

Exhibit 7

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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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SECURITIES AND EXCHANGE
COMMISSION,

Plaintiff,
Case No.
against 20-cv-1(AT)(SN)

RIPPLE LABS, INC., BRADLEY
GARLINGHOUSE, and CHRISTIAN A.
LARSEN,

Defendants.
-----X

VIDEOTAPED DEPOSITION OF [REDACTED], Ph.D.

New York, New York

Friday, February 18, 2022

Reported by

JEFFREY BENZ, CRR, RMR

JOB NO. 206137

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February 18, 2022

9:16 a.m.

Videotaped Deposition of [REDACTED], Ph.D.,
taken at Debevoise & Plimpton LLP, 919 Third
Avenue, New York, New York, before Jeffrey Benz, a
Certified Realtime Reporter, Registered Merit
Reporter and Notary Public of the State of New
York.

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A P P E A R A N C E S:

FOR THE PLAINTIFF:

U.S. SECURITIES AND EXCHANGE COMMISSION

175 West Jackson Boulevard

Chicago, Illinois 60604

BY: ROBERT MOYE, ESQ.

-and-

200 Vesey Street

New York, New York 10281

BY: MARK SYLVESTER, ESQ.

BENJAMIN HANAUER, ESQ (remotely)

DAPHNA WAXMAN, ESQ. (remotely)

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A P P E A R A N C E S: (Ctd.)

FOR DEFENDANT RIPPLE LABS:

KELLOGG, HANSEN, TODD, FIGEL & FREDERICK

1615 M Street, NW

Washington, District of Columbia 20036

BY: REID FIGEL, ESQ.

CLAYTON MASTERMAN, ESQ.

KYLIE KIM, ESQ.

COLLIN WHITE, ESQ. (remotely)

BETHAN JONES, ESQ. (remotely)

GAVAN GIDEON, ESQ. (remotely)

ELIANA PFEFFER, ESQ. (remotely)

JUSTIN BERG, ESQ. (remotely)

-and-

DEBEVOISE & PLIMPTON

919 Third Avenue

New York, New York 10022

BY: DANIEL MARCUS, ESQ. (remotely)

-and-

801 Pennsylvania Avenue NW

Washington, District of Columbia 20004

BY: MATT HIRSCH, ESQ.

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A P P E A R A N C E S: (Ctd.)

FOR DEFENDANT BRADLEY GARLINGHOUSE:

CLEARY GOTTlieb STEEN & HAMILTON

2112 Pennsylvania Avenue, NW

Washington, District of Columbia 20037

BY: JORGE BONILLA LOPEZ, ESQ. (remotely)

FOR DEFENDANT CHRISTIAN A. LARSEN:

PAUL, WEISS, RIFKIND, WHARTON & GARRISON

1285 Avenue of the Americas

New York, New York 10019

BY: MARTIN FLUMENBAUM , ESQ. (remotely)

EMILY GLAVIN, ESQ. (remotely)

ALSO PRESENT:

MATTHEW CHIN-QUEE, Videographer

DEBORAH McCRIMMON, Ripple Labs, Inc. (remotely)

KYLE E. CHERMAK, Debevoise & Plimpton (remotely)

1 [REDACTED]
2 THE VIDEOGRAPHER: We're now on the
3 record. This is the start of Tape Number 1
4 of the videotape deposition of [REDACTED],
5 in the matter Securities and Exchange
6 Commission v. Ripple Labs, Inc., et al., in
7 the United States District Court, Southern
8 District of New York, Number 20-CV-1
9 (AT)(SN).

10 The deposition's being held at
11 919 Third Avenue, New York, New York, on
12 February 18, 2022, at approximately
13 9:16 a.m.

14 My name is Matthew Chin-Quee, from
15 TSG Reporting, and I'm the legal video
16 specialist. The court reporter is Jeffrey
17 Benz, in association with TSG Reporting.

18 Will counsel please introduce
19 yourselves.

20 MR. FIGEL: Reid Figel, with Clayton
21 Masterman and Kylie Kim, representing
22 defendant, Ripple Labs, Incorporated.

23 MR. MOYE: Robert Moye and Mark
24 Sylvester here for the SEC.

25 MR. FIGEL: And we have an agreement

1 [REDACTED]
2 that counsel who's participating by video
3 conference, appearances are already noted
4 for the court reporter record, and the --
5 deemed included in the video record.

6 THE VIDEOGRAPHER: Thank you.

7 Will the court reporter please swear
8 in the witness.

9 [REDACTED], Ph.D.,

10 called as a witness, having been first
11 duly sworn by Jeffrey Benz, a Notary
12 Public within and for the State of New
13 York, was examined and testified as
14 follows:

15 EXAMINATION BY MR. FIGEL:

16 Q. Good morning. Could you state your
17 name for the record, please.

18 A. [REDACTED].

19 Q. And, Mr. [REDACTED], do you prefer to be
20 called Mr. [REDACTED] or Dr. [REDACTED]?

21 A. I suppose for this setting, why don't
22 we say Dr. [REDACTED].

23 Q. You understand you're testifying under
24 the same oath that you would take if you were
25 testifying in a courtroom --

1



2 A. I understand.

3 Q. And you also understand that the

4 two reports that you submitted in this

5 litigation are also submitted under oath?

6 A. I understand.

7 Q. Any reason today that you can't give

8 your best truthful and accurate testimony?

9 A. No reason.

10 Q. Have you ever been deposed before?

11 A. Yes, I have.

12 Q. How many times?

13 A. One time.

14 Q. In what matter?

15 A. SEC versus Rio Tinto.

16 Q. And have you ever testified in any

17 other proceeding in any context?

18 A. No. I've submitted written testimony

19 in that matter, I've been deposed, but that's

20 the extent of my testimony experience.

21 Q. No personal litigation in which you

22 were a testifying witness?

23 A. Correct.

24 Q. You submitted both an expert report

25 and a rebuttal report in connection with this

1 [REDACTED]
2 case. Is that correct?

3 A. Yes, that's correct.

4 Q. I'd like to show you what's been
5 marked as -- we'll start with Exhibit 1.

6 (Amended expert report of [REDACTED]
7 was marked Exhibit 1 for identification, as
8 of this date.)

9 MR. FIGEL: This is for the court
10 reporter.

11 THE COURT REPORTER: That's very nice
12 but it's not necessary.

13 MR. FIGEL: All right.

14 MR. FLUMENBAUM: Excuse me. It's hard
15 to hear Dr. [REDACTED], if he could speak up,
16 please.

17 THE WITNESS: Is this mic doing
18 anything?

19 THE VIDEOGRAPHER: It's just for the
20 video.

21 MR. FIGEL: Why don't we --

22 THE VIDEOGRAPHER: Maybe I can put
23 that --

24 THE WITNESS: Is this better?

25 MR. FIGEL: Mr. Flumenbaum, are you

1 [REDACTED]
2 able to hear Dr. [REDACTED] now?

3 MR. FLUMENBAUM: Is he talking now?

4 THE WITNESS: Testing, testing. Is
5 this satisfactory?

6 MR. FLUMENBAUM: Thank you.

7 Q. I show you what's been marked as [REDACTED]
8 Exhibit 1. Do you recognize that document?

9 A. I do. It appears to be my opening
10 report in this matter.

11 Q. And does Exhibit 1 set forth all the
12 affirmative opinions you intend to offer in this
13 case?

14 A. I believe so, yes.

15 Q. And does it contain the bases for all
16 of the opinions that you intend to offer?

17 A. Well, I have opinions also expressed
18 in my rebuttal report.

19 Q. We'll get to that. I'm just talking
20 about in your open report.

21 A. My opening report represents the
22 opinions of my opening report.

23 Q. And you understand that that Exhibit 1
24 is also submitted under penalty of perjury,
25 correct?

1 [REDACTED]

2 A. Yes, I understand.

3 Q. And nothing was omitted from that
4 report that you deemed to be necessary to
5 support the opinions that you express in that
6 report; is that correct?

7 A. I believe that's correct. Yes.

8 Q. I'd like to now show you what we'll
9 mark as [REDACTED] Exhibit 2.

10 (Rebuttal report of [REDACTED] was
11 marked Exhibit 2 for identification, as of
12 this date.)

13 Q. Do you recognize this document,
14 Dr. [REDACTED]?

15 A. I do. This appears to be my rebuttal
16 report in this matter.

17 Q. And does your rebuttal report include
18 all the rebuttal opinions you intend to offer in
19 connection with this litigation?

20 A. Well, I have been directed by the SEC
21 to do some additional analysis in response to
22 the reports of Dr. Marais and Professor Fischel.
23 Those are not yet contained in this rebuttal
24 report.

25 MR. FIGEL: Let me inquire of

1 [REDACTED]
2 Mr. Moye. Do you intend to seek leave of
3 the court to submit additional expert
4 reports from Dr. [REDACTED]?

5 MR. MOYE: The plan, what we expect to
6 do is to supplement within the expert
7 discovery period, so in other words, the
8 few additional comments that we believe are
9 appropriate to make based on the rebuttal
10 report will be included in a very short
11 supplement under 26(e).

12 MR. FIGEL: All right. Just so the
13 record's clear, we have not yet been
14 provided with a copy of any supplemental
15 reports of Dr. [REDACTED]. I don't think it's
16 fair for us to be expected to examine him
17 based on his prognostication about what may
18 be included in those reports so we --

19 MR. MOYE: We agree.

20 MR. FIGEL: -- we reserve our rights
21 to call Dr. [REDACTED] back in the event you
22 submit a supplemental report.

23 MR. MOYE: We agree, and we'll discuss
24 that, and we'll be happy to make him
25 available for a reasonable amount of time.

1

2 Q. With respect to your rebuttal report,
3 Dr. [REDACTED], as you sit here today, do you have any
4 opinions about the matters contained in your
5 rebuttal report, other than what's set forth in
6 the report?

7 A. No. The rebuttal report stands
8 complete as of today.

9 Q. Okay. And your rebuttal report
10 includes all the facts and data that you
11 considered in support of the opinions you
12 expressed in Exhibit 2, correct?

13 A. I believe so, yes.

14 Q. All right. Other than --

15 MR. FIGEL: And, Mr. Moye, what I
16 propose that we do is we will treat
17 whatever engagement that he is working on
18 now as postdating the dates of his
19 two reports.

20 MR. MOYE: Sure.

21 MR. FIGEL: So none of my questions
22 are going to go to any other opinions you
23 may be working on now. Fair enough?

24 But we reserve our rights with respect
25 to any supplemental or subsequent opinions

1 [REDACTED]
2 you provide.

3 Q. Other than what's set forth in
4 Exhibits 1 and 2, and other than whatever you
5 may be working on prospectively, were you asked
6 to analyze any issues in this case that are not
7 discussed or reflected in either Exhibit 1 or
8 Exhibit 2?

9 MR. MOYE: So I'm going to object to
10 that question to the extent that it would
11 require Dr. [REDACTED] to disclose any
12 conversations he had with counsel for the
13 SEC because that would infringe on work
14 product.

15 Q. Do you understand Mr. Moye's
16 instruction?

17 A. I believe so.

18 Q. All right. Without revealing any
19 communications you may have had with the SEC, in
20 the course of your engagement for this matter,
21 have you or people working under your direction
22 performed any work that's not reflected in
23 either Exhibit 1 or Exhibit 2?

24 A. That's a very broad question, have
25 they done any work.

1 [REDACTED]
2 I -- that's so broad that I don't
3 think I can -- I can -- I can say no, that
4 nobody did any work.

5 Q. Tell me what work you're aware of, as
6 you sit here today, that is not -- in the -- in
7 the context of this engagement, in this
8 litigation, that's not reflected in Exhibits 1
9 and 2.

10 A. I can't think of any examples. But if
11 you're asking me to testify whether somebody in
12 my support team may have done something, they
13 may have done something, but I'm not aware, I
14 cannot -- sitting here today, I cannot think of
15 any work that was done that's not reflected in
16 either of these two reports, setting aside
17 ongoing work.

18 Q. Are you aware of any models that
19 anyone working under your direction in this case
20 tested or considered in connection with the
21 preparation of your report?

22 MR. MOYE: Same objection as before.

23 Please make sure your answer does not
24 reveal any communications that you've had
25 with SEC attorneys about this matter.

1



2 A. Again, that's so very broad.

3 I expect that in the ordinary course
4 of doing research, we may have considered some
5 alternative parameterizations of some
6 econometric models.

7 As I say, I -- that's -- that's -- I
8 consider that routine and normal and ordinary.

9 So I'm not going to say that -- that
10 there are no alternative models which may have
11 been run at any point.

12 Q. Are you aware of any?

13 A. Well, as an example, when considering
14 the estimation period behind the econometric
15 models, we settled on a 180-day window ending
16 three days prior to an event date to be tested.
17 We may have considered models ending one day
18 prior to the event date being tested. We may
19 have considered models ending five days prior.

20 Again, that's -- that's -- the
21 ordinary -- the ordinary course of doing
22 research. That -- that's one example that I can
23 think of. But I --

24 Q. Other than the endpoint for the
25 periods tested, can you think of any other

1 [REDACTED]
2 models or regressions or consideration of events
3 or categorizations that you or your staff
4 considered that's not reflected in the report?

5 MR. MOYE: Same objection as before.

6 A. We may have experimented with
7 volume-weighted indices at one point.

8 But that would be -- that's --
9 that's -- sitting here today, that's about all I
10 can remember, is something -- an alternative we
11 may have considered that is not in these
12 reports.

13 Q. Did you consider any other estimation
14 models other than the ones set forth in your
15 opening report?

16 MR. MOYE: Same objection, work
17 product.

18 A. Again, beyond sort of the ordinary
19 flow as we've already discussed, no. I can't
20 remember any.

21 Q. When you said that you -- just a
22 second.

23 When you say you experimented with
24 volume-weighted indices, what do you mean?

25 A. Well, we have data on -- we have

1 [REDACTED]
2 pricing data for several digital tokens. From
3 those pricing data, we can construct returns.
4 And one can build an index of those returns, in
5 a number of different ways.

6 Two easy ways or two common ways are
7 what's called an equal-weighted index, where one
8 simply takes the simple average return across
9 different tokens. And another one would be some
10 sort of volume-weighted index, where those
11 digital tokens that have, for example, a larger
12 market cap get greater weight in the
13 construction of that index.

14 In the case of digital tokens, bitcoin
15 is so overwhelmingly dominant in a volume sense
16 that, as a practical matter, there's very little
17 difference between a volume-weighted index and
18 simply bitcoin.

19 So after some normal experimentation,
20 I decided that there was -- there was no utility
21 in a volume-weighted index in the context of
22 these kinds of assets that we're discussing
23 because bitcoin just dominates everything.

24 So we settled, I think, fairly quickly
25 on considering just equal-weighted indices.

1



2 Q. If I understand your answer, in
3 substance, what you're saying is that if you
4 look at the dollar volume of cryptocurrencies
5 traded on various exchanges, the vast majority
6 of that is dominated by bitcoin, correct?

7 A. Correct.

8 Q. And that the amounts of both volume
9 and, call it dollar value of Ether lumens is
10 trivial in comparison to the information that's
11 available about bitcoin? Correct?

12 A. Well, I mean, "trivial" is a word.
13 Again, just as an arithmetic fact, a
14 volume-weighted index, again, just
15 arithmetically, is simply not going to be very
16 different from bitcoin's return.

17 Q. And did you elect to use
18 equal-weighted indices as opposed to
19 volume-weighted indices or bitcoin,
20 representation-weighted indices, because the
21 weighted indices undermined the force of the
22 conclusions that you're expected -- that you
23 have expressed in your report?

24 A. No, not at all.

25 We have one -- some of the models that

1 [REDACTED]
2 are here are based only on bitcoin. Others have
3 bitcoin plus Ether. Some have bitcoin plus
4 Ether plus lumens.

5 And then when it came time to add some
6 of the other tokens that -- whose history begins
7 much later, at that point, we -- I switched to
8 an equal-weighted index. But there are results
9 here, which are -- which consider only bitcoin,
10 for example, as an alternative driver.

11 So I -- I simply felt that a
12 volume-weighted index was effectively redundant,
13 to a bitcoin-based model.

14 Q. All right. Now, if you turn to
15 paragraph 11 on page 2 of Exhibit 1.

16 You'll see that you reserve the right
17 to modify or to supplement this report?

18 A. Yes. I see that.

19 Q. Just so the record is clear, is there
20 anything today that you would like to modify or
21 supplement about the information contained in
22 Exhibit 1?

23 A. Well, as we've discussed, I'm -- I am
24 continuing to work on a supplemental analysis.

25 Q. Well, a -- are you finished with your

1 
2 answer?

3 A. Yes.

4 Q. As I understood your prior testimony,
5 the supplemental analysis went to rebuttal
6 issues. Do you intend to provide a supplemental
7 analysis to any of the opinions or data or other
8 information that's set forth in your opening
9 report, Exhibit 1?

10 A. The -- if I -- if I had to
11 characterize it, I suppose the more helpful
12 characterization is that it is a supplement to
13 Exhibit 1 in the sense that it is primarily
14 addressing issues that were raised in some
15 rebuttal reports which were written in response
16 to Exhibit 1.

17 That's why I say the rebuttal -- it's
18 a rebuttal analysis in a sense. But if -- if I
19 have to characterize and -- and pick one and say
20 whether I'm supplementing my first report or my
21 second report, I suppose the better
22 characterization is that I am supplementing the
23 first report.

24 Q. And let's make sure that we're making
25 a clear record here. When you say "supplement,"

1 [REDACTED]
2 I want to make sure that -- withdrawn.

3 With respect to whatever work you're
4 doing that may lead to additional reports, is
5 there anything that is in Exhibit 1 that, as you
6 sit here today, you believe is inaccurate or
7 incomplete?

8 A. No, not at all.

9 Q. All right. Same question with respect
10 to Exhibit 2. Is there -- putting aside
11 whatever it is you're doing prospectively, is
12 there anything in Exhibit 2, as you sit here
13 today, that you believe is inaccurate or
14 incomplete?

15 A. I don't believe so, no.

16 Q. According to your resume, you spent a
17 lot of time working in the private sector at
18 [REDACTED]; is that correct?

19 A. I worked at [REDACTED] for approximately
20 15 years. I think it was a little over
21 15 years.

22 Q. Why did you decide to leave [REDACTED]?

23 A. To pursue other career -- a different
24 career direction.

25 Q. And what was that different career

1 [REDACTED]
2 direction that you decided to pursue when you
3 left [REDACTED]?

4 A. I decided to become an economic
5 consultant.

6 Q. How long have you been an economic
7 consultant?

8 A. I joined my first consultancy, I
9 believe, in [REDACTED].

10 Q. [REDACTED]?

11 A. [REDACTED].

12 Q. And why did you leave your prior
13 consulting firm [REDACTED]?

14 A. Discussions with [REDACTED] and decided
15 that it would be a -- a good environment to --
16 to join.

17 Q. In connection with why your current
18 employment [REDACTED], obviously the
19 SEC is one of your clients, correct?

