the question.

BY MR. ISAJIW:

Q If a bond traded over a weekend, would you include that in your analysis of market efficiency, pursuant to your report?

MR. HAKLAY: Same objection.

THE WITNESS: So in your hypothetical example, the bond trades over the weekend?

BY MR. ISAJIW:

Q Uh-huh.

A So someone buys and sells it over the weekend, like, let's say, Saturday?

Q Yes.

A I'm -- that's not anything I've ever had to consider before.

I would need more time to think about that.

Q Do you know if the FXCM bonds at issue in this case that you analyzed ever traded over a weekend in connection with the Notes Period?

A And, again, just for my clarification, when

we talk about "traded," we mean bought and sold -- and when you say "over a weekend"; right, because over a weekend, when we usually talk about it from the point of view of these types of analysis, it means from, like, Friday to Monday.

So you're saying, in your hypothetical example -- and to the best of my knowledge, it is hypothetical -- maybe it did occur?

When you say "over the weekend," you're talking about a transaction, just by way of my example, someone bought and sold a bond on a Saturday?

Q In that example, would it be appropriate to consider that trading activity in your analysis?

A That's not something I've ever been asked to think about before. So I would need more time to think about it.

As I sit here today, I can't answer that question.

Q Do you know if that occurred with the FXCM notes during the Notes Period?

A As I sit here today, I do not know.

Q Okay.

If it did occur, do you believe you've included those trades in your analysis?

A Again, I don't know.

Q Do you believe you've included all trades during the Notes Period in your analysis?

A To the best of my -- what do you mean by "all trades"? I'm not sure I understand the question.

Q There's a specific period of time that we've been referring to as the Notes Period; is that correct?

A That is correct.

Q You understand that specific period of time; correct?

A I do.

Q Trading of the notes occurred within that window of time?

A That is correct.

Q You studied the trading of the notes within that period of time in connection with your market efficiency study for the notes; correct?

A That is correct.

Q Did you include all trading of the notes in that window of time in your analysis?

A Right. And so here's where we -- this is where I'm having problems, right.

I mean, there could be off-market trades

that aren't necessarily reported. And I could think of all sorts of examples where trading occurs. And when people talk about things like dark pools, when we talk about equity, trading occurs. It's not necessarily reported.

So I'm -- if you want to -- if you want to show me where this has occurred, I may have a better understanding of it. But given -- given my understanding of how trading is defined, I don't know the answer to your question.

Q Do you believe that Rule 144A bonds trade in dark pools?

A I don't -- I, as I sit here today, have no opinion about that one way or the other.

Q Okay.

A Certainly -- oh.

Q Any of the trading of the bonds in relation to the FXCM notes that you analyzed -- sorry. Let me rephrase that.

Are you aware of any trading in connection with the FXCM notes that you looked at in connection with your market efficiency analysis that occurred through a dark pool?

A Well, so let's just be clear.

I was giving you an example of a period of

time where a trade might occur that it would not necessarily be reported.

I was not -- I did not mean to suggest that FXCM's notes were traded in a dark pool. That was not my intention.

Q Okay.

Looking at paragraph 140 of your report, it says (as read and/or reflected:)

> For the February 7, 2017 event, there was no trading price for the FXCM notes in the eight days preceding February 7, 2017. The earliest available price for FXCM notes prior to the February 2017 was on January 2016.
>
> Consequently, I performed the event study for February 7, 2017, using the FXCM notes' return from January, 26, 2017, to February -- February 7th, 2017.

MR. HAKLAY: I'm going to -- just for you at one point in the middle there, unintentionally you said "January 2016." I know you meant "January 26, 2017," as you later said.

MR. ISAJIW: Thank you for that correction.

Q Did I read that, other than that correction, correctly?

A Yes.

Q Is it -- did you use the return from January 26, 2017, because there was no evidence of trades on January 27, 2017?

I'm just trying to understand the import of that paragraph.

A I don't understand the question.

Q Explain to me at a very high level why you performed the event study from -- for February 7, 2017, using FXCM notes return from January 26 to February 7, 2017.

MR. HAKLAY: Objection to the term "at a very high level."

THE WITNESS: Right.

So my understanding is that the earliest available price for the FXCM notes prior to February 7th, 2017, was on January 26, 2017. That is the reason why I used it.

BY MR. ISAJIW:

Q Okay.

So there was no trading -- there was no other trading? That was the only trading that you could find?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: Could you read back my question -- my answer, please.

(The record was read back as follows:

"Answer: Right.

So my understanding is that the earliest available price for the FXCM notes prior to February 7th, 2017, was on January 26, 2017. That is the reason why I used it.")

THE WITNESS: That is correct. That is my understanding.

BY MR. ISAJIW:

Q Okay.

And in paragraph 142, one, two, three, four lines down, you say (as read and/or reflected:)

For the Notes, the regression data series included only days on which there was a trading price for two consecutive trading days, so that a one-day return could be computed.

Why is it important to have two consecutive trading days?

A Why is it important to have two consecutive trading days? It's just -- it's commonly what's done in the -- in the profession.

Q Any other reason?

A No. That's ...

Q And when you say (as read and/or reflected:)

It's commonly done within the profession.