20 A. The SEC has engaged me, yes.

21 Q. Have they engaged you on any other
22 litigation or matter or investigation other than
23 this one?

24 A. Yes, they have.

25 Q. Approximately how many other

1 [REDACTED]
2 engagements do you have with the SEC with
3 respect to litigation other than this
4 litigation?

5 A. I have two other engagements that --
6 that I consider litigation engagements, in
7 addition to this one.

8 MR. FIGEL: Mr. Moye, just so we can
9 avoid a spat, are those engagements
10 confidential?

11 MR. MOYE: So [REDACTED] obviously is
12 not.

13 I don't believe the others are public.

14 A. Nothing has been -- I haven't filed
15 any reports in the other one.

16 MR. MOYE: So until the filing of the
17 report, we would consider those
18 confidential.

19 Q. Do you have any clients or are you
20 doing work for any entity other than the
21 Securities and Exchange Commission, currently?

22 A. I -- I support other experts at
23 [REDACTED] in helping them to prepare reports and
24 conduct analyses for a variety of clients.

25 As -- as an expert witness, I'm not

1 [REDACTED]
2 currently doing work for any entity besides the
3 SEC.

4 Q. Have you ever done any work with you
5 as the expert for any entity while employed at
6 [REDACTED] other than the SEC?

7 A. Serving as the expert, no.

8 Q. So the only person or entity that's
9 retained you as an expert since you've joined
10 [REDACTED] is the SEC. Correct?

11 A. That is correct.


12 Q. What is the area of expertise that you
13 claim you have that you believe allows you to
14 offer expert testimony in this case?

15 A. Well, I have a Ph.D. in economics,
16 with focus on [REDACTED].

17 I've been a practicing economist for
18 20-some years, focused on -- primarily on
19 empirical economic research. I've conducted
20 event studies as part of my employment. I've
21 testified on event studies on one occasion.

22 And I believe I have adequate
23 credentials to offer opinions in this matter.

24 Q. Okay. Other than in the field of
25 economics and econometrics, do you claim any

1 
2 expertise that would allow you to express an
3 opinion, an expert opinion, in this case?

4 A. I --

5 MR. MOYE: I'm sorry. Can I clarify
6 that question? Did you mention statistics
7 or just econometrics?

8 In your question.

9 MR. FIGEL: My question -- wait a
10 second.

11 -- was limited to the field of
12 economics and econometrics.

13 MR. MOYE: Okay. I'm going to object
14 to the extent that you mischaracterize his
15 prior testimony.

16 A. Well, as I define the words "economics
17 and econometrics," which would include
18 statistics, my opinions -- I would characterize
19 my opinions as being offered within that broad
20 umbrella. I'm not offering, for example, legal
21 opinions, and I -- I'm not a software engineer.

22 Q. Do you claim to be an expert in
23 statistics?

24 A. I am an expert in econometrics, which
25 is the application of statistics to economic

1 [REDACTED]
2 data and economic problems.

3 Q. You don't consider statistics to be a
4 separate discipline for which one could or could
5 not be qualified from being an economist or an
6 econometrician?

7 MR. MOYE: Objection. Argumentative.

8 A. I recognize that one can get a degree
9 purely in statistics.

10 Q. And you don't have one, correct?

11 A. I -- I do not have a degree purely in
12 statistics.

13 Q. And you never practiced as a
14 statistician, have you?

15 A. Statistics is integral to the work
16 that I've done professionally for 20 years.
17 I've described myself as an economist. I do not
18 describe myself as a statistician, but
19 statistics is, as I said, an integral part of
20 the work I've been doing professionally for
21 20 years.

22 Q. So the answer to my question is no,
23 you've never practiced as a statistician,
24 correct?

25 A. The only way I can address that

1 [REDACTED]
2 question is to say I haven't personally
3 described myself as a statistician.

4 However, in my professional work, I
5 routinely use statistics as part of my work. So
6 in the sense that my practical work requires and
7 utilizes statistics, the answer's yes.

8 Q. Have you ever held an academic
9 position?

10 A. No, I have not.

11 Q. Now, you said you've only testified
12 once in any proceeding in -- in litigation
13 anywhere during your lifetime. Correct?

14 A. I believe that's true.

15 Q. And have you ever been found qualified
16 by a court to offer expert opinion testimony?

17 MR. MOYE: Objection to the extent
18 you're asking him for a legal opinion.

19 A. All I can say is that my testimony,
20 or -- no part of my testimony has ever been
21 disqualified.

22 Q. I'm asking a different question. I'm
23 asking the question whether a court has ever
24 found you competent and qualified to offer
25 expert opinion testimony.

1 [REDACTED]
2 MR. MOYE: It's the same objection.

3 A. I -- I don't know how to answer the
4 question. If -- if you're asking have I ever
5 received a letter from the court saying,
6 Congratulations, you're qualified, no, I
7 haven't.

8 I have -- I've submitted written
9 testimony, I've submitted deposition testimony.
10 The matter is still pending and outstanding.
11 That's all I can say.

12 Q. Has Judge Torres in the Rio --
13 Judge Torres is the presiding judge in the
14 Rio Tinto case, correct?

15 A. I'll take your word for it. I'm not
16 very good with names.

17 Q. To your knowledge, have you been
18 qualified to offer expert opinion testimony in
19 the Rio Tinto case?

20 MR. MOYE: Same objection as before.

21 A. I have not -- all I can say is I have
22 not been disqualified. My -- my testimony is
23 still pending. The matter is still pending.
24 The trial has not yet been scheduled. As far as
25 I know, I will be testifying at trial.

1 [REDACTED]
2 Q. So to your knowledge, if you're found
3 to be competent and qualified to offer an
4 opinion in this case, it will be the first time,
5 to your knowledge, that you've ever been
6 qualified as an expert, correct?

7 MR. MOYE: Objection. Argumentative
8 and vague.

9 A. I -- I apologize, Mr. Figel. I mean,
10 I am -- I've only been doing consulting for a
11 couple of years. If -- if there is some
12 affirmative step in which somebody says, You're
13 qualified, that affirmative step has not yet
14 happened.

15 Based on the schedule, it's more
16 likely to happen first in the Rio Tinto matter,
17 simply because that's so much further along than
18 in this matter.

19 Q. And isn't it true that your testimony
20 in the Rio Tinto matter is subject to a
21 disqualification motion?

22 A. Yes. They've filed motions against
23 me, and I believe -- I think we filed motions
24 against them, and those motions are still
25 pending.

1 [REDACTED]
2 Q. So it hasn't been decided whether
3 you're qualified to give opinion testimony in
4 the Rio Tinto case, correct?

5 MR. MOYE: Objection to the extent
6 you're asking for a specific legal opinion.

7 A. To the best of my knowledge, the judge
8 has not ruled on any of those motions.

9 Q. What academic background, if any, do
10 you have about the cryptocurrency markets?

11 A. Cryptocurrencies were not a subject of
12 my formal academic training. I would say they
13 didn't exist yet.

14 Q. So the answer is none?

15 A. I would say that's fair.


16 Q. And you said you've never held an
17 academic position, correct?

18 A. Correct. Beyond maybe a teaching
19 assistantship in college, but not -- not a
20 professorship.

21 Q. So you've never taught a course about
22 the digital asset market, correct?

23 A. Correct.

24 Q. Have you ever published a paper that
25 addressed digital assets or cryptocurrency in

1 
2 any way?

3 A. I don't believe so, no.

4 Q. Have you ever given a public talk that
5 discussed digital assets or cryptocurrency in
6 any way?

7 A. No, I have not.

8 Q. Other than in this case, have you ever
9 conducted an event study that related to the
10 cryptocurrency market?

11 A. No.

12 Q. Other than in this case, have you ever
13 conducted an event study that applied to digital
14 assets in any respect?

15 A. No.

16 Q. Other than in this case, have you ever
17 done an event study that applied to the pricing
18 of digital assets or cryptocurrencies?

19 A. No.

20 Q. Are you claiming to be off-- to be
21 qualified to offer an expert opinion about the
22 functionality or capabilities of various digital
23 assets?

24 A. If you're asking about what I would
25 describe as the software, software engineering,

1 [REDACTED]
2 exactly how blockchains work, that's not my
3 domain of expertise. My domain of expertise
4 relates to economics, asset pricing and the
5 matters that I'm offering opinions on.

6 Q. Are you claiming to be qualified to
7 offer an expert opinion about the uses of
8 various digital assets?

9 A. Consistent with how an economist might
10 understand how people use assets and invest, I
11 suppose so. If -- if -- again, if you're asking
12 about -- expert opinion on whether the consensus
13 algorithms of XRP, how those compare to bitcoin,
14 then no.

15 Q. What training or prior work have you
16 done that would allow you to express an opinion
17 on how people use digital assets or invest in
18 digital assets?

19 MR. MOYE: I'm going to object to the
20 extent that you're mischaracterizing his
21 prior answer.

22 Go ahead.

23 A. Well, economists study markets. They
24 study market prices. They study transactions in
25 markets.

1 [REDACTED]
2 To the extent that we're discussing
3 prices of digital tokens and markets around
4 digital tokens, I feel that as an economist, I'm
5 qualified to offer opinions related --

6 MR. FLUMENBAUM: If you lean back, I
7 can't hear him anymore.

8 THE WITNESS: Sorry.

9 MR. FIGEL: Why don't we go off the
10 record for just a second, do an experiment
11 and try and move the mic closer to
12 Dr. [REDACTED]. That might --

13 THE VIDEOGRAPHER: We're going off the
14 record at 9:49 a.m.

15 (Discussion off the record.)

16 THE VIDEOGRAPHER: We're back on the
17 record at 9:54 a.m.

18 Q. Dr. [REDACTED], I'm not sure you finished
19 your answer. Do you remember the question?

20 A. No, I'm sorry, I don't.

21 MR. FIGEL: Maybe we could ask the
22 court reporter to read back the last
23 question and Mr. [REDACTED]'s answer up to the
24 point where he stopped speaking.

25 (The record was read back.)

1



2 A. -- thereto.

3 Q. As I understand your testimony, the

4 only study of markets or market prices that

5 you've done that relate to digital assets or

6 cryptocurrency occurred in connection with your

7 engagement in this case. Is that correct?

8 A. That's correct, yes.

9 Q. So the entirety of your background as

10 it relates to the digital assets or crypto--

11 cryptocurrency markets relate to the work you

12 did in connection with your engagement in this

13 case. Correct?

14 A. Sorry, could you repeat the question?

15 MR. FIGEL: Would you mind reading

16 back.

17 (The record was read back.)

18 MR. MOYE: Objection. Argumentative.

19 A. I -- I -- I just don't -- I just don't

20 think I can accept -- I don't think that's a

21 fair characterization.

22 The entirety of my background as a --

23 both my academic training and my professional

24 work as an economist has equipped me, I believe,

25 to address economic issues in this market and

1 [REDACTED]

2 many other markets.

3 I -- I have not conducted empirical
4 analyses of digital token prices outside of the
5 work I've done in this matter.

6 Q. So is it your testimony that expertise
7 in one market qualifies you to offer expert
8 opinion testimony about another market?

9 MR. MOYE: Objection to the extent
10 that mischaracterizes his answer.

11 A. I don't think that's what I said.
12 Economists study prices and study markets.

13 An economist could discuss stock
14 prices, bond prices, commodity prices, could
15 discuss the price of oil, could discuss the
16 price of bitcoin, has econometric tools to
17 investigate and apply to data from a variety of
18 different markets.

19 That's routine in the ordinary course
20 of being an economist.

21 Q. Let me just see if I can break up your
22 answer, Dr. [REDACTED]. We agree you have never
23 studied digital assets or the cryptocurrency
24 market other than in connection with your
25 engagement in this case. Correct?

1 [REDACTED]
2 A. I'll repeat my prior testimony. I
3 have never conducted an empirical analysis of
4 digital token prices outside of the work I've
5 done in this case.

6 Q. So your testimony is that whatever
7 work you've done in other markets and in other
8 cases qualifies you to express an expert opinion
9 about the use of digital assets, trading in
10 digital assets, pricing in digital assets in the
11 cryptocurrency and in digital asset markets,
12 correct?

13 MR. MOYE: Objection. Asked and
14 answered. Objection to the extent you're
15 mischaracterizing his prior testimony
16 instead of asking a new question. And
17 argumentative.

18 MR. FIGEL: Mr. Moyer, we've had a very
19 collegial relationship; but I think the
20 standing rule is you get to say, Objection
21 to form. Speaking objections are really
22 not permitted, and I view that as coaching
23 the witness.

24 So if we could have an agreement, in
25 the future you'll just say, "Objection,"

1



2 I'll either reformat my question or I'll

3 ask him to answer.

4 MR. MOYE: I'm sorry, Reid. I'm not

5 trying to be difficult. I don't believe

6 that's been our prior stipulation, and I

7 certainly don't want to coach the witness.

8 But I don't know how you can correct a

9 question if I don't give you some

10 information about what I think the problem

11 with the form is.

12 MR. FIGEL: If I have a question about

13 your problem with the form of my question,

14 I'll ask you; but, otherwise, I would

15 prefer if you could just say, "Objection."

16 MR. MOYE: No. I understand that.

17 But if there's an issue some day about the

18 transcript and whether it's acceptable and

19 I've only objected to form because of your

20 instruction, I feel like you would have cut

21 me off from explaining in the moment what I

22 thought was wrong with the answer.

23 I certainly don't want to belabor the

24 objection -- the record with things that I

25 don't need to say.

1 [REDACTED]
2 MR. FIGEL: My request would be that
3 if you have an objection to form, you just
4 say, "Objection," and not have a speaking
5 objection, which I view as an effort to
6 coach the witness.

7 MR. MOYE: Well, I'll consider your
8 request, and I'll try to be helpful. But I
9 cannot agree that I -- that I will not give
10 a proper form objection. And
11 "argumentative" is proper form objection,
12 in my experience.

13 Q. Mr. [REDACTED] -- Dr. [REDACTED], did you
14 understand my question?

15 A. Could we repeat the question, please.

16 MR. FIGEL: I can read it back.

17 Q. So your testimony is that whatever
18 work you've done in other markets and in other
19 cases qualifies you to express an expert opinion
20 about the use of digital assets, trading in
21 digital assets, pricing in digital assets in the
22 cryptocurrency and digital asset markets,
23 correct?

24 A. I believe I'm qualified to offer the
25 opinions that I've offered in this matter. I've

1 [REDACTED]
2 conducted numerous event studies in different
3 markets, on different type of assets. There
4 is -- I can apply that same methodology and
5 technique and analytical background to this
6 market.

7 Q. In connection with any of the opinions
8 expressed in Exhibits 1 or Exhibit 2, did you
9 make any assumptions about any connection
10 between XRP and Ripple?

11 A. That's an interesting question.

Q.12 Thank you.

13 A. The -- the way I would answer that
14 question is, the experimental analytical design
15 of primarily my -- my opening report, the -- now
16 I'm going to sound like an economist. But the
17 null hypothesis that's being tested is that
18 there is no connection between Ripple Labs and
19 XRP markets. That's the hypothesis to be
20 tested. And I go about testing that hypothesis.

21 So from a statistical point of view,
22 the assumption is that Ripple Labs and XRP
23 markets are independent of each other.

24 Q. My question is, as you applied your
25 judgment and your background to the opinions you

1 [REDACTED]
2 reached in your report, did you make any
3 assumptions about the relationship between
4 Ripple and XRP?

5 A. I can't think of any particular
6 assumption I made. If -- at least as I'm
7 thinking about that question. For example, I
8 did not assume that Ripple could do things that
9 would move XRP prices.

10 I did not assume that that was true.

11 Q. We'll come back to that.

12 Let me direct your attention now to
13 paragraph 24 of your report.

14 Are you with me?

15 A. My -- paragraph 24 of my opening
16 report?

17 Q. Yes.

18 A. Yes.

19 Q. And you write, Ripple has sold more
20 than 1.4 billion worth of XRP tokens through
21 various channels.

22 A. Yes. That's what's written here.

23 Q. Was that an assumption you made about
24 the relationship between Ripple and XRP?

25 A. I wouldn't characterize that as an

1 [REDACTED]
2 assumption about the relationship. I -- that's
3 a summary of data that we took from certain
4 Ripple reports.

5 Q. And let me direct your attention now
6 to Figure 6 on page 13.

7 You with me?

8 A. Yes.

9 Q. This reflects data that you included
10 in your report that set out what you believe to
11 be the total amount of Ripple sales of XRP by
12 quarter. Is that correct?

13 A. This summarizes the sales of XRP as
14 reported in Ripple's XRP market reports.

15 Q. And did you prepare this?

16 A. It was prepared at my direction.

17 Q. When you say it was prepared at your
18 direction, what do you mean?

19 A. I had a team working with me at
20 Brattle, and I directed them to prepare certain
21 exhibits or conduct some analysis. And this was
22 an -- this was an exhibit that I asked them to
23 prepare.

24 Q. And when you say you have a team, how
25 large is your team?

1



2 A. I don't know precisely. I would say
3 at any one time, on the order of four, five, or
4 six people, maybe sometimes more, maybe
5 sometimes less.

6 Q. And did you review Figure 6 for
7 accuracy before you included it in your report?

8 A. I did not personally audit the numbers
9 in the exhibit. I asked that this exhibit, as
10 all other exhibits in this report, go through
11 standard practices of audit and confirmation.

12 Q. Did you write your report?

13 A. I'm certainly responsible for my
14 report. I wrote -- some sections may have been
15 initially drafted by other parties. But in all
16 cases, I reviewed and edited and assumed
17 responsibility for the report in its entirety.

18 Q. Which parties drafted portions of your
19 report, other than you?

20 A. We're going back in time. But --
21 well, for example, this -- I -- a principal at
22 Brattle who was working with me named Sujay --
23 that's S-U-J-A-Y, D-A-V-E -- was working with me
24 and may have prepared the first draft of some
25 portions or -- some portions of the report.

1



2 Q. Anyone else other than people at
3 Brattle?

4 A. No.

5 Q. Let me direct your attention to
6 paragraph 25.

7 Your report states, with a typo, As
8 show in Figure 5, Ripple reported that it raised
9 approximately 1.4 billion from sales of XRP,
10 through the fourth quarter of 2020.

11 Do you see that?

12 A. I do see that.

13 Q. What do you mean by "raised" in that
14 sentence?

15 A. I mean sold from its inventory of XRP
16 tokens into the market and received proceeds of
17 approximately 1.4 billion.

18 Q. When you say "proceeds," what do you
19 mean?

20 A. They -- they sold or perhaps, through
21 market makers, directed to be sold tokens in
22 exchange for U.S. dollars, and the amount of
23 U.S. dollars was approximately 1.4 billion.

24 Q. And you observe in paragraph 26 that
25 Ripple reported its sales of XRP on its

1



2 financial statements in two categories.

3 Correct? Programmatic sales and OTC sales?

4 A. I see that, yes.

5 Q. And in paragraph 26(a), you talk about

6 programmatic sales of XRP on digital asset

7 trading platforms?

8 Correct?

9 A. I see that written there, yes.

10 Q. So those are cash sales?

11 A. My understanding is that the tokens

12 were sold for cash.

13 Q. And in paragraph 26(b), you talk about

14 OTC sales were negotiated, block sales of XRP,

15 to large purchasers, including wealthy

16 individuals, hedge funds, other investment

17 firms, and financial institutions. Correct?

18 A. Yes, I see that.

19 Q. And those were also cash sales?

20 A. Well, I -- depending on what you mean

21 by "cash sales," I believe they were sold in

22 exchange for U.S. dollars. Whether that was --

23 I doubt very much it was delivered in slips of

24 green paper to the door. But I -- my

25 understanding is they were sold for U.S.

1

2 dollars.

3 Q. And as you state in paragraph 27,
4 referring to Figure 6, your opinion is that
5 these two categories, approximately 745 million
6 in programmatic sales and approximately
7 698 million in OTC sales, which total about
8 1.5 billion, are the two components of the
9 1.4 billion in sales of XRP that you identified
10 in your report? Is that correct?


11 A. Yes, that's correct.

12 Q. Why did you include Ripple's sales or
13 alleged sales of XRP in your report?

14 A. This section is a background section
15 on Ripple Labs, its -- its businesses, its
16 products and some data on its finances. This is
17 simply intended as a -- as a background section
18 to provide some context and information.

19 Q. In what respects do you think that
20 this background is relevant to the opinions you
21 express in Exhibits 1 and 2?

22 A. I -- it's included to be helpful to
23 the reader to provide some context to know what
24 Ripple Labs is, the products that it engages in,
25 which, of course, I do discuss later,

1 
2 analytically.

3 I -- there's nothing -- there --
4 there's nothing in this section which was
5 intended to be here which I had any reason to
6 believe was in any way controversial. It's a
7 reporting of data from Ripple's own reports.

8 Q. And did you rely on the dollar value
9 of these sales in connection with any of the
10 econometric models that you performed that led
11 to the opinions you express in Exhibits 1 and 2?

12 A. No. The econometric models and
13 econometric analysis that I conduct does not
14 incorporate information of Ripple's sales of
15 XRP.

16 Q. So what's the relevance, in your mind,
17 to the observations that you make about Ripple's
18 sales to the opinions you express?

19 A. Again, I can only repeat my prior
20 testimony. This section was meant to be a brief
21 background section on Ripple Labs, its
22 businesses, some financial information.

23 I consider this a routine type of
24 section, when analyzing a company, to simply
25 provide some basic information, hardly

1 [REDACTED]
2 exhaustive, of what that company does and some
3 information about its finances.

4 I -- that was -- that was the
5 intention of this section.

6 Q. Well, in your mind, aren't
7 transactions over an exchange or through the OTC
8 market the transactions that -- the source data
9 that you rely on for your opinion? In other
10 words, you're -- you're -- withdrawn.

11 You -- you -- one of the variables
12 that you look at is the price impact of XRP.

13 Correct?

14 A. Of the variables -- I -- I --

15 Q. The dependent variable in your
16 study --

17 A. The dependent variable are -- I'm
18 sorry. Please continue.

19 Q. The dependent variable in your study
20 is the price of XRP. Correct?

21 A. Strictly speaking, the change in the
22 log of the price of XRP. But, yes.

23 Q. And so transactions, either
24 programmatic sale transactions or OTC
25 transactions are relevant to the price impact

1 [REDACTED]
2 that you purport to measure, correct?

3 A. To the extent that they -- these
4 transactions moved the price, that would be
5 reflected in the price data that I use.

6 To the extent that Bob selling XRP to
7 Alice impacts the price, that price is reflected
8 in the data that I use.

9 Q. And your understanding is, is that the
10 1.4 billion of sales that you identify in
11 Exhibit 6 are the transactions in which Ripple
12 sold XRP that would be the part of the data that
13 you relied on in your modeling and reports,
14 correct?

15 A. I -- I'm sorry, could you repeat the
16 question?

17 Q. I'll withdraw it.

18 Did you review any of the contracts by
19 which Ripple sold or transferred XRP to any
20 third party?

21 A. No, I have not reviewed any such
22 contracts.

23 Q. Why not?

24 A. It wasn't pertinent to the opinions
25 that I was offering in this matter.

1

2 Q. You're not a certified public

3 accountant, are you?

4 A. No, I am not.

5 Q. Are you claiming to be an expert in

6 financial accounting?

7 A. I'm familiar with financial

8 accounting. I've used financial accounting in

9 my professional work for many years. I'm not a

10 certified public accountant, and I don't believe

11 I'm offering any accounting opinions in this

12 matter.

13 Q. If you'd listen to my question,

14 Dr. [REDACTED]. Do you consider yourself to be an

15 expert in financial accounting?

16 A. I can -- I can only restate my answer.

17 I'm not a certified public accountant. As a

18 professional practicing economist, I utilize

19 financial accounting, and I believe I understand

20 the basic principles. I'm not offering any

21 accounting opinions in this matter.

22 MR. FIGEL: Can we get Tab 3, please.

23 Q. I show you what's been marked as

24 Exhibit 3. And I will represent to you that

25 this is a copy of the consolidated financial

1 [REDACTED]
2 statements of Ripple Labs, Incorporated, for the
3 year ending December 31, 2019.

4 (Copy of consolidated financial
5 statements of Ripple Labs, Incorporated,
6 for year ending December 31, 2019, was
7 marked Exhibit 3 for identification, as of
8 this date.)

9 A. Okay.

10 Q. Have you seen this document before,
11 Dr. [REDACTED]?

12 A. It looks familiar.

13 Q. It's not listed as one of the
14 documents that you considered, in the appendix
15 to your report. Do you recall reviewing this in
16 connection with the preparation of your report?

17 A. I recall reviewing some financial
18 data. If this was not among it, I -- I don't
19 have the list memorized.

20 Q. Well, if you had reviewed it, would
21 you have included it on the list of items
22 considered?

23 A. Well, I believe that the list is items
24 relied upon, not items considered.

25 Q. Why don't we go to Exhibit 1, if you

1

2 would.

3 MR. MOYE: Appendix B?

4 MR. FIGEL: Appendix B, yes, thank

5 you.

6 Q. So -- I see what you're saying,

7 Dr. [REDACTED].

8 So your Appendix B is only the
9 documents you relied on. Is that correct?

10 A. That's my understanding of what
11 Appendix B is meant to reflect.

12 Q. And so it doesn't reflect all the
13 documents you considered in connection with the
14 preparation of your report, correct?

15 A. Correct.

16 Q. So there are documents that you
17 considered that are not included on Exhibit B;
18 is that right?

19 A. Exhibit B is not intended to be an
20 exhaustive list of every document that I may
21 have looked at, no.

22 Q. That's not my question.

23 My question was, there are documents
24 that you considered in the preparation of your
25 report that are not included on Exhibit B; is

1 [REDACTED]
2 that correct?

3 A. There -- there are documents that I
4 reviewed that may not be listed in Appendix B if
5 I didn't rely on them to form the opinions in
6 this report.

7 Q. Do you recall any documents that you
8 considered but didn't rely on in connection with
9 the preparation of your report?

10 MR. MOYE: Initial report?

11 MR. FIGEL: Initial report, yes.

12 Thank you.

13 A. Well, I remember reading a -- a Wells
14 Submission from Ripple Labs. It's a document
15 that I looked at but I ultimately didn't rely
16 upon in any way to form my opinions.

17 Again, I think that I've looked at
18 some financial statement data, maybe just
19 briefly, but didn't consider myself relying on
20 it to form any of the opinions in my report.

21 That's what comes to mind sitting
22 here.

23 Q. And you think you may have considered
24 Ripple's 2019 financial statement?

25 A. I -- I seem to recall looking at

1 [REDACTED]
2 documents like this. Whether this was
3 particularly one that I ever looked at, I -- I
4 simply can't say.

5 Q. Could you take a look at page 3 of
6 Exhibit 3, and it bears the Bates number
7 RPLI_SEC 0301117.

8 Can you tell me what --

9 A. I'm sorry. So it's -- is that page 1
10 that's page 2 and that's page 3?

11 MR. MOYE: No, at the bottom.

12 THE WITNESS: Oh, page 3 on the bottom
13 of the page.

14 Q. Yes. It's easier if you go by Bates
15 numbers. The one ending in 117.

16 Are you with me?

17 A. Yes.

18 Q. Can you tell me what information's
19 reflected on this page.

20 A. Well, it appears to be some statements
21 of operations for the years ending December 31,
22 2019, 2018. Some information on revenues,
23 costs, with some detail provided.

24 Q. Let me direct your attention to the
25 two line items under "Revenues."

1 [REDACTED]

2 Do you see that?

3 A. I see "Revenues," yes.

4 Q. And do you see that under "Revenues"
5 there's XRP transactions and nonmonetary XRP
6 transactions?

7 A. I see that.

8 Q. Can you explain the difference between
9 XRP transactions and nonmonetary XRP
10 transactions?

11 MR. MOYE: Objection. Foundation.

12 A. Sitting here right now, I'm not
13 exactly sure what they mean by XRP transactions
14 and nonmonetary transactions.

15 Q. In your opinion, do they both reflect
16 Ripple's sales of XRP?

17 A. At -- at the moment, I -- I can't say.
18 This is 2019 and 2018.

19 Let me try to do a little quick math
20 in my head, which is always dangerous.

21 Q. I have a calculator if you'd like one.

22 A. Well, I -- I -- let's see. All right,
23 2019.

24 251. Let's do it this way.

25 22330.

1

2 718.

3 I -- well, maybe with the calculator.

4 I -- I don't -- I don't know if these

5 two numbers sum to be the programmatic sales

6 that are reported in my report.

7 Q. Do you know what a Hewlett-Packard 12C

8 is?

9 A. I think so. If you would like me to

10 use it.

11 Q. If you would like to. I just don't

12 want you to restrict your answer because you

13 don't have a calculator. You said you needed

14 one.

15 A. Okay. This is old school.

16 All right. So what are we doing?

17 Okay. How do you work your

18 calculator?

19 Let me use -- well, I don't have my

20 phone.

21 Q. Yeah. Why don't we move on. Yeah,

22 let's do that.

23 A. So you're asking if -- I suppose

24 you're asking if these numbers correspond to

25 what's in my report. I don't know offhand. If

1 [REDACTED]
2 that was your question.

3 Q. It was. Let's -- let me direct your
4 attention now to page 6 of Exhibit 3.

5 First of all, can you tell me what a
6 consolidated statement of cash flows is in a
7 financial statement?

8 A. Well, it's a statement that summarizes
9 cash flows, generally from operating activities
10 of a company. These would be revenues collected
11 and costs of operation.

12 Q. What do "cash flows" mean?

13 A. Well, it can to be on an accrued basis
14 or a collected basis. But these are dollars in
15 and dollars out in the operation of the
16 business.

17 Q. By "dollars," you mean -- I don't mean
18 greenbacks --

19 A. I don't mean green slips of paper,
20 but --

21 Q. Let's not talk over each other.

22 Give me just one second, Dr. [REDACTED]. I
23 was about to ask you a question.

24 And by "dollars," you don't mean green
25 slips of paper. You mean cash transactions that

1 [REDACTED]
2 are recorded in bank and accounting ledgers,
3 correct?

4 A. Correct. I certainly don't mean green
5 slips of paper handing back and forth.

6 Q. All right. Now, let me direct your
7 attention to the first line under cash flows
8 from the operating activities.

9 Do you see that?

10 A. Uh-huh.

11 Q. And do you see the net income line?

12 A. Yes.

13 Q. And do you recognize that as, the
14 [REDACTED], approximately, as the net income
15 amount on page 3?

16 A. Yes. They're the same number.

17 Q. Okay. And if you go down the next --
18 the first line under net income is adjustments
19 to reconcile net income to net cash providing
20 by -- provided by operating activities.

21 Do you see that?

22 A. Uh-huh.

23 Q. What's your understanding of what that
24 adjustment refers to?

25 A. Well, generally, you have income

1 [REDACTED]
2 statements and cash flow statements, balance
3 sheet statements. This might be an adjustment
4 to reconcile an income statement to a cash
5 statement.

6 Q. What's the difference between income
7 and cash in the context of this item?

8 A. Well, income statements, you have --
9 income statements are -- reflect the operation
10 of the business, as moneys come in and go out,
11 very often on an accrued basis.

12 Cash statements represent an
13 accounting of final cash balances at the end of
14 the fiscal year. Sometimes those two things may
15 not line up because you might be -- on your
16 income statement, you might be reflecting
17 moneys, for instance, that have been billed but
18 not yet received or costs that have been charged
19 but not yet paid. And so you may have to do a
20 reconciliation to bring them into balance.

21 Q. Basically an adjustment from noncash
22 to cash items; is that correct?

23 A. Correct.

24 Q. And you'll see -- on the first line
25 under that adjustment, you'll see realized and

1 [REDACTED]
2 unrealized gains on XRP derivatives.

3 Do you see that?

4 A. I do.

5 Q. And you see that's a negative
6 [REDACTED] number?

7 A. Yes. It appears to be.

8 Q. And what's your understanding of what
9 the net-income-to-cash adjustment of [REDACTED]
10 for realized and unrealized gains on XRP
11 derivatives relates to?

12 MR. MOYE: Objection. Foundation.

13 A. Well, I -- I mean, I haven't reviewed
14 these statements in anywhere the sort of detail
15 that we're doing here today.

16 Presumably, Ripple Labs had some
17 derivative position on XRP; and perhaps on a
18 mark-to-market basis, there were gains on losses
19 to those positions. But in -- I have spent
20 essentially -- I spent very little time with
21 these documents. I just don't want to speculate
22 out of turn.

23 Q. Does it cause you to question the
24 statements in your opening report that Ripple
25 had 1.4 billion of cash sales during the

1 [REDACTED]
2 timeframe reflected in your Figure 6?

3 A. No. My Figure 6, I think, is based --
4 is simply a restatement of their own market
5 reports. I'm simply tabulating data from the
6 XRP market reports.

7 Q. Let me direct your attention now to
8 page 11 of Exhibit 3.

9 A. Uh-huh.

10 Q. Are you familiar with notes to
11 financial statements?

12 A. Generally, yes.

13 Q. Fair to say that's where an issuer, a
14 company describes some of the line items on
15 their financial statements?

16 A. Correct.

17 Q. Before you signed your opening report,
18 did you read the footnote in which Ripple
19 described the difference between XRP
20 transactions, nonmonetary XRP transactions?

21 Do you see that?

22 A. I see this note. I had not read this
23 note prior to signing my opening report.

24 Q. Could you read the sentence under XRP
25 transactions into the record, please?

1



2 A. XRP transactions revenue consists of
3 sales of XRP for fixed monetary consideration
4 and is recognized upon delivery of XRP to the
5 customer.

6 Q. What's your understanding of that
7 explanation in the note under XRP transactions?

8 A. Well, I take it to mean that this --
9 this refers to proceeds collected upon the
10 delivery of XRP to some customer in exchange for
11 money.


12 Q. And can you read for me the first
13 sentence under nonmonetary XRP transactions?

14 A. Nonmonetary XRP transactions revenue
15 consists of transactions where the company
16 delivers XRP to customers for consideration
17 other than cash or other monetary consideration
18 and is recognized upon delivery of XRP.

19 Q. What's your understanding of that
20 sentence?

21 A. I believe it's describing situations
22 where Ripple delivers XRP tokens in exchange for
23 something other than money.

24 Q. And do reading these two explanations
25 of the footnote cause you to reconsider the

1 
2 statements you made about Ripple's sales of
3 1.4 billion between the first quarter of 2017
4 and the fourth quarter of 2020?

5 A. By themselves, no. What I report in
6 Figure 6, the numbers there are taken simply
7 from XRP markets reports.

8 Q. And you think those are sales of XRP
9 for cash? Correct?

10 A. Combination of programmatic sales and
11 over-the-counter sales expressed in a certain
12 value.

13 Q. And when we talk about cash, I'm using
14 the definition that Ripple used in its notes,
15 fix monetary consideration.

16 So just to be clear, you are not
17 modifying, based on the information I showed
18 you, the statements you made that Ripple sold
19 1.4 -- 42.45 billion in XRP for a fixed monetary
20 consideration. Correct?

21 MR. MOYE: Objection. Asked and
22 answered.

23 A. The value of the XRP that Ripple sold,
24 as reported in their markets reports, represents
25 a certain amount -- a certain value that's put

1 [REDACTED]
2 on it. If we're now parsing whether that was --
3 whether they received a hundred dollars or
4 whether they received services that they valued
5 at a hundred dollars, that's not a distinction
6 that -- that was important to me in creating
7 Figure 6, which, again, is just a tabulation of
8 data from Ripple's XRP market reports.

9 Q. So even understanding that some not --
10 withdrawn.

11 Even understanding the large
12 percentage of the sales that you have in
13 Figure 6 were sales for something other than
14 fixed monetary consideration, that doesn't
15 change the relevance of the information in
16 Figure 6 to your study. Correct?

17 MR. MOYE: Same objection.

18 A. Correct. Figure 6 is simply a
19 tabulation of data from market reports
20 indicating the value of XRP tokens that Ripple
21 released. I -- with this information and --
22 perhaps jogging my memory, it might be that
23 sometimes they collected a hundred dollars in
24 money, and sometimes they collected services
25 worth a hundred dollars. I'm not sure that

1 [REDACTED]
2 that's a -- necessarily an important
3 distinction.

4 But in any event, this data is not
5 part of the econometric analysis that I
6 conducted. This is provided simply for
7 informational and background purposes.

8 Q. Now, you testified earlier, I believe,
9 that you never conducted, other than in this
10 case, an event study involving digital assets.

11 Correct?

12 A. Correct.

13 Q. Right. And apart from your work in
14 this case, do you know of any event study
15 involving a digital asset that's been used to
16 support the argument that a digital asset is a
17 security?

18 A. To support -- well, the -- generally,
19 that sounds like a -- a legal issue, whether
20 something is a security or not.

21 I'm personally not aware of other
22 legal proceedings, but I -- I wouldn't
23 necessarily be aware of other legal proceedings.

24 Q. Well, do you know of anyone else,
25 other than you, that's conducted an event study

1 [REDACTED]
2 involving a digital asset for the purpose of
3 demonstrating that the digital asset was a
4 security?

5 A. Well, I don't even know that I've done
6 what you just said. I conducted an event study
7 for the purpose of determining whether there is
8 a connection between Ripple Labs and the XRP
9 market, and I found that there is. That's
10 the -- the -- that's my analysis and that's my
11 opinion.

12 Q. So --

13 A. How that relates to a legal question
14 is not for me to say.

15 Q. So as far as you know, the event study
16 that you conducted is not relevant to the
17 question of whether XRP is a security. Correct?

18 MR. MOYE: Objection. Argumentative.

19 A. That's certainly not what I said.

20 Q. Well, let me ask you the question. In
21 your mind, is the event study that you conducted
22 as reflected in your report, in Exhibit 1,
23 relevant to the question of whether XRP is a
24 security?