Which profession are you referring to?

A Profession where anyone tries to -- tries to undertake a market model estimating bond returns.

Q Would that be economists?

A I believe economists might undertake that.

Q Anybody else?

A I'm sure other people undertake that as well.

Q Any other profession that springs to mind when you say "it's common in the profession"?

A I mean -- I mean, if -- I'm sure if I went to some trading firms and they were trying to do models predicting bond returns or trying -- they would commonly use that as well.

So that would be one such example.

Q Okay.

Do you know how many days have consecutive trading in the bond during the Notes Period?

MR. HAKLAY: I'm going to object as vague because I don't know if you mean both days count as one or both days count as two, if it's consecutive.

THE WITNESS: Yeah. As I sit here today, I don't recall.

BY MR. ISAJIW:

Q Do you believe it was uncommon to have consecutive trading days in the bond during your analysis of the Note Period?

MR. HAKLAY: Objection. Vague as to the word "uncommon."

THE WITNESS: I was going to ask you to define uncommon. So I guess I agree with the objection that the term is vague. I can't answer the question.

BY MR. ISAJIW:

Q Do you have -- what is your understanding of the term "uncommon"?

A In what context?

Q In this context.

A I don't know your -- if I use the word

"uncommon" in my report, I'm happy to have you point it out to me, and then I'll be able to give you a better understanding.

But I'm not sure. You're asking the question. I don't know.

Q Let me rephrase the question.

When you reviewed the trading of the bonds during the Notes Period, how many pairs of consecutive trading days were there?

A I refer to my previous answer.

Q Which is what?

A I don't recall.

You asked it about a minute ago, that specific question.

Q So if you look at Exhibit 11.

MR. HAKLAY: 11 he said. Not 12.

BY MR. ISAJIW:

Q What is Exhibit 11?

A It's my regression results for the bonds.

Q Is there anything on Exhibit 11 that would refresh your recollection as to how many consecutive -- how many days -- how many pairs of consecutive days the bonds traded?

A As I sit here today, I see the number 66. So my guess is that's probably the right number.

Q And that's 66 out of how many days?
A Well, whatever --
Q It's more than two years?
A It is more than two years. That is correct.
Q So that is a relatively low number of days with consecutive trading. Would you agree?
MR. HAKLAY: Objection to the term.
Please answer.
THE WITNESS: No, I would not agree.
BY MR. ISAJIW:
Q Is it more than half of the days?
A That's a different question. Is it more than half of the days? More than half of the days during the -- during that period?
Q Yes.
A It is -- so is 66 more than 252 times 2? 66 is not more than -- and, again, 252 times 2 is just an estimation on my part.
Q So 66 is under observations. And that means bond price observations in connection with your regression study; is that correct?
A With my mark -- with my market model, I believe that is correct.
Q Do you know how many bond price

observations you excluded from your analysis because the bond price did not occur within a consecutive trading day?

A Do I know how many?

THE WITNESS: Could you repeat the question, please.

(The record was read back as follows:

"Question: Do you know how many bond price observations you excluded from your analysis because the bond price did not occur within a consecutive trading day?")

THE WITNESS: As I sit here today, I do not.

BY MR. ISAJIW:

Q But there were some?

A I believe that's an accurate statement.

Q Do you know if there were more than 66?

A As I sit here today, I don't know.

Q Is there anything in your report that you could refer to, to figure that out?

A Possibly. It looks like I could add up all the observations on Exhibit 12.

So one, two --

MR. HAKLAY: Hold on.

BY MR. ISAJIW:

Q I'm not asking you to add it up. I'm just asking to see if that's how you would figure it out, Exhibit 12.

A I believe so.

Q Okay. Thank you.

So referring back to paragraph 140 on page 51.

A Okay. Paragraph 140 on page -- there we go. 140.

Yeah. Okay.

Q So for the February 7th, 2017 event, you used an 11-day window to calculate the return on the bond, meaning from January 26, 2017, to February 7, 2017; is that correct?

A What do you mean by "window"?

Q Number of days.

A So could you restate the question with "number of days" instead of "window"?

Q Is there anything particular about the word "window" that is confusing you?

MR. HAKLAY: Objection. Argumentative.

THE WITNESS: Well, oftentimes window is a term of art in economics. So I don't know how

you're using it.
BY MR. ISAJIW:
Q And what does that term of art refer to in economics?
A It would depend on the situation. But it's not -- it's not -- there's not a -- necessarily a common definition of it.
Q Your calculation here results in an 11-day return; is that correct?
A I'm not sure that's correct.
Q Okay.
In this particular example for this one event, you used an 11-day period to calculate the return on the bond; is that correct?
A I used the price on February 7th and January 26th. If that's 11 days, then I believe the answer to your question is yes.
Q Okay.
And that's to calculate the return in connection with the February 7th event; correct?
A I'm sorry. The what?
Q The return.
A On which day?
Q February 7, 2017.
A That is correct.

Q Okay.

Have you ever seen an 11-day return used to measure a single-day event in any peer-reviewed academic study?

A Have I ever seen -- I have -- as I sit here today, I have no idea.

Q Okay.

When you do this type of analysis, is it often -- is it common for you to use an 11-day period in your calculation for a single-day event?

A Well, to the extent that normally when I perform this analysis, it's on equities, no; that would be uncommon.

Q Okay.

A But to the extent that this is a bond offering, I can't say whether it would be common or uncommon.

Q Okay.

In your calculation, are you assuming that the bond price stayed constant between the last trade on January 26th and the first trade on February 7th?

A What do you mean by remain constant?

Q Did not change.

A Am I making the assumption that the price

did not change -- I don't understand the question.

Q If the price changed in the 11-day period, would that affect your calculation?

A Possibly.

Q Are you assuming for the sake of this calculation that the price did not change during those 11 days?

A And, again, I'm just not -- so are you -- is the question did another trade occur during that 11 days in which the price changed?

I don't -- I don't quite understand the question.

Q I'm just trying to think of different ways to phrase it.

Are you assuming, for the sake of this calculation, that the bond would have traded at the same price on February 1 as January 26th?

A Am I making the assumption that the bond price would have --

THE WITNESS: Can you reread the question, please.

(The record was read back as follows:

"Question: Are you assuming, for the sake of this calculation,

that the bond would have traded at the same price on February 1 as January 26th?")

THE WITNESS: I don't understand the question.

BY MR. ISAJIW:

Q If the bond price could have moved between January 26th and February 7th due to other information occurring within that time period, how can you interpret that return as measuring the impact on the alleged disclosure of the February 7th, 2017 event?

Can you?

A Oh, so you're -- wait.

Are you assuming that additional events occurred during that window that moved the -- that would have impacted the bond price?

Is that what your hypothetical is assuming?

Q I'm asking if that happened.

A To the best of my knowledge.

I mean -- well, so information -- I'm sure information came out during that period, but information that affected the bond prices? Not to my knowledge.

Or information that would have affected the

bond prices? Not to my knowledge.

Q If it did occur, would that affect this calculation?

A So in your hypothetical, news that would be of such import occurred during that seven-day window that would have been significant enough to change the bond price, would that have moved the bond price?

I -- I don't know. I don't even know how to answer that question.

Q No. I'm asking, are you assuming for this calculation that that did not occur, that the bond price remained constant between January 26, 2017, and February 7, 2017?

A And, again, I think I've stated, I don't know how to answer that question.

Q Okay.

When you were analyzing the corrected -- the disclosure event for the common stock, do you use the sub period of February 8, 2016, to February 6, 2017, when you're testing the reaction of the common stock?

A I'm sorry. Could you repeat the question.

Q In connection with your analysis in common stock for this trading event, the February 7th, 2017

trading event -- I'm sorry -- disclosure event, you used a sub period, which was February 16 to February 17.

A The sub period? I'm sorry. I don't understand the question.

Q You broke down your analysis of the common stock into sub periods; correct?

A Well, so which sub periods are we talking about? Are we talking about the market model sub periods?

Q Okay. Yes.

A Well, then yes. By definition, I broke those down into sub periods.

Q Why didn't you do that with the notes?

A Oh, so we're going -- okay.

I -- at this point in time, I would refer to my answer, which I previously gave, with regards to that question.

Q Which answer?

A I don't have anything more to say on that subject.

It occurred maybe an hour or two hours ago. That specific question was asked.

Q Was one of the reasons because you did not have enough consecutive trading days for the bond?

A I've answered that question to the best of my ability. I believe my -- the answer that I gave previously is the best answer I can give at this point in time.

Q When we went through that answer, was one of them that you did not have enough consecutive trading days for the bond?

A I don't recall whether or not that was part of my answer.

Q Sitting here today, do you believe that one of the reasons is because you did not have enough consecutive trading days for the bond?

A I don't have an opinion one way or the other, as I sit here today.

Q For the period of February 8th, 2016, to February 6th, 2017, do you know how many consecutive trading days there are for the bond?

A I'm sorry. So February 8th?

Q 2016.

A Okay. February 8th, 2016, to when?

Q February 6th, 2017.

A February 6th, 2017.

Okay. Hold on.

Based on -- and, again, I'm reviewing Exhibit 12. I believe the answer to your question

is zero, but I would have to fully review all the data to -- I would need to look at each -- my entire dataset to give you a more accurate answer to that question.

Q Okay.

Let's move to the Unger/Krogman factors in connection with the notes, which is on page 54 and paragraph 152.

Let me know when you're there.

A Okay.

Q You state (as read and/or reflected:)

> In addition to evaluating the efficiency of the market for FXCM notes using the Cammer factors, I also analyzed the Unger/Krogman factors that are relevant to the bond market, market capitalization (or total par value) and float.

A Maybe I'm looking at the wrong part.

Which paragraph?

Q 152.

A Oh, so is that in the beginning of the paragraph?

MR. HAKLAY: Yes. He's reading from the very beginning of the paragraph.

THE WITNESS: Oh, okay. So -- okay.
BY MR. ISAJIW:
Q The next sentence says (as read and/or reflected):
Because bid-ask data are not reported by TRACE for bond transactions, this Unger/Krogman factor was not assessed for the FXCM note.
Did I read that correctly?
(Reporter clarification.)
THE REPORTER: Thank you.
BY MR. ISAJIW:
Q Did I read that correctly?
A You did.
Q Okay.
Are there any other data sources for bid-ask spread quotes, other than TRACE?
A For bonds?
Q Yes.
A As I sit here today, I don't know.
Q Did you endeavor to look for any other sources of bid-ask data, other than TRACE for bonds, in connection with your review of the FXCM notes in this matter?