25 A. I -- I -- you seem to be asking me for

1 [REDACTED]
2 my legal opinion, which I'm fully -- which I'm
3 not qualified to -- to offer. I'm not offering
4 any legal opinions.

5 I was engaged by the SEC to conduct an
6 analysis, and I conducted the analysis to the
7 very best of my ability.

8 Q. Dr. [REDACTED], I'm asking you for your
9 opinion, as an economist, as to whether you
10 believe the event study that you prepared is
11 relevant to the question of whether XRP is a
12 security.

13 A. As an economist opining on a legal
14 question? I'm not sure I -- I -- I understand
15 your question.

16 Q. So I take it you don't have an
17 opinion?

18 A. The question of whether Ripple Labs
19 impacted the XRP market is -- as far as I
20 understand, was in dispute. I was asked to
21 conduct an analysis, and I conducted an analysis
22 and prepared my opinions and wrote a report
23 about them.

24 Q. Let's go back to precedents of using
25 an event study for the purpose of supporting an

1 [REDACTED]
2 argument that a digital asset is a security.

3 Are you with me? I'm ask-- the
4 question I'm asking is, are you aware of anyone
5 else who's ever done an event study for the
6 purpose of demonstrating that a digital asset is
7 a security.

8 MR. MOYE: Objection. Asked and
9 answered.

10 A. Again, as I've -- as I've tried to
11 explain, the question of whether it is or is not
12 a security is a legal question.

13 An event study is not going to answer
14 a legal question. It may provide information
15 which might be useful to the finder of fact
16 who's ultimately going to settle the legal
17 question. But an event study is not a legal
18 test.

19 Q. Are you aware of any academic
20 literature that supports the use of an event
21 study to demonstrate that a digital asset is a
22 security?

23 A. No, I'm not aware of any academic
24 literature on that point. That's again, a --
25 generally a legal question, and I would be --

1 [REDACTED]
2 it's a -- it's ultimately a legal question.

3 Q. So I may be able to save everybody in
4 the room a little bit of time then, Dr. [REDACTED].
5 So fair to say that all of the academic
6 publications that you cite in your report, in
7 your mind, do not support the use of an event
8 study to support an argument that a digital
9 asset is a security. Correct?

10 MR. MOYE: Objection. Argumentative.

11 A. With respect to that -- I -- I need to
12 hear that back. That was very convoluted.

13 Q. Let me -- give me just a second.

14 You agree that none of the academic
15 literature cited in your report, either report,
16 endorses the use of an event study to support an
17 argument that a digital asset is a security.
18 Correct?

19 A. The academic literature applies the
20 event study methodology to the digital token
21 markets, including the XRP market.

22 Those event studies resolved around
23 the question of whether a set of events was
24 associated with an increase in -- in digital
25 token -- and sometimes decrease, in digital

1 [REDACTED]
2 token prices.

3 I applied that well-accepted,
4 peer-reviewed methodology to the matter at hand,
5 as I was asked to investigate a question by the
6 SEC.

7 MR. FIGEL: We've been going about an
8 hour and 20 minutes. I'm happy to keep
9 going, but if you'd like to take a short
10 break, I'm happy to do that, too.

11 MR. MOYE: Why don't we take a short
12 break.

13 MR. FIGEL: Yeah.

14 THE VIDEOGRAPHER: We're going off the
15 record at 10:40 a.m.

16 (A recess was taken from 10:40 to
17 10:59.)

18 THE VIDEOGRAPHER: We're back on the
19 record at 10:59 a.m.

20 Q. Dr. [REDACTED], before we broke, you made an
21 observation about the academic literature that
22 you relied on.

23 Apart from your work in this case, are
24 you aware of any event study that's been used to
25 evaluate whether news events published by a

1 [REDACTED]
2 company had an impact on the market price of a
3 digital asset?

4 A. Whether -- whether news events -- I'm
5 sorry, just one more time?

6 Q. Sure.

7 Apart from your work in this case, are
8 you aware of any event study that's been used to
9 evaluate whether news events published by a
10 company had an impact on the market price of a
11 digital asset?

12 A. Yes.

13 Q. What study is that?

14 A. The -- the Joo, et al. study. I
15 believe -- and maybe it's the Gerritsen. I
16 might be confusing them.

17 But one of those studies, in its set
18 of events for XRP, included -- perhaps among
19 other things, but I remember that it included
20 the BitLicense being awarded to Ripple.

21 There may be other examples, but that
22 one comes to mind.

23 Q. And you consider the BitLicense being
24 issued to Ripple to be a news event published by
25 a company?

1 [REDACTED]
2 A. Well, Ripple published -- published
3 that event. Other people may have also, but
4 Ripple certainly announced the event.

5 Q. Well, that would -- that would
6 identify a correlation between the award of a
7 BitLicense and the market -- the impact on
8 market price. Correct?

9 A. Correct.

10 Q. And the Joo study that you refer to
11 didn't identify the source of the publication of
12 the award of the BitLicense, correct?

13 A. It probably wasn't pertinent to them.

14 Q. But you're --

15 A. Sorry, go ahead.

16 Q. My question is, are you aware of an
17 event study that sought to evaluate the impact
18 on the market price of a digital asset from a
19 news event announced by a specific company?

20 A. They may have sourced the news event
21 from Ripple's own announcement. I don't know
22 where they sourced the news event. I don't see
23 what difference it would make.

24 Q. You don't see a difference --

25 A. No.

1

2 Q. Let me finish.

3 A. Sorry.

4 Q. Thank.

5 You don't see a difference between --

6 a correlation between the fact of an event and

7 a -- and a market price of a digital asset and

8 an announcement by a company on the digital

9 price of a -- on the market price of a digital

10 asset?

11 A. You're parsing distinctions that I

12 just don't follow.

13 An event that is unannounced and

14 unknown presumably will not have any impact.

15 Therefore, whenever we talk about the impact of

16 an event, we are really invariably talking about

17 the impact of the announcement of the event.

18 And that is -- that's just one that I

19 happen to remember. There may be others, I --

20 but that's just one that happens to come to mind

21 of an event that was announced by Ripple -- may

22 have also been announced by other people -- that

23 was included in an event study in peer-reviewed

24 academic literature on the XRP market.

25 Q. I want to make sure I understand your

1 [REDACTED]
2 answer, Dr. [REDACTED].

3 And let -- bear with me for a second.

4 Let's take the BitLicense event that you
5 identified.

6 A. Uh-huh.

7 Q. As I understand the Joo and -- I
8 believe it's Nishikaw and others study, one of
9 the things they looked at was a correlation
10 between the award of the BitLicense and the
11 market price of digital assets. Correct?

12 A. Just to be clear, I don't remember if
13 it was the Joo study or the Gerritsen study.
14 I -- I -- I might be conflating the two.

15 So I don't know if we want to keep
16 referring to it as the Joo study. May have
17 been.

18 But one of those two studies had a set
19 of events that it considered relevant to XRP,
20 and the BitLicense was among those events.

21 Q. Correct. But in your mind, it doesn't
22 matter, when you're measuring market impact of
23 an event, whether the event is announced by one
24 source or 50 source. Correct?

25 A. Generally -- and -- and with the

1 [REDACTED]
2 caveat that one can -- with any rule, one might
3 be able to think of an exception, but as a
4 general proposition, no, it doesn't matter to me
5 whether it was announced by one or several.

6 Q. Did the events that you used in your
7 event study as reflected in Exhibit 1 make a
8 distinction between whether the event was
9 announced by one source or by multiple sources?

10 A. That is not a distinction that I drew
11 in my analysis. Nor is it a distinction that --
12 no, it was not a distinction that I drew in my
13 analysis.

14 Q. All right. Could we go to Exhibit 1,
15 please. Paragraph 30.

16 A. Yes.

17 Q. Could you read for me the first
18 sentence in paragraph 30.

19 A. In the matter at hand, I understand
20 that the XRP token is not a claim on the assets
21 or earnings of Ripple Labs, and that Ripple Labs
22 maintains that market participants do not view
23 Ripple Labs' efforts as relevant to the XRP
24 market price.

25 Q. Are you aware of an event study that

1 [REDACTED]
2 sought to determine whether news events about a
3 company had an impact on the market price of an
4 asset that did not have a claim on the assets or
5 earnings of the company?

6 A. Yes. I -- the same study that we've
7 been discussing, whether that's Gerritsen or
8 Joo.


9 Q. All right. Other than that study, are
10 you aware of any other event study that sought
11 to determine whether news events about a company
12 had an impact on the market price of an asset
13 that did not have a claim on the assets earnings
14 of the company?

15 A. I don't have the -- the list of events
16 from those studies memorized. There may have
17 been other events of that type. Offhand,
18 sitting higher today, I can't think of another
19 event study in the digital token market that did
20 that, but I haven't done an exhaustive search on
21 that question.

22 Q. Can you take a look at paragraph 46,
23 please.

24 A. Uh-huh.

25 Q. Could you read into the record,

1 
2 please, the second sentence in paragraph 46.

3 A. The question, therefore, is not
4 whether a particular Ripple action or event is
5 associated with a particular XRP price response,
6 as is the case in many event study disputes, but
7 instead whether Ripple actions or events are
8 collectively associated with significant XRP
9 price reactions.

10 Q. And what are the disputes you're
11 referring to when you use the phrase "many event
12 study disputes"?

13 A. What I had in mind when I wrote that
14 was, other litigation contexts which, in my
15 experience, often focus around a particular
16 event. For example, a corrective disclosure of
17 earnings and the impact that that may or may not
18 have had on the stock price.

19 Q. And you say the question in this case
20 is whether Ripple action or events are
21 collectively associated with significant XRP
22 price reactions.

23 Do you see that?

24 A. Yes.

25 Q. What do you mean by "collectively

1 [REDACTED]
2 associated"?

3 A. I'm testing a -- I'm testing whether
4 there is a correlation or association between
5 Ripple Labs and some of its events or actions
6 and XRP prices.

7 Q. And what do you -- what's the
8 definition of "collective association" or
9 "collectively associated"?

10 A. I would think of that in the context
11 of a joint test of significance, testing whether
12 a set is jointly significant as opposed to
13 looking at any one event.

14 Q. And is -- can we call that collective
15 association? Is that a fair description of what
16 you just described?

17 A. That's what was in my mind when I
18 wrote the words. It's -- a more rigorous
19 statistical discussion would probably speak in
20 terms of joint significance, but I'm happy to
21 use the language that's here.

22 Q. Is collective association a term of
23 art in econometrics?

24 A. Not especially, as I just described.
25 What I meant there was the sort of joint

1 [REDACTED]
2 significance. That would be in a more -- in an
3 academic paper, we would probably speak about
4 whether the set of events was jointly
5 significant.

6 I meant the phrase in that spirit.

7 Q. So the record is clear, let's just
8 make sure we have an agreement on the term. Do
9 you want to use "joint significance" or
10 "collective association"?

11 A. I suppose with the formality of these
12 proceedings, maybe we should speak about joint
13 significance.

14 Q. Are you aware of any peer-reviewed
15 articles that assess whether many events,
16 jointly have significance with a significant
17 price impact on a digital asset?

18 A. Yes.

19 Q. Which ones?

20 A. Papers that I've referred to in my
21 report, Gerritsen and Joo. That's -- they both
22 do that. They have a set of events, and they
23 test whether that set of events is jointly --
24 that set of events is jointly significant.

25 Q. Other than the articles that you cite

1 [REDACTED]
2 in your two reports, are you aware of any other
3 academic literature that you rely on to support
4 your claim that there are other event studies
5 that collectively -- that measure whether there
6 are collective events associated with
7 significant market impact on digital assets?

8 A. The -- the event study -- the academic
9 peer-reviewed event studies that I rely on are
10 the ones that I cite in my report and include in
11 my list of documents relied upon.

12 Q. You're not aware of any others?

13 A. 1\$itting here today, I -- no. Those
14 are the ones that I recall.

15 Q. All right. In this case, you
16 initially identified 514 news events. Is that
17 correct?

18 A. That -- that sounds correct.

19 I'm sure I say that somewhere. But
20 that sounds correct.

21 Sorry. I'm just -- yes, 514 events,
22 from paragraph 49.

23 Q. And you only tested 105 of those
24 events; is that correct?

25 A. No, no, that's not correct.

1

2 Q. Let's go to paragraph 98.

3 A. Uh-huh.

4 Q. Well, maybe I should give you a chance
5 to explain.6 Let me rephrase my question. You only
7 tested events occurring on 105 days. Correct?

8 A. No, that's not correct.

9 Q. How many event days did you test in
10 your methodology?11 A. In total, I don't know the number
12 offhand. But what you're -- if I, maybe some
13 assistance.

14 Q. Feel free.

15 A. You're missing the other categories
16 that I discuss previously, for instance, office
17 and staff announcements, the noncommercial XRP
18 initiative announcements. That's -- that would
19 need to be added to the 105, to get the total
20 number of days that I ever tested.21 Q. Didn't you effectively exclude the
22 office and staff announcements in the
23 noncommercial XRP events --24 A. I tested them. Sorry. I don't mean
25 to speak over you. I apologize.

1



2 Q. And you found no correlation, correct?

3 Or no statistically significant correlation?

4 A. That's correct.

5 Q. So you can't look to those events to
6 support an opinion that actions by Ripple Labs
7 had a statistically significant impact on the
8 market price of XRP. Correct?

9 A. Those events do not -- those events do
10 not provide statistical evidence of an
11 association between Ripple Labs and XRP prices.
12 I agree.

13 And I'm sorry. I'm really not trying
14 to be difficult, but your question was how many
15 I had tested. I just wanted to be clear that I
16 tested more than this final set here.

17 Q. So how many event days did you test in
18 your regression analysis?

19 A. Again, I -- I don't have the -- the
20 total offhand. There -- I -- but 105-plus
21 unique days in -- among the sets of news
22 categories that we've just discussed, which
23 was -- on the -- I mean, 20, another 20, another
24 30. I don't know.

25 There may be some overlap in days. I

1 [REDACTED]
2 don't know.

3 But 105-plus.

4 Q. The aspect of the study that you're --
5 you conducted, that's described in paragraph 98,
6 which is a combination of the categories for
7 which you found statistical significance, was
8 limited to 113 unique relevant events on 105
9 days. Correct?

10 A. Almost correct. Section F is based on
11 113 unique events on 105 days.

12 What I'm -- just want to make sure
13 we're clear on is you said, categories for which
14 I found significant correlation. I believe that
15 was part of your question.

16 And this set of 113 events on 105 days
17 includes a category called acquisition and
18 investments, which in isolation, I do not find a
19 statistically significant correlation.

20 So it's not a combination of subsets,
21 each of which by themselves produced a
22 correlation. Most of them did. One of them in
23 isolation did not. I put them all together, and
24 in Section F studied that superset of 113 events
25 on 105 days.

1



2 Q. And this is the portion of your event
3 study that you primarily rely on to support your
4 observations about whether there is a collective
5 association between actions by Ripple and a
6 market impact on XRP. Correct?

7 A. Well, I -- I'm not sure about your use
8 of the word "primarily."

9 It is -- it is a set on which I do a
10 great deal of testing and robustness testing,
11 and it is certainly part of my opinion that
12 there is an association between Ripple Labs and
13 XRP prices.

14 Q. And that combination, reflects a
15 reduction from the 14 categories that you
16 initially identified as important events,
17 correct?

18 A. I wouldn't characterize it that way.
19 I did not identify them as important events.
20 Those were news found in -- among Ripple Labs'
21 curated news sources.

22 So whether I had an opinion that they
23 were important or not is not how that set was
24 formed.

25 Q. Didn't you select -- withdrawn.

1 [REDACTED]
2 Let's just talk about your methodology
3 so the record is clear.

4 A. Sure.

5 Q. You started off, with respect to your
6 effort to identify events, by pulling events
7 that were reported by Ripple on its website and
8 in other publications of Ripple, sponsored.
9 Correct?

10 A. Taking all of them. Yes. Right.

11 Q. And you assumed that Ripple would not
12 have put them on there unless Ripple thought
13 that they were important. Correct?

14 A. I assumed that Ripple Labs would
15 presumably have some basis for identifying some
16 things and not other things, yes.

17 Q. And that yielded an initial selection
18 of almost 700 news events, correct?

19 A. 700 articles, yes.

20 Q. And you then, with some adjustments,
21 categorized all of those events into 14
22 categories. Correct?

23 A. Yes. That is correct.

24 Q. And then with respect to the aspect of
25 your study that's reported or that you describe

1 [REDACTED]
2 in paragraph 98, you excluded 9 of those 14
3 categories. Correct?

4 A. I just want to refresh.

5 Q. I think that's right, 14 minus 5 is 9,
6 I believe.

7 A. The analysis in Section F is based on
8 five and, therefore, not based on nine, that's
9 correct.

10 Q. So for the study that you did in
11 paragraph 98 --

12 A. Yeah.

13 Q. -- you excluded nine categories --

14 A. Yes.

15 Q. -- correct?

16 A. That sounds right.

17 Q. And in those nine categories were
18 approximately 400 Ripple news events, correct?

19 A. That's -- that sounds correct.

20 Q. Are you aware of any academic studies
21 that support the exercise of subjective judgment
22 that reduces the number of events studied by
23 more than 80 percent?

24 A. Of course.

25 Q. And tell me why -- what you mean by

1 [REDACTED]
2 "of course."

3 A. I mean, I'm tempted to say
4 "obviously."

5 Well, many event studies can be
6 conducted on a single event and, therefore, are
7 not considering dozens or hundreds or maybe
8 thousands of other events.

9 It -- a -- a routine part of the event
10 study methodology is the selection of events.
11 That's how an event study methodology begins, is
12 with a selection of events.

13 Q. Would the results of your test of
14 collective events be different if you tested or
15 included all of the 514 news events in all of
16 the 14 categories that you initially identified?

17 MR. MOYE: Objection. Calls for
18 speculation.

19 A. I -- I don't know the answer. It's
20 not -- it's not pertinent to my opinions what
21 the answer to that question is.

22 I don't believe I ever tested all
23 events because it just wasn't -- it wasn't a
24 relevant or pertinent exercise to undertake.

25 Q. Would you agree with this statement

1 [REDACTED]
2 that mathematically, a set of events is more
3 likely to be jointly significant than individual
4 events? Correct?

5 Well, why don't I rephrase that.

6 A. Yeah, please.

7 Q. Mathematically, a set of events is
8 more likely to be jointly significant than an
9 individual event. Correct?

10 A. I -- I apologize. The question just
11 doesn't really make a great deal of sense to me.
12 A single event is a single event. A set of -- a
13 set of events, you can test the joint
14 significance of a set of events.

15 By definition, you cannot test the
16 joint significance of a single event. So I --
17 I'm just struggling with the question.

18 Q. Well, let's make it probabilistic. In
19 what circumstance are you more likely to find a
20 statistically significant correlation, randomly
21 picking one of your 514 news events from Ripple
22 and testing whether that event had a
23 statistically significant market impact, or
24 testing a larger number of Ripple events, to
25 test whether it has a statistically significant

1 [REDACTED]
2 market impact? And by "market impact," I mean
3 on XRP.

4 A. I -- I simply cannot engage with that
5 question. I don't understand it.

6 I'm sorry. I don't understand it.

7 Q. You don't think your odds of finding a
8 statistically significant correlation is greater
9 if you pick 105 news events than if you pick a
10 single one?

11 A. Absolutely not. There's no reason to
12 believe that it is.

13 Q. All right. Let me show you what we'll
14 mark as -- apologies. Where are we?

15 MR. MASTERMAN: 4.

16 MR. FIGEL: Thanks. Tab 4, and that's
17 the "Litigation Services Handbook, The Role
18 of a Financial Expert."

19 (Litigation Services Handbook, The
20 Role of a Financial Expert, was marked
21 Exhibit 4 for identification, as of this
22 date.)

23 Q. Are you familiar with this document,
24 Dr. [REDACTED]?

25 A. I don't think so.

1



2

MR. MOYE: Can you clarify whether

3

you're talking about the entire handbook or

4

just the section you've got here?

5

MR. FIGEL: Fair question.

6

Q. Why don't we start with the caption,
which is "Litigation Services Handbook." Are

8

you familiar with that publication?

9

A. I think I've heard of it.

10

Q. What context?

11

A. I don't know. Discussions.

12

Q. Would you agree this is a widely

13

accepted handbook that discusses the application

14

of economics and econometrics to litigation?

15

MR. MOYE: Objection. Foundation.

16

A. I -- I don't know that I'm in a

17

position to characterize it that way. It may

18

be.

19

Q. You don't know one way or the other?

20

A. No.

21

Q. All right. If you could -- the page

22

number's a little awkward here, but if you go to

23

the upper left-hand corner, you'll see something

24

that looks like 19 Bullet Point 2.

25

A. Uh-huh.

1 [REDACTED]
2 Q. And there's a section that says a
3 romanette a, "Overview of the Event Study
4 Technique."

5 Do you see that?

6 A. Uh-huh.

7 Q. Can you read the first sentence into
8 the record for us.

9 A. Event studies of the type used in
10 litigation rely on two well-accepted principles.
11 First, the semi-strong version of the efficient
12 market hypothesis, which states that stock
13 prices in an actively traded security reflect
14 all publicly available information and respond
15 quickly to new information.

16 Second, the price of an efficiently
17 traded stock is equal to the present value of
18 the discounted future stream, a free cash flow.

19 Q. Do you agree with the statement in the
20 Litigation Services Handbook that, Event studies
21 used in litigation should be based on a finding
22 of the existence of the semi-strong version of
23 the efficient market hypothesis?

24 A. As an absolute rule? No, I don't
25 agree.

1

2 Q. Why not?

3 A. I think it depends very much on the

4 context and the question being addressed.

5 I -- I would not be surprised that in

6 many contexts, that assumption is necessary.

7 But I don't think that in all contexts

8 that assumption is necessary.

9 Q. Do you believe that assumption is

10 necessary with respect to an event study that

11 seeks to prove the correlation between press

12 announcements by Ripple Labs and impact on the

13 market price of XRP?

14 A. Sorry, could you repeat the question?

15 Q. Do you believe that assumption, i.e.,

16 that you need a semi-strong version of the

17 efficient market hypothesis, is necessary to

18 identify, with reliability, the correlation

19 between press announcements by Ripple Labs and

20 any impact on the market price of XRP?

21 MR. MOYE: Objection. Compound.

22 A. May I restate the question back just

23 to make sure I understood it?

24 Q. Well, why don't -- yes, go ahead.

25 A. You're asking do I believe that the

1 [REDACTED]
2 market must be -- or we must -- we must assume
3 semi-strong efficiency to identify the
4 correlation between set of events and an impact
5 on market prices? Is that the question?

6 Q. No, it's broader than my question. So
7 I'll withdraw my question and try again.

8 Do you believe you need to have
9 evidence of a semi-strong efficient market in
10 order to conduct the event study that you
11 conducted in this case?

12 A. No.

13 Q. Why not?

14 A. Well, again, following the accepted
15 methodology and peer-reviewed literature, we
16 don't need the semi-strong hypothesis to hold to
17 conduct the event study of the type that I did.

18 Q. But you agree that the semi-strong
19 version of the efficient market hypothesis is
20 not present with respect to the market for XRP.
21 Correct?

22 A. Yes. I discussed this at length in my
23 report. The received evidence and the economic
24 literature, consistent with my own analysis, is
25 that the XRP digital token market was likely not

1 [REDACTED]
2 semi-strong efficient during the period of
3 interest.

4 Q. So if the Litigation Services Handbook
5 is correct that you need a semi-strong version
6 of the efficient market hypothesis to do an
7 event study of this nature, then the conclusions
8 of your event study would not be reliable,
9 correct?

10 A. You've -- you've put together a lot of
11 things in that question.

12 The semi-strong efficient hypothesis
13 is necessary to draw certain inferences from an
14 event study.

15 Those are not the inferences that I'm
16 drawing from my event study. They're not the
17 inferences that the Joo article draws from its
18 event study or Gerritsen or any other article.

19 If, if you conduct an event study, and
20 you find that there is no statistically
21 significant reaction in price following an
22 event -- so let's just -- let's just have an
23 example to fix ideas.

24 XYZ Enterprises issues a corrective
25 disclosure on January 1, and the question is,

1 [REDACTED]
2 Well, did that corrective disclosure cause the
3 stock price to drop. Or change.

4 You conduct an event study, and you
5 find no statistical evidence that stock prices
6 moved in the statistically significant way
7 following January 1.

8 Okay?

9 Question is what inference do you draw
10 from that lack of movement. If you want to say,
11 Well, because the price did not move, therefore,
12 the corrective disclosure was not important, if
13 you want to draw that inference from that
14 statistical result, you can only draw that
15 inference if you've established semi-strong
16 efficiency of the market.

17 Because otherwise, you're left
18 wondering, Well, perhaps the stock price simply
19 hasn't moved yet, perhaps we need to wait,
20 perhaps it will move next week.

21 The semi-strong efficient hypothesis
22 allows you to draw an inference from an absence
23 of movement.

24 I am not drawing inferences from the
25 absence of movement in this case, as the

1 [REDACTED]
2 peer-reviewed academic literature that applies
3 my event study methodology to markets, including
4 XRP, are not drawing inferences of that type.

5 So, that hypothesis, while necessary
6 in many contexts, is not necessary for the
7 purposes of the analysis that I'm conducting
8 here.

9 Q. Dr. [REDACTED], how do you know, if you
10 don't have a efficient market, that the price
11 impact that's reflected and that you are
12 correlating isn't due to an event -- another
13 event that predated the event you're measuring?

14 A. That's a very good question. And in
15 my opinion, one has to conduct some robustness
16 checks to reject that possibility. So, for
17 example, I conducted an analysis to see if there
18 was any correlation between events and price
19 movements three days before the announcement.
20 And I found across all of my models that there
21 was no correlation.

22 I've -- I've conducted robustness
23 checks on the length of the event window that I
24 considered. The report focuses on three days.
25 But I also conducted a robustness check on one

1 [REDACTED]
2 day and as long as seven days.

3 So, taken all together, it seems clear
4 to me that the prices were not moving before
5 this news was released, and yet began to move
6 even in a few hours of the news being released,
7 which is why I'm comfortable with the
8 conclusions and opinions that I've offered.

9 This, again, is consistent with the
10 accepted methodologies that you'll find in the
11 literature.

12 Q. What was the data that you relied on
13 to support the statement you just made that you
14 observed a statistically significant market
15 impact on XRP within hours of a news event?

16 A. It's -- it would be in, I think,
17 Appendix E of my report, if we can flip there.
18 I don't remember exactly -- I don't remember the
19 table number. But if you allow me to flip
20 through it, I'll point you to it.

21 I have a lot of appendices there. So
22 I just need to -- I just need to find it.

23 (Witness reviewing document.)

24 A. I'm getting my pages confused. Hang
25 on one second.

1



2 Q. Do you want to take a break and
3 collect your thoughts?

4 A. No, no. It will just take a second.
5 I'm just -- I'm turning the pages, and I just
6 don't want to get everything out of order.

7 I'm getting there. Too many tables.

8 That's the three days early.

9 Here it is. Page 15 of Appendix E.

10 This is the significance of the
11 correlation between --

12 Q. Give me just a second. I want to make
13 sure I am with you. I'm sorry. You said
14 page 15 of Appendix E?

15 A. Page 15 of Appendix E.

16 Q. Okay.

17 A. So that's the significance of
18 correlation between XRP price increases and
19 announcements in a one-day event window. That
20 means we're comparing -- so, again, suppose the
21 news comes out on January 1. We're comparing
22 the price at the end of the day on January 1,
23 with the price at the end of the day on
24 December 31, meaning with the news released at
25 some point in between, the markets had a few

1 [REDACTED]
2 hours to react to the event.

3 Q. Well, how do you know -- what data do
4 you have to support the claim that the markets
5 reacted within a few hours?

6 24 hours is the most you can say;
7 isn't that right?

8 A. Well, no. The news is -- 24 hours is
9 the longest it could be; one minute is the
10 shortest it could be. So, presumably, we're
11 talking about some time period in the interval
12 between one minute and 24 hours.

13 Q. Did you have data that allowed you to
14 measure the time between the release of the
15 press release and the market impact?

16 A. Yes, because when we review the time
17 stamps on our events, there is a UTC hour and
18 minute.

19 Q. And what about the price data?

20 A. The price data is taken at the end of
21 the day UTC time.

22 Q. So it's somewhere between 24 hours --

23 A. And one minute.

24 Q. -- and one minute. But you can't say
25 more specifically --

1

2 A. I could. I mean, I'd have to go --

3 Q. Let me finish my question, please,

4 Dr. [REDACTED].

5 You can't say more specifically than

6 you believe you observed a price impact between

7 the release of event and the market price, other

8 than somewhere within one minute and 24 hours.

9 Correct?

10 A. Well, if this -- I could, because we

11 have the time stamps on the articles. So we

12 could go article by article, and we could

13 calculate the elapsed time between the

14 publication of that article and the -- and the

15 close of the day.

16 Q. Did you do that study, Dr. [REDACTED]?

17 I know you -- I know you say you

18 could. My question is, did you do it?

19 A. No, I did not do that.

20 Q. You don't have a basis to say that the

21 observed price impact on the market for XRP

22 occurred within hours of a news event unless you

23 mean within 24 hours, correct?

24 A. No, that's not correct. Of course, I

25 have a basis for that, I looked at those UTC

1 [REDACTED]
2 times, they were not all 12:01 a.m. of day.

3 Many of them were in the afternoon;
4 some were in the morning. So, yes, I have a
5 basis to know that in many cases, the close of
6 the day is just within a few hours of the
7 publication of the news.

8 Q. Did you control for number of minutes
9 or number of hours between release of an event
10 and an observed price impact?

11 A. That is not a control variable in
12 these regressions, no.

13 Q. So if I understand your testimony,
14 you're contending that your study with the
15 one-day event window is sufficient to overcome
16 the absence of an efficient market. Correct?

17 A. No, that's not my testimony.

18 Q. Well, are you contending that the fact
19 that you used a one-day event window in some of
20 your robustness studies is sufficient to remove
21 any reliability issues from the fact that XRP
22 does not trade in a weak form or semi-strong
23 form efficient market?

24 A. No, that was not my testimony either.

25 Q. Let's be clear about it.

1



2

What, if anything, are you saying

3

about the fact that you conducted a one-day

4

event -- a one-day event window, and the absence

5

of what you concede is the lack of an efficient

6

market for XRP?

7

A. I pointed to a number of robustness

8

tests and studies that I did as part of my

9

research. So one possible view, which as a

10

logical matter cannot be precluded a priori, is

11

that when we see price reactions on these days,

12

it might possibly be due to something that

13

happened before the event in question. If the

14

market is not semi-strong efficient, one cannot

15

say in principle that that's impossible. It

16

could be true.

17

So to test that hypothesis, I

18

looked -- I looked at the question. I said,

19

well, were prices -- is there a correlation

20

between the news and price movements in the days

21

leading up to the news?

22

And answer was no. In addition to

23

that, I looked at a very short window, a one-day

24

horizon, which in many cases is only allowing a

25

few hours of response. And I found a

1 [REDACTED]
2 correlation that was yes.

3 This plus the other work that I did
4 allows me to reach the opinion that what we are
5 seeing in the prices is due to events on the day
6 in question and not due to events prior to that
7 or after that.

8 Q. And my question is, you believe that
9 that methodology that you just described allows
10 you to reach a reliable conclusion conceding
11 that XRP does not trade in an efficient market.
12 Correct?

13 A. Correct. Because the methodology that
14 I'm applying, again, is found -- it's
15 well-accepted methodology found in the
16 literature where the -- where the -- academics
17 studying a different set of events, but
18 essentially investigating a similar question,
19 asking does this set of events move XRP prices,
20 those studies acknowledge the relative
21 inefficiency of this market, they apply the
22 methodology, and they reach their inclusions.

23 Q. Just so the record is clear, you're
24 not contending that the -- that proof of an
25 efficient market is necessary for you to reach

1 [REDACTED]
2 those conclusions, correct?

3 MR. MOYE: Objection. Asked and
4 answered.

5 A. I -- as I've testified my report
6 acknowledges that this market is almost
7 certainly not as informationally efficient as
8 the stock market. Academic studies acknowledge
9 the same thing. They then proceed to apply a
10 methodology, which I apply to the matter at
11 hand. They apply it to the XRP market as I
12 apply it to the XRP market. And the inferences
13 that we draw are perfectly valid, even in the
14 absence of semi-strong market efficiency.

15 Q. All right. If we could now go to
16 Tab 5, which is the binder article that you cite
17 in your report.

18 MR. MOYE: Are you marking a new
19 Exhibit 5?

20 MR. FIGEL: Yes. Yes. I think we're
21 up to 5.

22 (Academic Paper titled "The Event
23 Study Methodology Since 1969" was marked
24 Exhibit 5 for identification, as of this
25 date.)

1



2 Q. You're familiar with this academic
3 paper, correct?

4 A. I am.

5 Q. And you cite it in your report?

6 A. Uh-huh.

7 MR. MOYE: You have to say yes or no.

8 A. Yes.

9 Q. If you could read into the record the
10 portion of this article beginning at the -- near
11 the bottom of the first full paragraph under
12 "introduction," beginning with "event study" and
13 ending with "securities holders."

14 A. I'm sorry. The -- in the second
15 paragraph below --

16 Q. The first -- well, the first -- I'm
17 sorry. Second -- yeah, there is a paragraph
18 there. The second paragraph under
19 "introduction." Right after Footnote 1, just
20 read the -- the sentences to the end of the
21 paragraph, beginning with "event study."

22 A. The event study methodology has, in
23 fact, become the standard method of measuring
24 security price reaction to some announcement or
25 event.

1

2 Want me to continue reading?

3 Q. Yes. Continue to the end the

4 paragraph, if you would.

5 A. In practice, event studies have been

6 used for two major reasons: To test the null

7 hypothesis that the market efficiently

8 incorporates information (See Fama 1991 for a

9 summary of this evidence); and, two, under the

10 maintained hypothesis of market efficiency, at

11 least with respect to publicly available

12 information, to examine the impact of some event

13 on the wealth of the firm's security holders.

14 Q. All right. And what's your

15 understanding of what Binder says is the first

16 reason for conducting an event study?

17 A. So the -- the event study, meaning

18 the -- the statistical analysis of regression

19 and the interpretation of the results, can be

20 used to test whether prices adjust quickly to

21 certain announcements such as earnings

22 announcements.

23 That can be part of an investigation

24 into whether or not a particular market is

25 efficient.

1

2 Q. And you didn't do that study in
3 connection with the opinions expressed in your
4 two reports in this case. Correct?

5 A. I didn't -- I didn't conduct that
6 particular study, no.

7 Of course, I reviewed the academic
8 literature on efficiency and digital token
9 markets. And I did conduct another type of
10 econometric test of efficiency to satisfy myself
11 that I agreed with those academic results.

12 But I didn't conduct precisely the
13 test that's described in this first point here.

14 Q. And the point of that test is to
15 determine whether the market is efficient.
16 Correct?

17 A. As described here, yes, that -- that
18 could be a use of the event study methodology.

19 Q. And you didn't do that because we are
20 in agreement that the market for XRP is not
21 efficient. Correct?

22 A. It is certainly -- or I say
23 "certainly." There's a significant amount of
24 evidence that this market is less
25 informationally efficient than, say, the U.S.

1 [REDACTED]
2 stock market. I don't dispute that.

3 Q. And you just gave us a long exegesis
4 on all the reasons why you thought that proof of
5 an efficient market was not necessary in order
6 for you to reach a reliable conclusion, correct?

7 MR. MOYE: Are you describing his
8 prior -- his prior answers? When you say
9 long exegesis?

10 MR. FIGEL: Yes, that's what I mean.

11 MR. MOYE: Thanks.

12 A. You're asking me whether it's correct
13 that it's been a long exegesis, or --

14 Q. I think that's undisputed.

15 No, I'm asking you whether the
16 takeaway from your long answers was that you did
17 not believe that it was a prerequisite to the
18 reliability of the opinions you're expressing
19 that XRP traded in an efficient market, correct?

20 A. Sure, right.

21 Consistent with the peer-reviewed
22 academic literature, that's correct.

23 Q. All right. And then going on back to
24 Mr. Binder, you'll see he says that the second
25 reason for using an event study assumes, in his

1 [REDACTED]
2 words, the maintained hypothesis of market
3 efficiency.

4 And in your study, you have not -- you
5 do not have an assumed hypothesis of market
6 efficiency with respect to the market for XRP,
7 correct?

8 A. Correct.

9 Q. And under Point 2 in Mr. Binder's
10 study, he refers to market efficiency, and he
11 describes it as, At least with respect to
12 publicly information -- publicly available
13 information. Correct?

14 A. Correct.

15 Q. And that's economist code for
16 semi-strong efficiency?

17 A. That's how I would interpret that,
18 yes.

19 Q. Let's go to what I'll ask to be marked
20 as Exhibit 6, and directing your attention to
21 the work you did in the Rio Tinto case.

22 A. Uh-huh.

23 (Sworn declaration of Dr. [REDACTED]
24 in Rio Tinto case was marked Exhibit 6 for
25 identification, as of this date.)