A I do not believe so.
Q Why didn't you?
A Why didn't I? Again, I'm going back to industry standards. TRACE is the dataset usually used to perform these types of analysis. It doesn't report bid-ask spread --
THE REPORTER: It doesn't report what?
THE WITNESS: Bid-ask spreads. So ...
BY MR. ISAJIW:
Q Let's look at paragraph 154 on page 55. And this is under the ultimate heading on the top of the page, "Outstanding Par Value (Market Capitalization)."
MR. HAKLAY: He's there.
THE WITNESS: Oh, I'm sorry. Yes.
BY MR. ISAJIW:
Q You state (as read and/or reflected:)
Beyond FXCM's large common stock market capitalization, the total par value of the FXCM notes was larger than the market capitalizations of some publicly-traded companies.
Is that correct?
A That is correct.

Q Throughout this report, you highlight the differences between how stocks and how bonds trade.

So why did you benchmark the bond size to an equity market capitalization?

A Because that was the universe that I had data on.

Q Do you believe that that analysis is an industry standard?

A I don't know one way or the other whether that analysis is an industry standard.

Q Did you look for any other sources of data to benchmark the bond against?

A In this context?

Q Yes.

A For this analysis? I don't believe so.

Q Are you aware of any peer-reviewed academic literature supporting this methodology?

A I'm not familiar one way or the other.

I mean, this typically -- I don't -- I don't think people -- I don't think this is an analysis that's commonly done outside of litigation.

Q Okay.

MR. ISAJIW: How are we on time?

MR. HAKLAY: We started this one at 4:07.

THE VIDEOGRAPHER: Do you need a time?

We're at 5 hours and 23 minutes.

MR. HAKLAY: You meant total time?

MR. ISAJIW: No.

I'm asking how long have we been since the last break?

MR. HAKLAY: 43 minutes. So --

MR. ISAJIW: Maybe this would be a good time to stop while we change gears.

MR. HAKLAY: Thank you.

I didn't understand the question.

Yes.

THE VIDEOGRAPHER: We are going off the record.

The time is 4:50 p.m.

(Recess was taken at 4:50 p.m.

until 5:02 p.m.}

THE VIDEOGRAPHER: We are back on the record.

The time is 5:02 p.m.

BY MR. ISAJIW:

Q So, Dr. Werner, I wanted to discuss your damages opinion and damages methodology for a little bit.

On page 5 of this report, Opinion 3, you state (as read and/or reflected:)

With expert assistance, the finder of fact in this matter will be able to compute damages using a common class-wide methodology that applies to the calculation of damages for each and every Class member.

Is that correct?

A You read that correctly.

Q And then on page 56 you have a heading, "Common Damages Methodology."

A "Common Damage," singular, "Methodology." Maybe it should say "damages."

Q Okay.

Did you draft this section of your report?

A At some point in my life, yes.

Q Okay.

So this is -- this section or parts of it have been used in prior reports of yours?

A I believe that's correct.

So, by way of example, I mean, I would typically use this language (as read and/or reflected):

Plaintiffs' counsel -- and this is paragraph 156 -- has asked

me to opine on whether per share out-of-pocket damages could be used for each Class member under Section 10(b) of the Exchange Act using a common methodology for all Class members.

Q Okay.

I was just asking because you said at some point in your life, and I thought that meant not necessarily for the first time here.

A Well, it -- no. I mean, if we're going through the entire thing, yes, certain portions of this were specifically drafted for this report.

Q Okay.

A Or this case, I guess.

Q Generally speaking, does one damage model work for all securities litigation cases?

MR. HAKLAY: Objection.

THE WITNESS: Does one -- I don't understand the question.

BY MR. ISAJIW:

Q You describe a damages methodology in this report; correct?

A Yes, that is correct.

Q Is part of that damages methodology a

damages model?

A So a damages model, I think, is slightly more complex. I have been asked to opine on whether or not per-share damages could be measured each -- for each Class member under Section 10(b) of the Exchange Act using a common methodology for all Class members.

So I've opined upon that. I have not -- until the record is complete. I could not give you a full-blown damage model.

Q Okay.

So you haven't created a damage model?

A Created a damage model?

I have provided a framework under which one could calculate damages.

Q That framework that you provided, would that work for all securities class action cases?

A I think by definition, no.

Q Okay.

Have you ever proposed a different framework in any of the securities cases that you've been a testifying expert for in the past?

A At the market efficiency stage?

Q Yes.

A I don't know. I would need to think about

that.

Yeah. I'm just providing a framework under which to calculate damages.

I don't know. I'm sorry. I don't know how to answer your question.

Q So you provided a particular framework in this report, which we'll get into the details of, but, generally speaking, you provided a framework; correct?

A What do you mean by "generally speaking"?

Q Let me rephrase it.

I believe you just told me that you provided a framework for calculation of damages in this report.

A That is correct.

Q Okay.