1



2 A. Yes.

3 Q. All right.

4 Just take moment. This is a -- copy
5 of your declaration in Rio -- in the Rio Tinto
6 case?

7 A. It appears to be, yes.

8 Q. And give us the context in which you
9 prepared this declaration.

10 A. Well, that might be another long
11 answer. But -- if that's okay.

12 Q. All right. I withdraw it. I'm sorry.

13 A. No, it's -- you want me to answer the
14 question?

15 Q. No, I don't, not if it's going to be a
16 long answer.

17 Let's go to page 11. I'm sorry,
18 paragraph 11.

19 A. Page 11 only has my signature.

20 Q. I'm sorry, it's paragraph 11 on
21 page 6.

22 A. Got it.

23 Q. Can you read -- read the whole
24 paragraph for us.

25 A. Excuse me.

1 [REDACTED]
2 Statistical results such as the output
3 of a regression model are necessary but not
4 sufficient to conduct a complete analysis of the
5 type I present in my reports concerning the
6 ADRs. Assessing market efficiency is necessary
7 to support certain conclusions and form certain
8 opinions.

9 Q. And this was a sworn declaration,
10 correct?

11 A. Correct.

12 Q. So in substance what you're saying is
13 that assessing market efficiency is necessary to
14 form certain opinions reached through conducting
15 an event study, correct?

16 A. Yes, that's correct.

17 Q. And is it correct, in your opinion,
18 that an assessment of market efficiency was
19 necessary to conclude that Ripple's news events
20 had an impact on the market price of XRP?

21 A. I'm sorry, could you repeat it?

22 Sorry.

23 Q. And is it correct that in your
24 opinion, an assessment of market efficiency was
25 necessary to conclude that Ripple's news events

1 [REDACTED]
2 had an impact, a statistically significant
3 impact, on the market price of XRP?

4 A. So, I -- I thought you were going to
5 ask about Rio Tinto, but you're asking about
6 Ripple.

7 Q. Uh-huh.

8 A. So the question is, in my opinion, was
9 an assessment of market efficiency necessary to
10 form an opinion?

11 Q. Uh-huh.

12 A. That was the -- that was the question?

13 Q. Reliable opinion.

14 A. Well, as I -- as I've testified, it
15 depends on the nature of the opinion. It -- the
16 market -- the XRP market does not need to be
17 semi-strong efficient in order for -- in order
18 to draw the inferences and reach the conclusions
19 that I did for XRP and that other academics have
20 in the XRP market.

21 The -- it comes down to what inference
22 are you trying to draw from the statistical
23 result. And I -- I don't know what I'm allowed
24 to talk about in Rio Tinto, but let's just say
25 hypothetically -- and maybe I don't even have

1

2 to -- I don't know -- I don't know the rules.

3 Hypothetically, it's possible that you

4 could be arguing about the meaning of a

5 non-result; in other words, the price does not

6 move statistically. And so what does that mean?

7 Well, depending on the inference you

8 want to draw from that null result, you may need

9 to have established at least semi-strong market

10 efficiency.

11 Q. The opinion you expressed in your

12 declaration in Rio Tinto was that assessing

13 market efficiency was necessary to support

14 certain conclusions and form certain opinions,

15 correct?

16 A. Certain conclusions and certain

17 opinions, yes.

18 Q. Okay. And my question was, was an

19 assessment of market efficiency necessary, in

20 this case, in Ripple -- in the Ripple case, to

21 support the conclusions and opinions that you

22 reached?

23 A. Well -- so I've testified about this a

24 few times now. Your -- your question now is a

25 little bit different.

1 [REDACTED]
2 I think it is important to assess the
3 efficiency, yes, because understanding whether
4 the market is, let's say, as informationally
5 efficient as the stock market or if it is less
6 informationally efficient than the stock market,
7 understanding that could inform how you conduct
8 the test.

9 For instance, do you only look at a
10 one-day event window, do you look at a three-day
11 event window, so on, so forth.

12 So I do think it is important, and, of
13 course, I did it to assess the efficiency.
14 However, establishing that the market is
15 semi-strong efficient is not necessary to reach
16 the opinions that I've reached in the Ripple
17 matter.

18 Q. So I understand your testimony, you
19 said that market efficiency is not relevant to
20 reaching an opinion about the absence of market
21 impact. Correct?

22 Is that a fair summary of what you
23 said?

24 A. I don't know.

25 I'm trying to go through the

1 [REDACTED]
2 negatives.

3 I apologize, just walk -- could you
4 repeat it?

5 Q. As I understood your testimony, you
6 said market efficiency is not necessary to
7 conduct an event study that proves the absence
8 of market impact.

9 A. No.

10 If you're going to draw an inference
11 from a single event, which, of course, is not
12 what we're doing in the Ripple matter, but may,
13 for instance, have been something that was being
14 done in the Rio Tinto or other matters, if
15 you're going to draw an inference from a single
16 event which presents a statistical result that
17 prices do not appear to react in a statistically
18 significant way, if you then want to draw an
19 inference, Well, then, therefore, this event did
20 not impact this price, that inference requires
21 establishing semi-strong market efficiency.

22 Other types of inferences do not
23 necessarily require establishing semi-strong
24 efficiency.

25 Q. Does the presence or absence of market

1 [REDACTED]
2 efficiency effect a result in which you are --
3 you are rejecting a null hypothesis?

4 A. Does the presence or absence -- I'm --
5 please, one more time.

6 Q. Sure. Does the presence or absence of
7 market efficiency -- sorry.

8 I've got a glitch here on the
9 LiveNotes.

10 No, this -- I think I've got it now.

11 All right. Does the presence or
12 absence of market efficiency effect a result in
13 which you reject a null hypothesis?

14 A. Does it effect a result in which you
15 reject a null hypothesis? Which null hypothesis
16 are we rejecting?

17 Q. Whichever one you posit.

18 MR. MOYE: Objection. Compound.

19 A. Let me try and -- let me try and
20 understand this question.

21 The null -- so I'll just tie it to the
22 null hypothesis that was at issue in my analysis
23 in this case.

24 The null hypothesis is that
25 Ripple Labs and its actions and news about its

1 [REDACTED]
2 actions is independent of the XRP market price.

3 That's the null hypothesis.

4 All right. Assuming that that is
5 true, assuming that they are independent,
6 certain things follow. If those things do not
7 follow to a statistically significant extent,
8 one can reject the hypothesis of independence.

9 Q. I'm sorry. One can or cannot?

10 A. Can.

11 All right. So -- so if it's
12 independent, certain things should be true. If
13 those things are not true, in the sense of they
14 are so unlikely, then that allows a researcher
15 to reject the null hypothesis of independence.

16 The analysis that I conducted did
17 not -- did not and does not require that the XRP
18 market be semi-strong efficient, just as the
19 academic studies we've been talking about this
20 morning do not require semi-strong efficiency to
21 reject the hypotheses that they reject.

22 Q. Go back to your Rio Tinto declaration,
23 paragraph 16. You mention a 10-factor review
24 you did to market efficiency for the bond market
25 for -- in Rio Tinto, correct?

1



2 A. All right. Not to the bond market,
3 but to the ADR -- ADR market.

4 Q. Did you conduct a 10-factor analysis
5 of the efficiency of the market for XRP in this
6 case?

7 A. No, I did not. I didn't see any need
8 to.

9 Q. All right. If we could go to
10 Appendix F of Exhibit 1.


11 A. Yes.

12 Q. Why did you include Appendix F in your
13 report?

14 A. A couple reasons.

15 It -- it may have been, probably was,
16 adequate to cite to the academic literature on
17 the relative inefficiency of the XRP market.
18 But nevertheless, I wanted to conducted at least
19 a -- a simple analysis of that question.

20 Probably more importantly, I wanted to
21 explain why half -- why my statistical models or
22 at least half of them correct for serial
23 correlation in the XRP market. Since I'm going
24 to maker that correction, I thought I should
25 show the evidence that the serial correlation is

1 
2 present at least at some times in the history of
3 the XRP market.

4 So it was with those two objectives
5 that I included Appendix F.

6 Q. And with respect to market efficiency,
7 what you found was -- and I'm going to use rough
8 numbers here -- approximately 50 percent of the
9 days, you found that the market for XRP was not
10 even weak-form efficient, correct?

11 A. I don't -- you may be right. I don't
12 remember the 50 percent of days.

13 Q. I'm eyeballing it based on Figure 1.

14 A. Yeah, I mean, I might agree with your
15 eyeball. It might be about 50 percent the days.
16 It's certainly not just one.

17 Q. And just so the record is clear -- I
18 think it's clear from your report -- you put an
19 orange dot --

20 A. Right, where it's significantly
21 different --

22 Q. Let me just finish my question.

23 You put an orange dot on the graph to
24 reflect those days in which, based on your
25 autocorrelation study, you found that the market

1 [REDACTED]
2 was not -- was not even weak-form efficient,
3 correct?

4 A. Yes, that's correct.

5 Q. Did you calculate an autocorrelation
6 study for Figure 1 using a period other than
7 180-day rolling window that you reference in
8 paragraph 5?

9 A. I don't -- I don't remember if I did
10 anything other than 180 days.

11 To me, it was enough that with 180-day
12 window, you'd find evidence of serial
13 correlation. That was enough to motivate me to
14 make sure that I used regression models that
15 correct for autocorrelation.

16 MR. FIGEL: It's noon. This is really
17 just -- you're the -- you're the person on
18 the hot seat. Would you like to take a
19 break and go to 1:00? Do you want to break
20 for lunch now? I'm indifferent to whatever
21 your preference is.

22 THE WITNESS: How long have we been
23 going since our last break.

24 MR. FIGEL: Hour and 20 minutes --

25 THE WITNESS: I suppose that's

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appropriate. Why don't we --

MR. MOYE: Let's take lunch break now.

MR. FIGEL: Lunch break now. Okay.

THE VIDEOGRAPHER: We are going off
the record at 12:01 p.m.

(Luncheon recess at 12:01)

1

2 AFTERNOON SESSION

3 (12:56)

4 [REDACTED], Ph.D.

5 resumed, having been previously duly

6 sworn by a Notary Public, was

7 examined and testified further

8 as follows:

9 CONTINUED EXAMINATION BY MR. FIGEL:

10 THE VIDEOGRAPHER: We are back on the
11 record at 12:56 p.m.

12 Q. Good afternoon, Dr. [REDACTED]. I would
13 like to direct your attention back to the
14 approximately 514 events that you divided into
15 the 14 categories.

16 A. Yes.

17 Q. First, did you do an individualized
18 assessment on each of those 14 events to
19 determine whether, standing in isolation, they
20 had a statistically significant impact on the --

21 A. No.

22 Q. -- price of XRP?

23 A. No. I did not test each of those
24 events individually.

25 Q. What methodology, if any, did you use

1 [REDACTED]
2 in developing, or identifying, the 14
3 categories?

4 A. Categorizing events is part of the
5 event study methodology. And I applied my
6 understanding of economics and general judgment
7 to try and create a taxonomy of categories which
8 was helpful and complete.

9 Q. Was there any academic literature,
10 accounting -- I mean any academic literature or
11 econometric guidance that you looked to in
12 formulating those categories?

13 A. Well, again, categorizing news is
14 simply part of the event study process. So, for
15 example, in -- and I -- I tend to mix the two
16 studies up, but either Gerritsen or Joo or both,
17 they collect a set of events, and they then
18 categorize them by whether it's positive or
19 negative. That's part of the process.

20 But -- other event studies, looking at
21 other topics, will collect a set of events and
22 will characterize them by different types.

23 So characterizing events, categorizing
24 them, I view as simply part of the event study
25 methodology.

1

2 Q. But the categories reflect your
3 subjective judgment, correct?

4 A. The categories reflect judgment of
5 what I think is a helpful taxonomy of how to
6 organize these 700 articles.

7 Q. But it's your judgment, correct?

8 A. It is my judgment, yes.

9 Q. And it's not guided by any economic or
10 econometric guidance or protocols that informs
11 how you allocate the events into specific
12 categories. Is that correct?

13 A. Well, it is guided by my
14 understanding, general understanding of
15 economics, in terms of how it might be useful
16 when formulating an event study analysis to
17 group certain events together as separate from
18 other events.

19 Again, I -- I don't view that as
20 separate and distinct from the event study
21 methodology. I view it simply as part of the
22 event study methodology.

23 Q. Do you disagree with this statement:
24 Classifying news is necessarily a subjective
25 exercise?

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2 A. I agree that there is necessarily an
3 element of subjectivity in the categorization of
4 news. Again, that's part of the accepted event
5 study methodology. It's an irreducible part of
6 the event study methodology.

7 Q. Other than your judgment, did you rely
8 on any external guidance or factors to help you
9 identify the categories?

10 A. I -- I discussed the categorization
11 with members of my team. But ultimately, it
12 reflects my judgment on a useful taxonomy of
13 these categories -- or, I'm sorry, of these
14 events.

15 Q. And as we discussed previously, your
16 opinion that statistically significant price
17 movements in XRP are correlated with Ripple news
18 events is based on your analysis of just 5 of
19 those 14 categories. Correct?

20 A. No, I don't agree with that. It's --
21 I reviewed several categories in reaching that
22 opinion. I also conducted robustness checks,
23 including robustness around the possibility that
24 I had miscategorized or misclassified news
25 events. And I found that the statistical

1 [REDACTED]
2 results were robust. They held across all of
3 those variations.

4 Q. Let's go to paragraph 48(b) of your
5 report, Exhibit 1.

6 A. Yes, 48(b).

7 Q. These are the categories that you
8 selected?

9 A. That's correct.

10 Q. All right. And five of these
11 categories are categories that you -- the events
12 for which you put together in a single
13 collective study that you described in
14 paragraph 100, correct?

15 A. Yes, I believe it was five.

16 Q. And those are milestones, trading
17 platform listings, customer and product
18 acquisition and investment, and Ripple
19 commercialization. Correct?

20 A. Yes, that's correct.

21 Q. So that's five; is that right?

22 A. Yes.

23 Q. Put those aside.

24 Of the remaining nine, how many did
25 you examine as a stand-alone category to see

1 [REDACTED]
2 whether you could find a statistically, quote,
3 significantly -- statistically significant
4 correlation between the events in that category
5 and the market price of XRP?

6 A. In addition to those five, I performed
7 an analysis on other initiatives, and office and
8 staff announcements.

9 Q. And just so the record's clear, you
10 then did not do an independent statistical
11 analysis on case study, charity, corporate
12 activity and announcement, litigation, market
13 commentary and company review, markets reports,
14 or miscellaneous. Correct?

15 A. That's correct. It wasn't necessary
16 to reach my opinions.

17 Q. And with respect to the studies you
18 did, or the analysis you did of the other
19 initiative and office and staff announcement
20 category, what was the conclusion of your
21 analysis as to whether the events in those
22 categories had a statistically significant
23 impact on the price of XRP?

24 A. I found no evidence of a -- no
25 evidence of a correlation between the

1 [REDACTED]
2 announcements in those categories and
3 significant XRP price increases.

4 Q. So now we've got seven that I'm going
5 to ask you to put aside, and the remaining
6 seven, the ones that you said you did not
7 perform an analysis of with respect to the
8 events in that category. You with me?

9 A. Yes.

10 Q. With respect to those seven other
11 categories, as you sit here today, you don't
12 know whether the events in those categories,
13 standing alone or collectively, had a
14 statistically significant impact on the price of
15 XRP, correct?

16 A. Correct, sitting here today, I do not
17 know the answer to that question. It wasn't
18 germane to my -- I -- it wasn't necessary for me
19 to reach my opinion.

20 Q. And fair to say that the reason you
21 didn't perform a -- an analysis of the events in
22 those categories is, your judgment was that
23 based on the nature analyses, it was unlikely
24 that they would have a statistically significant
25 impact on the price of XRP. Correct?

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2 A. I -- I'd say it was a little bit more

3 nuanced than that.

4 That's -- that's partially true, and

5 certainly true of some categories. I would say,

6 you know, even if we believe that Ripple Labs

7 impacts XRP markets, even if we take that as

8 true, for example, when they publish a couple of

9 paragraphs talking about somebody who has used

10 the product and -- and had a good experience

11 with it, I -- my expectation before running an

12 analysis would be, I don't -- I would be

13 surprised if that moved prices. It just doesn't

14 seem like the sort of thing that would move

15 prices.

16 So in some cases, I agree, we could

17 probably go through categories and -- and I

18 would give you the answer that my expectation --

19 even presuming a link between Ripple Labs and

20 XRP, my expectation would be you probably

21 wouldn't see an association there.

22 But the -- the -- the real point is,

23 it wouldn't -- it wouldn't particularly interest

24 me whether we saw an association there.

25 So let me explain that for a second.

1 [REDACTED]
2 If there was no correlation between customer and
3 product announcements of banks signing up to
4 RippleNet and all those other things, if there
5 was no correlation there, and yet there was a
6 correlation among, you know, corporate
7 overviews, or announcing who's going to speak at
8 an upcoming conference, right?

9 So suppose there's no correlation
10 among customer and product but there is a
11 correlation among the announcements and speakers
12 of upcoming events. Personally, I wouldn't find
13 that terribly persuasive of a connection between
14 Ripple Labs and XRP markets.

15 On the other hand, if there is a
16 connection between customer and products
17 announcing growth in RippleNet and new people
18 signing up, and yet there was no correlation
19 among announcements of upcoming speakers at
20 conferences, again, I -- first of all, that
21 wouldn't surprise me. But second of all, it
22 wouldn't -- it wouldn't alter my opinion.

23 So I viewed some categories as
24 meaningful to test in the sense that if we found
25 a correlation, or if we did not find a

1 [REDACTED]
2 correlation, that would be economically
3 interesting to the question at hand.

4 And then there were other categories
5 that I set aside where, in my view, whether you
6 found it or didn't find it wouldn't really
7 provide any -- much compelling evidence one way
8 or the other.

9 So I just didn't think they were worth
10 testing.

11 Q. All right. And just so the record's
12 clear, of the seven we're talking about now that
13 you didn't test, why don't you identify for us
14 which ones you expect would not have a
15 statistically significant correlation between
16 the event and the impact on the price of XRP.

17 A. Well, I'm happy to do that, just --
18 just so we understand, you -- you're really just
19 asking for my just prior expectation. And I
20 haven't run the analysis, I don't know the
21 answer.

22 My prior expectation is that the
23 events in the case study category, which
24 generally are articles on the Ripple Insights
25 page where a bank or a financial institution,

1 [REDACTED]
2 you know, discusses how they've used RippleNet
3 and -- and how it was fast and it was
4 inexpensive --

5 Q. I don't mean to interrupt you. I'm
6 just asking you to identify which ones -- as you
7 sit here today, you don't have an expectation
8 today or you --

9 A. Sorry.

10 Q. A list would be fine. The reasons why
11 are less important and they're not responsive to
12 the question I'm asking you.

13 A. Okay. I -- I understand.

14 Q. I'm sorry to interrupt you.

15 A. Again, I would -- case study.

16 Probably charity.

17 The litigation category, I -- you
18 might expect a negative reaction, but there are
19 very few events there so it was awfully small to
20 test.

21 Market commentary and company
22 overview, again, those are sort of puff piece
23 articles. I wouldn't -- I wouldn't think that
24 would move the price but --

25 The markets report, I wouldn't have

1 [REDACTED]
2 expected to move the price.

3 The miscellaneous, I'm trying to
4 remember what's in there. I think the -- what
5 is it, the Arrington XRP hedge fund. There's
6 not -- there are very few things in there. May
7 I consult Appendix C to remind myself?