Have you provided that same framework in prior securities litigation cases in a market efficiency report?

A Have I provided that same framework?

I'm not sure how to answer that question.

Q Help me help you -- help me ask a better question.

What is confusing about the question?

A I just don't understand it.

Q You refer to a framework in this report. I'm asking if you used this framework in prior matters at the market efficiency stage -- I'm sorry -- at the class certification stage.

A I have provided a framework under which one could estimate damages in this specific case.

Q Okay.

Have you ever proposed a different framework in another matter?

A I'm sure I have.

Q Have you ever proposed a different framework in a securities class action case?

A Hmm. I don't know, as I sit here today.

Q You currently cannot think of a time when you proposed a different framework in a securities class action case?

A I think --

THE WITNESS: What was my answer to the previous question?

(The record was read back as follows:

"Answer: I don't know, as I sit here today.")

THE WITNESS: Yeah. Still I don't know, as I sit here today.

BY MR. ISAJIW:

Q Turning to page 57, paragraph 159, subparagraph "i." You talk about a number of valuation tools including an event study analysis and potentially other empirical analyses, if necessary.

Do you see that?

A Yes.

Q Okay.

Apart from an event study, what are the other empirical analyses that you're referring to?

A I mean -- again, until I have the full record for this case, I would be -- I would be speculating to talk about other empirical analyses.

Q Can you give me just an idea of what's on the menu for potential other empirical analyses?

A Not until I have a full record of the case.

Q In any other case, have you used other empirical analyses, apart from an event study?

A I believe so.

Q In a securities litigation case?

A I'm sorry.

Under market efficiency, or are we talking now about loss causation and damages when we're talking about a securities case?

Q We're talking about damages methodology, as described in paragraph 159, sub "i," where you say that you would use an event study and potentially other empirical analyses, if necessary.

I'm just trying to figure out what are the potential other empirical analyses.

You've suggesting you've used others in other cases. So I'm now just asking, which ones?

A Right. But so when I say "other cases," I'm talking about at a lost causation or damages stage.

Q Let's start with at the class certification stage.

A So I have not -- I don't think I've ever been asked to calculate damages.

Q Okay.

A Specific damages at the class certification stage.

Q That makes sense.

And so then at the damages expert report stage, what types of other empirical analysis have you used in the past to calculate damages?

A Again, and this is to the best of my recollection, I mean, possibly earnings, earnings multiplier -- not earning multiplier. Sorry.

Earnings ratios. I mean, a series of financial ratios.

Again, it varies from case to case.

Q Okay.

In the next sentence of the same paragraph you say (as read and/or reflected:)

This analysis, after controlling for potentially confounding non-fraud-related information, would determine if the alleged misrepresentations and omissions had caused the stock prices to be artificially inflated, and that the corrective disclosure(s) caused the inflation to dissipate, in turn causing investor losses.

Did I read that correctly?

A Yes.

Q What do you mean by "potentially confounding non-fraud-related information"?

A Information not related to the fraud.

Q What does "confounding" mean?

A Confounding, different, conflicting with.

Q As you're using it in this sentence, I'm

just trying to understand.

A Information that's not the same as the fraud-related information.

Q What types of information can be confounding information, in your experience?

A It depends on the situation.

Q In the situation of the last time you opined on a damages model in a securities case, what type of confounding information was present there?

MR. HAKLAY: Objection. Assumes facts not in evidence.

You can answer.

THE WITNESS: I don't recall. I mean, how about if I just give you an example.

So I don't know. Some -- some announcement comes out about the fraud. If there was no other information on that day, the stock price would go down. But on that day, at the same time, they announced they had made a billion dollars in profits, which was much more than they had ever earned before, you know, by a magnitude of 10.

That might be an example -- so I would expect -- my -- again, in this hypothetical, my expectation is that kind of announcement might, on its own, might lead to a price increase, whereas,

the information with regarding -- with regards to the alleged fraud might lead to a price decline.

And so those two things would be moving in a different direction.

BY MR. ISAJIW:

Q Okay.

Any other examples you can think of?

A I think that's probably the simplest, as I sit here today.

And, again, that was a hypothetical example. It wasn't an actual example from a case.

Q Okay.

Looking at the next subparagraph you state (as read and/or reflected:)

> Second, an inflation ribbon would be constructed, indicating how much artificial inflation caused by the alleged misrepresentations and omissions was in the price of FXCM securities on the date -- on each day during the Class Period.

What is "inflation," as you use it there?

A I think I define it somewhere else in my report.

So let's just go to a general case.

Inflation would be the difference between the actual price and the but-for price assuming some type of fraud because usually when we talk about inflation, it's in regards to fraud or alleged fraud. Or omissions, misstatements.

Q Can the level of inflation change over time?

A Yes.

Q How would you calculate inflation in your model over time?

A Without -- without all -- full discovery in this case, I can't opine on that.

Q I'm just wondering generally, high level, what are the mechanics?

A Again, it differs on a case-by-case basis.

Q If you would do that, do you believe you would use the same event study analysis that you have used in your current report?

A Unless -- I mean, it would depend on whether or not other facts became apparent during discovery.

Q Sitting here today, do you know of any changes you would need to make to the event study you used in your report?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: Well, I can't predict what facts will be discovered throughout the rest of discovery. So it would be speculative of me to talk about any changes that one might make to a hypothetical inflation area as of this date.

BY MR. ISAJIW:

Q So just from a mechanics perspective, once you conduct an event study on an alleged corrected disclosure, how do you translate that into damages throughout the Class Period?

A So can -- I'm not quite sure I understand the question.

THE WITNESS: Could you repeat the question, please.

(The record was read back as follows:

"Question: So just from a mechanics perspective, once you conduct an event study on an alleged corrected disclosure, how do you translate that into damages throughout the Class Period?")

THE WITNESS: You would adjust the

inflation ribbon to reflect that corrective disclosure.

BY MR. ISAJIW:

Q Would you adjust the inflation ribbon based on the number of corrective disclosures or the time period between the corrective disclosure and the purchase price?

I'm just trying -- what's the relationship between the corrective disclosure and adjusting the event ribbon -- I'm sorry, the inflation ribbon?

A At this point in time, it's an incomplete hypothetical. Again, I'm more than happy to provide an opinion about this if and when this case gets to -- discovery is completed and I am asked to opine upon loss causation and damages.

Q Sitting here today, you don't have an opinion on that then?

A I don't believe I have been asked to form an opinion as of this date. That was not what I was asked to do at this stage in litigation.

Q Jumping backwards to paragraph 15 of your report. And this is regarding the February 6, 2017 press release announcing the CFTC and NFA settlement.

You state (as read and/or reflected:)

As a result of this news, the value of FXCM common stock dropped over 68 percent (on a logarithmic basis) from $6.85 to $3.45 on February 17 -- I'm sorry -- February 7, 2017, on heavy trading volume (1.9 million shares of common stock, compared to a Class Period daily average of 0.15 million shares of common stock.)

Did I read that correctly?

A That is correct.

Q Can you define for me what a logarithmic basis is?

A So I use a log return as opposed to the normal return.

Q What is a log return?

A It's based on -- it's -- do you want me to write down on a piece of paper what it might look like?

Q I would like you to describe just conceptually what it is.

A Well, okay. What's your understand -- sorry.

If your understanding of a return -- I

don't -- wait.

I may describe it in my report with more precision than what I'm going to give you. I mean, it's literally just a different way to calculate the return, but ...

So let's take an example. Let's do an example.

So yesterday the price of a stock was $5. Today it's $10. So the return over that period -- the way people would commonly -- I better write these numbers down just so I --

All right.

So let's say the price is $10 today -- or yesterday and it's $5 today.

So normally what you would do in calculating the return is you would take 5 minus 10 and then divide it by 10; whereas, when you're calculating log returns, you would take the natural log of 5 divided by 10.

Q Okay.

Going back to paragraph 15, the trading price change that you describe there equates to a drop of about $3.40 per share; is that correct?

A $3.40 -- yeah, it appears that's right.

Q Do you attribute 100 percent of this

decline to the information that was disclosed in the CFTC press release?

A I'm not sure I have been asked to opine on that at this point.

Q At this point, do you have any opinion on that?

A As I sit here, it certainly was a contributing factor, but beyond that, I don't -- I haven't formed an opinion.

Q So you haven't formed an opinion whether or not 100 percent of this decline was attributable to the information in the CFTC press release?

MR. HAKLAY: Objection. Asked and answered.

THE WITNESS: I have not been asked to opine on that at this point in time.

BY MR. ISAJIW:

Q Is it your opinion that all of this decline would have been caused by the market learning -- the alleged truth about the FXCM's relationship with Effex?

MR. HAKLAY: Objection. Same question. Asked and answered.

THE WITNESS: Same answer.

///

BY MR. ISAJIW:

Q And that answer is you do not -- sitting here today, you have not formed an opinion?

THE WITNESS: Could you read back my answer from the previous question.

(The record was read back as follows:

"Answer: As I sit here, it certainly was a contributing factor, but beyond that, I don't -- I haven't formed an opinion.")

THE WITNESS: Yeah. Same answer.

I believe was there also something about I have not been asked to provide that opinion at this point in time?

THE REPORTER: (No audible response.)

THE WITNESS: There may have been something about that as well.

BY MR. ISAJIW:

Q Would you agree that if some of the decline in FX- -- FXCM's stock on February 6 and 7, 2017, was caused by other factors, that it would not be appropriate to include those losses in your damage calculation?

A I don't understand your incomplete

hypothetical.

Q When conducting a damages analysis, if some of the decline in the stock price was related to factors, other than the alleged fraud, would it be appropriate to include the losses in the damage calculation?

A What do you mean by "losses"?

So now you're saying that there are losses? Do you mean a price decline attributable to non-fraud-related information?

I'm sorry. I don't -- I just don't understand the question. Let's leave it at that.

Q If a -- if you determine in a damages analysis that a stock price declines and some of the decline is related to the alleged fraud in a case and some of the decline is related to other factors, in your opinion, is it appropriate to include all of the decline in your damages analysis?

A So it would depend upon the situation, but at this stage with regards to this specific litigation, that's not something I have been asked to do.