8 Q. You're welcome to consult anything you
9 need to make sure your testimony is complete and
10 accurate.

11 A. Okay. Thank you.

12 I just -- just want to remind myself
13 what's in that category.

14 (Witness reviewing document.)

15 A. Miscellaneous. So yeah, hackathon
16 challenge, yeah, the Arrington fund. The
17 Arrington fund, you know, that's an interesting
18 event, but it doesn't really belong in any other
19 category, at least in -- in my estimation.

20 Right, so, you know, this -- this set
21 of events, it's kind of a mixed bag. I really
22 don't know what my prior expectation would be on
23 that set of events. And I think that's --
24 that's it.

25 Q. That's all. That's correct. Thanks.

1



2 So let me direct your attention to

3 general market commentary.

4 A. Uh-huh.

5 Q. And I guess what -- I guess what the

6 category is -- market commentary and company

7 overview is the category.

8 A. Correct.

9 Q. All right.

10 So you rejected the possibility that

11 XRP might have a statistically significant price

12 impact on XRP -- withdrawn.

13 So you reject the likelihood that --

14 of -- press releases about market commentary and

15 company -- and Ripple company overview would

16 have a statistically significant impact on the

17 price of XRP?

18 A. Well, with respect to your language,

19 it's -- to reject the likelihood, that sounds

20 like a --

21 Q. Well --

22 A. -- scientific procedure. You asked me

23 my ex ante expectations. That's -- that's all

24 they were.

25 Q. All right. As you sit here today,

1 [REDACTED]
2 it's your view, your judgment, that the events
3 that were -- that you put in the category of
4 market commentary and company overview would not
5 have a statistically significant impact on the
6 price of XRP, correct?

7 A. I still think your language is
8 overstating the strength of my conviction.
9 My -- my ex ante expectation is that it won't.
10 I wouldn't -- I wouldn't elevate that to a -- to
11 a view or an opinion. I -- you asked my
12 opinion, you know. You asked me, do I think it
13 would. I -- my expectation is that it wouldn't.
14 That's all I can say.

15 Q. And just so the record's clear, and
16 you didn't do a -- an analysis of this category
17 to de-- to answer that question. Correct?

18 A. Correct. I don't recall doing an
19 analysis of this category to determine one way
20 or the other.

21 It -- I mean, it -- a lot of the
22 things in this category -- this is, I think, the
23 single largest category. A lot of it is
24 third-party articles about what is
25 cryptocurrency, and maybe they have a paragraph

1 [REDACTED]
2 about what is XRP, who is Ripple. It's a lot of
3 just general market commentary, as the name
4 suggests.

5 And my expectation is, I'd be
6 surprised if that moved prices. It might. But
7 I just -- I would be surprised.

8 Q. Okay. And the consequence, or the
9 result, of excluding the events in the
10 nine categories that you didn't include in the
11 regression that you described in paragraph 100,
12 was to reduce the number of Ripple events from
13 approximately 514 to 113. Correct?

14 A. Well, that's -- yes, that's -- that's
15 correct. We start with 514 events, and we end
16 up studying 113 events, if I recall.

17 Q. Now, when you describe the process by
18 which you conducted your analysis in your
19 report, if I understand it correctly, the first
20 thing you did was to regress market prices of
21 XRP against 20 different models to determine
22 what days there was a statistically significant
23 change in the price of XRP. Correct?

24 A. Rather than XRP prices, if you had
25 said XRP returns, yes. I -- I conduct -- I run

1 [REDACTED]
2 20 different regression models of XRP returns,
3 against different -- 20 different sets of
4 control variables.

5 Q. I accept the clarification, and I
6 appreciate it.

7 But as a result of running the price
8 data of XRP, against those 20 different models
9 you are able to identify on a day-by-day basis
10 each day in which there was a statistically
11 significant price return of XRP, correct?

12 A. That sounds generally correct. Yes.

13 Q. Did you consult the results of that
14 aspect of your study before you decided to
15 exclude the approximately 401 events, that you
16 put in the nine categories that we just
17 discussed?

18 A. No. No. My -- my -- my organization
19 of the news events was conducted without
20 reference to results from the statistical
21 models. It was based on my economic
22 understanding of -- my economic understanding.

23 Q. I'm not sure your answer was
24 responsive to my question. Let's just talk
25 about temporally or chronologically.

1 [REDACTED]
2 As you described in your report, the
3 first thing you did was identify the days in
4 which there's a statistically significant price
5 return for XRP. Correct?

6 A. Now, you -- all right. You really
7 want to talk about the temporal sequence in
8 which certain things were done.

9 We pulled -- you know, I -- we
10 collected the news from Ripple Labs as one of
11 the very first thing we did. Perhaps in
12 parallel and simultaneously, we collected
13 pricing data on digital tokens. But I certainly
14 don't want to leave any suggestion that there
15 was some kind of review of the statistical
16 results which then informed the selection of
17 news categories. That's categorically not true.

18 Q. How do you know that?

19 A. Because I conducted the study.

20 Q. I thought you said you had a team of
21 people that were evaluating the data and making
22 recommendations to you.

23 A. All I -- I conducted the study. It
24 is -- it was my determination of how to
25 categorize the news. I just -- I -- I can state

1 [REDACTED]
2 categorically that it was not -- the selection
3 of events or categories, was not informed by a
4 review of statistically significant results.
5 That would be an improper procedure.

6 Q. But at least the way you described the
7 process in your report -- give me just a second.
8 Sorry.

9 So let's go to page 28 of Exhibit 1.

10 A. Yes.

11 Q. You -- you -- you there -- you set out
12 on this page in -- in Section E a summary of the
13 empirical methodology. Correct?

14 A. Yes.

15 Q. And you say, first, you specify the
16 regression model of XRP returns, correct?

17 A. Uh-huh.

18 Q. And you identify the event window.

19 A. Uh-huh.

20 Q. And then you estimate the cumulative
21 abnormal returns for each trading day, correct?

22 A. Uh-huh.

23 Q. And then you --

24 MR. MOYE: You have to say yes or no.

25 THE WITNESS: I'm sorry.

1



2 A. Yes.

3 MR. FIGEL: Thanks.

4 Q. You tested using you both parametric
5 and nonparametric approaches, correct?

6 A. Correct.

7 Q. And that tells you on a day-by-day
8 basis which days there is a statistically
9 significant price return for XRP, correct?

10 A. Correct.

11 Q. And then the last thing you say you do
12 here is, finally, you examine the interaction
13 between the set of news days you've identified
14 and the set of days with positive returns.

15 A. Correct.

16 Q. It suggests that you had identified
17 the number of days with a statistically
18 significant price return before you applied the
19 event days in which you were looking for a
20 correlation.21 A. I'm genuinely surprised that you read
22 it that way. I read it -- of course, I know
23 what was done -- as saying, these are -- these
24 are the -- the steps of the empirical analysis
25 to which we then apply that to a set of news,

1 [REDACTED]
2 that we have identified. It doesn't say, we do
3 this analysis to then determine the set of news
4 that we will then test. I mean, you're
5 inserting that step that's not there.

6 Q. Well, the first thing that you
7 describe in your summary of the empirical
8 methodology is a process by which you identify
9 the days on which there is a statistically
10 significant price return. Correct?

11 A. This is laying out the -- in a way
12 that is meant to be helpful, a sequence of
13 events that must be conducted in this order. In
14 other words, you have to begin by specifying a
15 regression, et cetera, et cetera, et cetera.
16 All of that then gets applied to a set of events
17 that you want to study.

18 Now, if -- if it would -- if you would
19 like -- I mean, we could have inserted a
20 paragraph in the beginning that says, first,
21 select the events and then do all of these
22 things.

23 I considered that to be there by
24 implication. That is certainly how any event
25 study is connected. You begin with a set of

1 [REDACTED]
2 events; then you run through the statistical
3 analysis to get the -- to get the -- identify
4 which days are significant. And then we test to
5 see whether the events are correlated with the
6 days of statistical significance. That's how it
7 was done; that's how event studies are generally
8 conducted.

9 Q. But what you just described is not how
10 testified earlier. What you testified earlier
11 to was that you took 500-some events, put them
12 into categories, and then effectively rejected
13 nine of the categories. Correct? And then you
14 applied the remaining five categories to the
15 days to which you --

16 A. And having -- having done that --

17 Q. Let me finish. I'm sorry.

18 A. -- I then followed these steps and
19 this work --

20 Q. Let me just finish.

21 The -- what you described was that you
22 did the regression that identified days with
23 statistically significant price returns,
24 correct?

25 A. I'm sorry. Say it again.

1 [REDACTED]
2 Q. You conducted a regression analysis
3 that allowed you to identify what you believed
4 were the days for which there was a
5 statistically significant price return for XRP.

6 Correct?

7 A. I did conduct such regression
8 analysis, yes.

9 Q. And then you also had a set of
10 500-some events that you had identified,
11 correct?

12 A. Correct.

13 Q. And you reduced those -- the 514
14 events that you had in 14 categories to 105
15 events in five categories. Correct?

16 A. 113 events in five categories, yes.

17 Q. And 105 event days?

18 A. Event -- 105 unique days, yes.

19 Q. Right. And it was only the 105 event
20 days that you applied to the days on which -- or
21 that you correlated to the days on which there
22 was a statistically significant price return.

23 Correct?

24 A. No. Again, I -- we've -- we've gone
25 over this a few times. I tested categories in

1 [REDACTED]
2 addition to those 105. Remember, I tested
3 office and staff announcements and noncommercial
4 XRP initiatives, in addition to those other
5 113 events.

6 But, again, I just want to make it
7 very clear, because I -- I worry that -- I just
8 want to make it very clear, and I hope you're
9 not trying to insinuate that I looked at which
10 days were significant and then decided how to
11 organize the news. That would be improper, and
12 that's not how -- that's not what was done. And
13 that's not how I conduct my work.

14 Q. Why would it be improper?

15 A. It would be improper because it's
16 become circular. Obviously -- and this really
17 is -- is criticism I have of the rebuttals of
18 Dr. Marais and Professor Fischel. It is not
19 proper to begin with a set of statistically
20 significant days and then go look to see whether
21 or not you can find news on those days.

22 That does seem to be the methodology
23 that they're endorsing. It's not the correct
24 methodology. Becomes completely circular. I'll
25 give you an example.

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It may very well be true -- I do not

know if it is true or false, but it would not

surprise me if Ripple Labs, some combination of

Ripple Labs and Mr. Garlinghouse and Mr. Larsen

and Mr. Schwartz probably issue a tweet every

day. It wouldn't surprise me. May not be true,

but it wouldn't surprise me if they're issuing a

tweet every day.

10

So if I started with, well, here, a

11

set of statistically significant days; let me go

12

look and see whether or not I can go find

13

something. I'd be willing to bet that the

14

answer is, yes, I can go find something on each

15

and every one of those days. Here's a tweet

16

from Mr. Garlinghouse. Here's a statement from

17

Mr. Schwartz. That's a meaningless exercise.

18

Dr. Marais and Professor Fischel seem

19

disappointed I didn't do that exercise, but it's

20

an utterly meaningless exercise. And that's not

21

how I conducted this analysis, and it's not

22

proper.

23

To be meaningful, you have to start

24

with a set of events and ask the question: Does

25

this set of events, is it associated with

1 [REDACTED]
2 statistically significant price changes or not?

3 Q. I want to do just a -- a simple little
4 bit of arithmetic.

5 Had you tested for all of the 514
6 events -- I may have the numbers wrong -- 514
7 events against the regression analysis that
8 identified statistically significant price
9 returns, you still would have come up with
10 24 points of coincidence. Maybe a few more,
11 maybe a few less. But your assumption is that
12 the nine categories you excluded were unlikely
13 to have a correlation with a statistically
14 significant price impact on XRP. Correct?

15 A. Again, that was -- as we went through
16 them, that was my prior expectation. I -- I
17 don't think I had an expectation on the
18 miscellaneous category, and the litigation
19 category I probably would expect an association
20 with negative returns rather than positive
21 returns.

22 But certainly, if in the nine -- if in
23 the five categories that we study, there are
24 24 days, if we add categories, we will always
25 have at least 24 days, and, of course, we may

1 [REDACTED]
2 have more.

3 Q. Right. And given that we don't know
4 what we don't know since you didn't do the test,
5 you agree with me, rough numbers, that 24 over
6 105, which is the results of the corr-- the
7 correlation between the Ripple events that you
8 included and the days on which you found -- I'm
9 sorry.

10 Withdrawn.

11 You agree with me that the -- of the
12 105 events that were included in the -- event
13 days that were included in the five categories
14 that you describe in paragraph 100, you found a
15 correlation with 24 days of statistically
16 significant price returns on XRP. Correct?

17 A. I think -- I think we'd have to --
18 we'd have to specify which model, because not
19 every model covers the entire time period. But
20 there -- I -- I -- there may be some models
21 which -- to which the answer to your question is
22 yes. I just don't have it memorized.

23 Q. Why don't we go to paragraph 100.

A. ~~24~~Yes.

25 Q. All right. Tell me if I'm reading

1 [REDACTED]
2 this right.

3 You identify 105 event days spanning
4 2,369 trading delays, correct?

5 A. Uh-huh.

6 MR. MOYE: Say yes.

7 A. Yes. I'm sorry, yes.

Q.8 And you had 105 Ripple event days,
9 correct?

10 A. Yes, that's correct.

11 Q. And of those 105 Ripple event days,
12 you found 24 days on which there was a
13 statistically significant price return, correct?

14 A. Per the -- per one of the models.
15 Just to -- just to be clear, again, using -- I'm
16 reading this second sentence of paragraph 100 --
17 again, using the constant mean return model as
18 an example. So these numbers all apply to that
19 model.

20 Q. And that's Model 1, correct?

21 A. That's Model 1, correct.

22 Q. And so the simple arithmetic is 24
23 over 105, correct? Using the constant --

24 A. I mean, that -- that is --

25 Q. -- mean return model.

1

2 A. Sorry.

3 That is a simple arithmetic

4 calculation one could do. That is not the

5 arithmetic calculation that I did to reach my

6 conclusion. I just want to be clear.

7 But one could divide 24 by 105.

8 Q. And you'd get about 23 percent,

9 correct?

10 A. That sounds right.

11 Q. And if you had run 514 event days

12 against the price returns you found through the

13 constant mean return model, and you still found

14 24 days of correlation, you'd have about

15 5 percent, correct?

16 A. Well, if, if, if. That would -- that

17 would be what the arith-- the arithmetic would

18 show.

19 Q. Was that a factor in your subject--

20 the exercise of your subjective judgment to

21 exclude 9 of the 14 categories, from the

22 analysis that you conducted as described in

23 paragraph 100?

24 A. No. There -- there's -- there is no

25 economic significance to that result.

1 [REDACTED]
2 There's no economic significance to
3 that result whatsoever. It's not an interesting
4 result. I'm not -- didn't run the analysis
5 because it's not interesting to run that
6 analysis.

7 Q. And why is it not interesting from an
8 economic perspective?

9 A. Because it -- because once you start
10 throwing in a bunch of articles that are not
11 breaking any news, they don't even purport to
12 break any news, once you -- one you throw in a
13 bunch of things which have nothing to do with
14 whether Ripple Labs is going to impact XRP
15 prices, testing whether they impact XRP prices
16 just becomes an uninteresting exercise.

17 For example, we could do an event
18 study on whether earnings announcements impact
19 stock prices. That's an interest question.
20 That's an interesting analysis. People have
21 done it.

22 It is not an interesting question to
23 say, Well, to those earnings announcements,
24 let's add every press release that the company
25 ever issued about anything whatsoever and see if

1 [REDACTED]
2 there's an association with price movements.

3 The reason that's not interesting is
4 because, even before you do it, you sort of know
5 that the answer is going to be, it won't.
6 Because if it were -- if it were that easy to
7 move a stock price, if all a company had to do
8 to move a stock price is issue a press release
9 about something, they'd do it all the time and
10 move their stock price all the time, so it's
11 just not an interesting question.

12 It was interesting to me to see if
13 these categories, product announcements,
14 customer announcements, things related to
15 growing the XRP ecosystem, if that moves the XRP
16 market, that's an interesting result.

17 Finding that every time the New York
18 Times wrote an article about cryptocurrency as a
19 mentioned XRP, that that does not move the XRP
20 market, is neither here nor there. It's just
21 irrelevant.

22 Q. But that's not the source of events
23 that you collected, Dr. [REDACTED]. The source of
24 events that you collected were what you
25 described as publications by Ripple that you

1



2 deemed that Ripple thought was important.

3 Correct?

4 A. No. What I collected were news on
5 Ripple's curated web page, which includes, for
6 example, links to third-party articles. They
7 link to a New York Times -- I mean, maybe not a
8 New York Times, but they will link to somebody
9 else who wrote an article saying, The 50 best
10 places to work in the Bay area and Ripple Labs
11 is, I don't know, Number 23. Right? They want
12 to trumpet that. They want say, Hey, great,
13 we're a great place to work, so they link to an
14 article like that.

15 Now, testing whether the XRP market is
16 going to move in response to that kind of
17 announcement is just a waste of time. It's
18 uninteresting.

19 My expectation is that it won't. But
20 it wouldn't matter to me if it did.

21 Q. Could you read for me the portion of
22 your report set forth in paragraph 48(a).

23 Just the first sentence.

24 A. 48A.

25 I start with the news which

1 [REDACTED]
2 Ripple Labs has identified to be important by
3 virtue of, 1, having issued a press release
4 about the event, or 2, having written about it
5 on its Insights news page, or 3, having linked
6 to a third-party news outlet in its curated
7 newsroom page.

8 Q. And then read the last sentence of
9 paragraph 48A.

10 A. I simply assume that based on its
11 understanding of its business and industry,
12 Ripple had some basis to highlight certain
13 events and not others.

14 Q. So you -- in your methodology, you
15 substituted your judgment for Ripple about what
16 events you thought were important to evaluate as
17 to whether it had a statistically significant
18 impact on the XRP price return. Correct?

19 A. No, that is not correct. That is not
20 a fair characterization of what happened.
21 Ripple did not assemble these articles for the
22 purposes of conducting an event study on whether
23 there's an impact on XRP markets.

24 They assembled a set of articles that
25 conveyed information that they generally wanted

1 [REDACTED]
2 to convey, whether that would impact XRP markets
3 or not.

4 So they had their objectives in mind,
5 and I have my objectives in mind, and they are
6 not same objectives.

7 So they're perfectly free to link to
8 an article trumpeting Ripple Labs as one of the
9 best places in the Bay area to work, that's
10 perfectly fine. But that is not suitable
11 material for an event study of the type that
12 we're conducting.

13 Q. You wrote in your report, that you
14 assumed that Ripple had some basis to highlight
15 certain events and not others. Correct?

16 A. I did write that, yes.

17 Q. And you said, in your report, that you
18 started with news which Ripple has identified to
19 be important. Correct?