Q Can you think of a situation where it would be appropriate to attribute the loss -- I'm sorry -- the decline in the stock price attributable to

non-fraud actions in a loss calculation or damages calculation?

A Can I think -- wait.

In your hypothetical, there's other factors, other news comes out on that day. It's an incomplete hypothetical.

Q Let's control for all factors in the hypothetical, other than -- you know what.

I withdraw the question.

What is your understanding of FXCM and its business?

A My understanding is that -- and I'm reading from paragraph 10 now of my report (as read and/or reflected:)

> FXCM described itself as "an online provider of foreign exchange trading and related services" headquartered in New York, New York. The Company provided "access to over-the-counter ('OTC') FX markets through [its] proprietary technology platform." During the Class Period, the Company's platform sought to provide its customers "the best price

quotations" on currency pairs from various market makers, global banks, and financial institutions.

Q Okay.

Did you draft that section of your report?

A I believe so.

Q And what information did you rely on in drafting that section of your report?

A Let's see, I believe it was the -- at least one of the 10-Ks.

Well, certainly at least some of -- one of the financial statements.

Q What is your understanding of the term "No Dealing Desk"?

A Well, my understanding is that in this type of model a customer executes a trade -- and again, I'm reading now from paragraph 11. (As read and/or reflected:)

"Customer executes a trade on the best price quotation offered by [FXCM's] FX market makers," with FXCM acting as a credit intermediary while "simultaneously entering into offsetting trades with both the customer and the FX

market maker."

Q Is that your complete understanding of the No Dealing Desk?

A I believe that's an accurate description of my understanding.

Q Looking at the footnotes of your report, is that understanding based on a combination of FXCM form 10-Ks and the second amended consolidated securities class action complaint in this case?

(Reporter clarification.)

MR. HAKLAY: Objection. Misstates what's written in that paragraph, as you're referring to it.

THE WITNESS: I believe that's informed my opinion about it.

BY MR. ISAJIW:

Q Okay.

Do you have a view as to whether or not FXCM's No Dealing Desk model was viewed as preferred or even relevant to its customers?

A As I sit here today, no.

Q Do you believe FXCM's -- do you have a view as to whether or not FXCM's No Dealing Desk model was relevant to its shareholders?

A As I sit here today, I do not.

Q What about its noteholders?
A Same answer.
Q Do you have any understanding as to whether or not the relationship between FXCM and Effex changed over the Class Period?
I'm sorry. Let me ask -- let me take one step back.
What is your understanding of Effex?
Effex is -- I want to make sure I spell it correctly. It's E-F-F-E-X.
A Yeah, I'm trying to ...
Right.
So my understanding, I guess, is based on my reading of the second amended complaint.
Q Okay.
Other than what's in the second amended complaint, did you do any independent analysis about the relationship between FXCM and Effex?
A Again, I don't remember if it was mentioned in some of the press releases around the corrective disclosure. So that -- if you have those, I would be happy to take a look at those and refresh my memory.
But I think to the extent that I've looked at it, it would be this (indicating), and then,

again, I don't have a recollection of whether or not I've seen it somewhere else.

MR. HAKLAY: Just for the record, when he said "this," he put his hand on the second amended complaint.

THE WITNESS: Second amended complaint, Exhibit 6.

BY MR. ISAJIW:

Q Are you familiar with the business model of any other FX brokerage firms?

A What do you mean by "business model"?

Q The way they operate their trading activity in connection with -- in relation to their customers.

Let me ask it -- we just discussed a No Dealing Desk and you read from a portion of your report about what you believe the No Dealing Desk is.

Are you aware of any other FX trading entities that have a No Dealing Desk model?

A Am I aware?

Well, again, I -- I don't know how to answer that question. I mean, as I sit here today, I can't answer your question.

Q Okay.

So as you sit here today, you do not know one way or the other whether or not the No Dealing Desk model was employed by other FX trading entities?

A That is correct.

Q I want to just jump back real quick to the damage, singular, section of your report.

A Oh, it may -- it probably should say damages, but you --

Q And this is focusing on paragraph, I believe, 159?

A 159.

Q And subsection "ii" where we were discussing earlier about the inflation ribbon.

A Okay.

Q Okay.

A few sentences down below when we discussed earlier, it's six sentences down (as read and/or reflected:)

> Construction -- construction of the inflation ribbon generally employs event study analysis, combined with widely used and generally accepted valuation tools and models.

Did I read that correctly?

A Yes.

Q Can you describe what the "widely used and generally accepted valuation tools and models" are?

A Yeah.

I would refer to my answer before when we were discussing subpoint "i" about (as read and/or reflected):

> First, valuation tools, which would include event study analysis, such as that described herein, and potentially other empirical analyses if necessary, would be used to establish that the disclosure(s) correcting the alleged misrepresentations and omissions, caused the price of FXCM securities to fall.

So when you asked me that question before, I would refer you to that same answer in respect to this question that you've just asked me.

That answer would not change.

Q Okay.

So there's no additional valuation tools or models that you can think of that you did not

mention earlier today?

A I'm not sure that that's correct, but ...

Q If it's not, please let me know what the additional tools are.

A Well, again, let's -- I refer you to my previous answer.

I believe I said that the tools I would use are case specific. I believe I cited one example for you of a type of analysis that -- what I would do.

So I will rely on that answer that I gave previously.

Q Do these valuation tools and models require data?

A It's possible that they do.

Q What sort of data would you need to utilize the valuation tools to calculate the inflation at the start of the Class Period?

A What -- I'm sorry.

THE WITNESS: Could you repeat that question.

(The record was read back as follows:

"Question: What sort of data would you need to utilize the

valuation tools to calculate the inflation at the start of the Class Period?")

BY MR. ISAJIW:

Q And it probably should have been "with the valuation tools" in that question.

A Yeah. At this point, it would be speculative of me for me to opine upon that or discuss that.

Q What types of datasets have you relied on in the past?

A It differs from case to case.

Q Can you give me some examples of the datasets in any case?

A Sure.

I might use datasets from Compustat or datasets from Bloomberg. That would be two examples.

Q And what would the Compustat data show you?

A You know, the Compustat, I don't remember. I think Compustat was bought. Typically, firm financial data.

As I sit here today, I'm speculating because I believe that they underwent a transaction.

So when I used Compustat 30 years ago, I

probably -- like I said, again, I believe it has been acquired, and so it is not proper for me to say Compustat.

Q And you also mentioned datasets from Bloomberg.

What type of data did you receive from Bloomberg?

A Well, data from Bloomberg. Again, it depends on the case. I don't remember off the top of my head.

You just asked me for examples of what other data I might or what other avenues of data I might look at. And so I was responding to that question.

Q Do you have any view of what type of data you would want to review in connection with this case if you're asked to do a damage calculation?

A Not as I sit here today.

MR. ISAJIW: I think now would be a good time for us to take a quick break just so I can go -- so I can go see if we can shorten things up.

Is that okay with everybody?

MR. HAKLAY: Sure. It's your deposition.

THE VIDEOGRAPHER: We are going off the record.

The time is 5:38 p.m.

(Recess was taken at 5:38 p.m.

until 5:47 p.m.}

THE VIDEOGRAPHER: We are back on the record.

The time is 5:47 p.m.

BY MR. ISAJIW:

Q Dr. Werner, earlier when we were talking about the framework advantages set forth in your report, you -- we were talking about various valuation tools. And you said it would be speculative as to what data you would need in connection with doing an analysis pursuant to those tools at this point.

Sitting here today, can you be sure that the data exists that will allow you to calculate inflation in this case if you were asked to do so?

A I would see no reason why that data wouldn't exist.

Q And what kind of data do you believe that would be?

A Well, again, I just -- I don't know. It would be speculative of me at this point in time, but I don't -- in doing damage analyses, I can't ever remember coming across a case where I couldn't

get the data I needed.

I mean, it can always be subpoenaed. I don't -- so I don't know.

In your -- it's an incomplete hypothetical and not anything I've thought of at this point in the day.

Q So if it's not something you've thought about at this point, you can't be sure one way or the other?

MR. HAKLAY: Objection. Asked and answered.

Please answer.

THE WITNESS: In your hypothetical example, you're asking me do I know as of this date -- it's not anything I've thought about.

BY MR. ISAJIW:

Q Okay.

A That's the most accurate answer I can give you at this point in the day.

Q Okay.

MR. ISAJIW: I think with that, I have no more questions.

So I thank you for your time.

MR. HAKLAY: I was joking about the 59 minutes.

I have nothing.

MR. ISAJIW: I figured you were.

THE VIDEOGRAPHER: This is Media 1. And this marks the conclusion of today's deposition of Dr. Adam Werner, Ph.D.

We're going off the record.

The time is 5:49 p.m.

(Whereupon, at 5:49 p.m., the deposition of ADAM WERNER, Ph.D., was concluded.)

---oOo---

ACKNOWLEDGMENT OF DEPONENT

I, ADAM WERNER, PH.D., do hereby certify that I have read the foregoing transcript of my testimony taken on 2/28/2020, and further certify that it is a true and accurate record of my testimony (with the exception of the corrections listed below):

Page	Line	Correction

_____

ADAM WERNER, PH.D.

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____, 20___.

_____ _____

(NOTARY PUBLIC) MY COMMISSION EXPIRES:

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss.

I, Reagan Evans, RPR, RMR, CRR, CCRR, CLR, CRC, CSR No. 8176, in and for the State of California, do hereby certify:

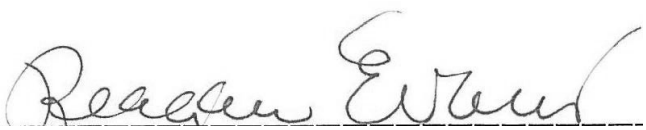
That prior to being examined, the witness named in the foregoing deposition was by me duly sworn to testify to the truth, the whole truth, and nothing but the truth;

That said deposition was taken down by me in shorthand at the time and place therein named and thereafter reduced to typewriting under my direction, and the same is a true, correct, and complete transcript of said proceedings;

That if the foregoing pertains to the original transcript of a deposition in a federal case, before completion of the proceedings, review of the transcript { } was { } was not required.

I further certify that I am not interested in the event of the action.

Witness my hand this 3rd day of March, 2020.



Certified Shorthand Reporter
for the State of California

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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