20 A. Correct.

21 Not for the purposes of conducting an
22 event study but just news that they thought was
23 important.

24 Q. Why do you think -- what is your
25 assumption about why Ripple thought it was

1 [REDACTED]
2 important to include these events on its
3 website?

4 A. I wouldn't presume. Most of them
5 were -- almost all of them were positive in
6 nature, saying good things about Ripple, good
7 things about cryptocurrency, good things about
8 XRP.

9 I -- I don't find it surprising that a
10 company would want to almost retweet, if you
11 will, if not literally, but -- but call
12 attention to press accounts and press reports
13 that are favorable or shed -- put their products
14 in a -- in a good light, I don't find that
15 surprising.

16 Q. Did you assume that the reason Ripple
17 had these events on its website and publicize
18 them was to increase the market price of XRP?

19 A. I -- I'm not going to speculate on
20 their motive for linking to things. It's not --
21 it's not the domain of an economist to speculate
22 on their motive.

23 Q. All right. Let's now go to
24 paragraph 85.

25 A. Yes.

1



2 Q. All right. And you note there that,
3 Not all product developments might be expected
4 to lead directly to increased utilization of
5 XRP.

6 Correct?

7 A. I just -- bear with me one second.

8 Correct.

9 Q. Why did you consider it important to
10 observe that not all product developments might
11 be expected to lead directly to increased
12 utilization of XRP?

13 A. Again, it -- if there is a -- an
14 announcement or event, the nature of which
15 wouldn't be expected to have any sort of impact
16 on XRP, even if there is a link, which there may
17 not be -- that, again, is what we're testing --
18 even if there is a link between Ripple Labs and
19 XRP markets, it's not -- it doesn't become an
20 interesting event to test, because whether you
21 find something or whether you don't find
22 something doesn't provide evidence one way or
23 the other that's helpful to the matter at hand.

24 So announcing that MIT is opening up a
25 validator, that's fine. They're welcome to

1 [REDACTED]
2 announce that. Some people may find that
3 interesting. The link between that and somebody
4 saying, Oh, well I guess I'll go buy XRP, seems
5 somewhat tenuous.

6 So whether that event is or is not
7 associated with XRP price increases is not an
8 interesting question.

9 I note that in Appendix E, again, one
10 of the robustness tests I run is to take all of
11 these events that I've excluded here and add
12 them back just to show that my statistical
13 results do not depend in any way on these
14 exclusions.

15 Q. You didn't write that not all product
16 developments might be expected to lead to a
17 statistically significant price impact on XRP,
18 did you? In paragraph 85.

19 A. I did not write -- I'm sorry. Say it
20 again.

21 Q. You did not write in paragraph 85 that
22 not all product developments might be expected
23 to lead to a statistically significant price
24 impact on XRP, did you?

25 A. No, I did not write that.

1



2 Q. So here you're focusing on increased
3 utilization of XRP. Correct?

4 A. Correct.

5 Q. And that's not what you were testing
6 for, was it?

7 A. No. I'm testing for price impacts.

8 Q. So are you assuming that only news
9 events that lead to increased utilization of XRP
10 will result -- will result in a price impact?

11 A. Certainly not.

12 Q. But the basis on which you excluded
13 six events from this category was based on a
14 judgment that those events would not lead to an
15 increased utilization of XRP. Correct?

16 A. These events did not seem relevant to
17 testing for a link between Ripple Labs and the
18 XRP market, hence I excluded them. Again, my
19 results hold if you want to add them back. I
20 have that result in Appendix E. So nothing
21 hinges on this exclusion.

22 But it struck me as appropriate to
23 exclude events that didn't speak to XRP
24 utilization.

25 Q. Just to be clear, the study you talk

1



2 about with the add-backs, you didn't add back

3 all of the events, did you?

4 A. No. I added back these -- these sorts

5 of exclusions. So, for instance, when I say,

6 Identify some announcements as being stale, or

7 in this case, I identified some announcements as

8 being -- I think I used the phrase "direction

9 uncertain," I do a -- one of the robustness

10 checks that I do in Appendix E is to add them

11 back them, just to demonstrate that my results

12 are not dependent on these exclusions.

13 I still think they're appropriate. I

14 still think they're the right thing to do. But

15 if somebody strongly disagrees and thinks that

16 we ought to add back the event of MIT announcing

17 a new validator, we can add it back. It doesn't

18 change the results.

19 Q. Let's just be clear about what events

20 you added back in, in the study or the analysis

21 that you just described.

22 You added back in the events from

23 particular categories that you excluded based on

24 a subjective judgment that you believed it

25 wouldn't have -- wouldn't lead to an increased

1 [REDACTED]
2 utilization of XRP. Is that correct?

3 A. I added back -- before I -- may I
4 consult Appendix E? I just want to make sure
5 I -- I don't want to say something that's not
6 true. Let me just check one thing in
7 Appendix E. I certainly add back those events.
8 I think I also added back events that were
9 stale.

10 Q. If you wouldn't mind, as you do that,
11 would you just make sure that the record is
12 clear what information you're referring to.

13 A. Sure. So I did a robustness check in
14 Appendix E, which I'm just looking for now. And
15 I just want to remind myself exactly of the
16 parameters of that robustness check. And I have
17 so many robustness checks that I just -- it
18 takes me a minute to find them.

19 (Witness reviewing document.)

20 A. Oh, okay. So I'm looking at page 6 of
21 Appendix E.

22 So page -- let's look at both page 5
23 and page 6. Page 5 are the specific test
24 statistics on the select set of customer and
25 product developments. So that's the set that

1 [REDACTED]
2 we've been discussing where, starting with
3 customer and product announcements, I exclude
4 those that are stale or have an uncertain
5 directional implication for XRP utilization.

6 So what's on page 5 of Exhibit E are
7 the test statistics which underlie the exhibit
8 in the body of the report, if you follow me.

9 Q. Uh-huh.

10 A. Page 6 is exactly that same set except
11 you'll see customer and product developments,
12 all. So here I've just added back everything
13 that I had excluded from the first one, just to
14 show that the results are essentially unchanged.

15 Q. All right. Let's go to Appendix C.

16 A. I'll definitely need my reading
17 glasses for this.

18 Q. If you have them, put them on.

19 Appendix C lists all of the individual
20 events that you collected and placed in the
21 various categories. Is that right?

22 A. It does. Strictly speaking, it lists
23 all of the documents, but it also lists all of
24 the events.

25 Q. And pages 3 through 6, going back to

1 [REDACTED]
2 where we were, is the customer and product
3 category. Correct?

4 A. Excuse me.

5 Yes, that appears to be correct.

6 Q. And do you see, event ID 255 on the
7 last line of page 4?

8 A. Yes.

9 Q. And you see there's another Event 255,
10 on the first page of page 5?

11 A. Yes.

12 Q. And the date of that event is
13 November 22, 2027; is that correct?

14 A. 2017.

15 Q. 2017. I'm sorry. Yes.

16 A. Yes.

17 Q. And this is one of the events you
18 included in your analysis. Is that right?

19 A. It's certainly part of the category.

20 I would have to go back and see if it was on the
21 list of excluded events. I don't think it was.

22 So --

23 Q. So let's go to page -- I think it's
24 page 20 of your report.

25 I'm sorry. Page 40, Figure 20, I

1

2 think, is what it is.

3 A. Right. Yeah, no, it doesn't appear to

4 be on that list.

5 So it should have been -- I believe it

6 was included.

7 Q. So Event 255 is not listed. Is that

8 correct?

9 A. I didn't see it listed, no.

10 Q. And you don't have an event dated

11 November 22, 2017?

12 A. On that list, no.

13 Q. Going back to -- apologize for this,

14 but I don't have a better way to do it.

15 All right. The second document or the

16 second event or document, you give

17 Document ID 7790. Is that right?

18 A. This -- this second document for

19 Event 255, is Document ID 7790. That's correct.

20 Q. Right. And that's in Appendix C,

21 Standard Chartered, Axis launch payment services

22 with Ripple Tech, correct?

23 A. Correct.

24 Q. All right. If we could go to the

25 press release from November 22.

1

2 This will be the CoinDesk.

3 So I think this will be Exhibit 7.

4 (Press Release titled "Standard

5 Chartered, Axis Launch Payments Service

6 with Ripple Tech" was marked Exhibit 7 for

7 identification, as of this date.)

8 MR. MOYE: I'm sorry. I have 6. Did

9 I miss one?

10 MR. FIGEL: I had 6 as his declaration

11 from Rio Tinto.

12 MR. MOYE: Got it. Thank you.

13 Q. Do you recall looking at this press

14 release?

15 A. It seems familiar, yes.

16 Q. And this talks about a new

17 cross-border platform that's being built on top

18 of technology developed by Ripple. Correct?

19 A. Uh-huh.

20 Q. And if you look at the last paragraph,

21 could you just read the -- the first sentence of

22 the last paragraph.

23 "Not included."

24 A. Not included in the cross-border

25 platform is Ripple's XRP digital asset. The

1 [REDACTED]
2 spokesperson for the start-up confirmed that
3 SC -- which I assume is Standard Chartered --
4 and Axis are not using XRP to facilitate
5 transactions between Singapore and India.

6 Q. So fair to say that the events
7 described in this press release would not lead
8 to increased utilization of XRP, correct?

9 A. As described here, this particular
10 product, it says it is not using XRP.

11 It's a cross-border payment platform
12 built on top of Ripple technology. But this
13 particular technology, it says, is not using the
14 XRP token.

15 Q. Can you tell us why you didn't exclude
16 Event 255, from your analysis on consumer and
17 product announcement events?

18 A. Because this is an announcement of
19 banks using Ripple technology to effect
20 cross-border payments. The particular corridor,
21 I agree, it says it's not using XRP. But this
22 is, I would say, an expansion or enhancement to
23 the ecosystem that Ripple is interested in
24 building.

25 It is an interesting question, it

1 [REDACTED]
2 seems to me, to know whether or not this event
3 moved XRP prices. May it did; maybe it didn't.

4 Q. He didn't perform a test to determine
5 whether it didn't or it didn't even though it
6 was an interesting question, correct --

7 A. I --

8 Q. -- Dr. [REDACTED]?

9 A. I did not look at this event in
10 isolation to determine whether or not to include
11 it in the study. I do not know, sitting here
12 today, whether XRP prices move following this
13 event or whether they do not.

14 Q. Now, if you go to the second paragraph
15 of this release, you see where it says,
16 According to SC's release?

17 A. I'm sorry, where?

18 Q. Second paragraph, second line at the
19 right.

20 A. Yes.

21 Q. And SC presumably is Standard
22 Chartered?

23 A. That would be my interpretation.

24 Q. Did you go to -- look at Standard
25 Chartered's release?

1



2 A. Unless it was in the Ripple set, if
3 they didn't link to it, no, I didn't go look at
4 it.

5 Q. Why not?

6 A. I didn't see the need to.

7 Q. Do you know how many other press
8 releases you considered in which you included as
9 an event an announcement about a customer who
10 was using a Ripple-related product that did not
11 include the use of XRP?

12 A. In many of the announcements, it's
13 difficult to know explicitly whether XRP is
14 going to be utilized or not.

15 It struck me as an interesting
16 question to know if announcements of this type,
17 announcing new customers using Ripple
18 technology, whether that moved XRP prices or
19 not.

20 Your expectation might be that this
21 announcement wouldn't. You might be right.

22 Q. And just so the record's clear, even
23 though you find that to be an interesting
24 question and even though you acknowledge that at
25 least with respect to this press release,

1 [REDACTED]
2 there's not a direct increase in the utilization
3 of XRP, you didn't test to see whether it was
4 statistically significant. Correct?

5 A. I included it in a set of events and
6 tested the joint significance of that set of
7 events.

8 To the extent that this one has
9 nothing to do with XRP and XRP prices don't
10 react, my results get a little bit weaker.
11 That's -- that would be the downside.

12 Q. Why do they get weaker?

13 A. Well, if you add an event -- I mean,
14 if you add an event and there is no price
15 reaction, that makes the joint significance of
16 your set of events weaker.

17 Q. So the 400 or so events that you
18 excluded, had you included them, would have made
19 the results of -- the joint significance of the
20 set of events weaker. Correct?

21 A. Meaningless and almost surely weaker.

22 But the important point is that it's a
23 meaningless exercise to run.

24 Q. Let's go to -- apologize for having to
25 go back and forth like this -- page 5 of

1

2 Appendix C.

3 You with me?

4 A. Uh-huh.

5 Q. And you see there's three events, or
6 three -- I guess press releases or documents
7 that you associate with Event 296.

8 A. Yes, I see three documents with
9 Event 296.

10 Q. And then going back to page 40, this
11 was not one of the events you excluded from your
12 study with respect to consumer product
13 announcements, correct?

14 A. I think that's correct, yes.

15 Q. Did you personally review the
16 documents that you've associated with Event 296?

17 A. I believe so.

18 Q. Understood them?

19 A. I believe I did.

20 Q. The third document, which you have
21 identified as Document 7758. You with me?

22 A. Uh-huh.

23 Q. And the headline of that is, "Ripple
24 Blockchain Networks Adds China Payments
25 Provider."

1

2 Do you see that?

3 A. I do.

4 Q. Do you know -- why don't we go to that
5 document.

6 This will be Exhibit 8.

7 (Article titled "Ripple Blockchain
8 Network Adds China Payments Provider" was
9 marked Exhibit 8 for identification, as of
10 this date.)11 Q. And I'm showing you what I believe is
12 Document 7758, which is an -- an article dated
13 February 7, 2018.

14 A. Uh-huh.

15 Q. If you go to the last -- well, let me
16 just read it to you and save a little time. I'm
17 reading to you from this document.18 The product differs from Ripple's
19 xRapid solution, which, unlike xCurrent, uses
20 the company's custom cryptocurrency XRP.21 So this is another announcement in
22 which a customer utilized a Ripple-related
23 product that didn't require the use of XRP.

24 Correct?

25 A. It appears to be.

1



2 Q. And why didn't you exclude this event
3 from your study if it didn't -- if it announced
4 an event that didn't result in an increased
5 utilization of XRP?

6 A. Because this is an example of a
7 customer and product announcement. A major
8 payment provider in China joining RippleNet
9 using Ripple's technology strikes me as
10 particularly interesting to know whether XRP
11 prices respond to events of this general type.

12 Q. And you don't know the answer to
13 whether there was a statistically significant
14 price impact on XRP as a result of this
15 announcement. Correct?


16 A. This particular event? I don't
17 know -- I don't know the answer to that.

18 Q. Now, as with this one, you -- certain
19 of the events that you identified had multiple
20 documents associated with them, correct?

21 A. That is correct.

22 Q. What methodology did you use to
23 determine whether multiple documents should or
24 should not be associated with a specific event?

25 A. I read the content of the documents to

1 
2 see if they provided substantively similar
3 information.

4 I looked at the dates of the documents
5 to see if they were adjacent in time, if not
6 simultaneous in time, to determine if they were
7 essentially referring to the same event.

8 Q. And again, this was just your
9 subjective judgment as to whether there was one
10 event or more than one event?

11 A. It's a -- it's a judgment exercise.
12 In many cases, I think there would be very
13 little controversy. You may perhaps find a case
14 where you think there is some controversy. But
15 generally I think it's fairly straightforward,
16 at least in this set of events, to say that
17 certain documents were essentially talking about
18 the same thing.

19 Q. And as I understood your answer, other
20 than reading the documents that you have listed
21 in Appendix C, you didn't do any additional
22 research. Correct?

23 A. Well, again, we -- I -- I looked at
24 the dates of publication. If they were
25 two years apart, that would probably make it

1 [REDACTED]
2 unlikely that they were referring to exactly the
3 same event.

4 If they're on the same day, or a day
5 apart, or maybe two days apart -- so it was a --
6 a -- based on the content of the announcement
7 but also some consideration to publication date.

8 Q. All right. But that's all information
9 that appears within the four corners of the
10 document, correct?

11 A. Generally, yes.

12 Q. My question is, did you look outside
13 the four corners of the document to get more
14 information that it allow -- would allow you to
15 have a more informed judgment about whether a
16 series of documents should be correlated with a
17 single event or multiple events?

18 A. I can't say that I particularly did
19 more than read the documents to see if they were
20 talking about the same thing.

21 Q. Can you think of any instance where
22 you did anything to investigate whether
23 documents should be associated with a single
24 event or multiple events, other than reading the
25 documents themselves?

1

2 A. Just trying to remember.

3 There -- there may have been times,
4 I -- I seem to -- I seem to recall there may
5 have been times when a document might say --
6 this is just a -- this is just a -- an example
7 of type, not a literal quote.

8 Seven banks join RippleNet, and then
9 another document, maybe published the same day,
10 lists seven banks and says, These joined
11 RippleNet. I may have done a little bit of work
12 to make sure that these were talk-- that the one
13 document was talk-- was referring to the same
14 set.

15 There may have been instances like
16 that. I think they were few and far between.

17 Q. You may have done many things,
18 Dr. [REDACTED]. Do you have a specific recollection,
19 as you sit here today, of doing that, of looking
20 beyond the four corners about -- beyond the
21 four corners of the documents that you pulled
22 off the -- the Ripple website to investigate
23 whether they related to one event or more than
24 one event?

25 A. Yes, I -- I --

1

2 Q. Which event?

3 A. I can't tell you which event it was.

4 There was -- there -- I -- I do recall there was

5 an event. There were documents that were

6 separated by a couple of days of publication,

7 and I wanted to see if they were really

8 describing the same thing. I don't remember

9 what the event was.

10 Q. Other than that investigation as to

11 that one event, do you recall doing that on any

12 other occasion?

13 A. I don't have a specific recollection.

14 Q. Could you now go to page 22,

15 paragraph 48(c)?

16 A. Page 22.

17 Yes.

18 Q. Can you read for the record the

19 sentence you wrote beginning with the word

20 "First."

21 A. First, the announcement may

22 substantially repeat a previous announcement. I

23 term such announcements as stale.

24 Second, the nature of the announcement

25 may not have a particular directional

1

2 implication for XRP prices, even assuming the
3 hypothesis of independence is false. I describe
4 such announcements as direction uncertain.

5 Q. All right. Directing your attention
6 to the events you believe to be stale. Can you
7 tell us what you mean by "stale"?

8 A. There may be a document published on a
9 certain date that announces some new
10 information, and there may be another document a
11 week later that essentially repeats that
12 information but doesn't appear to be providing
13 new information.

14 Q. Okay. If we could go to page 3 of
15 Appendix C.

16 A. Yes.

17 Q. And directing your attention to
18 Events 11, 12, and 13 in the customer product
19 category.

20 You with me?

21 A. Yes.

22 Q. You identify all those events as -- or
23 the document date for all those events as
24 September 24, 2014. Is that correct?

25 A. The documented date is September 24,

1

2 2014. Yes.

3 Q. And you didn't exclude any of these

4 three events from your analysis as stale.

5 Correct?

6 A. Correct.

7 Q. So all three of these events -- and

8 these are individual events, right? There are

9 three events here?

10 A. Three events all on the same day, so

11 they get counted once. You can exclude them if

12 you want. Doesn't make any difference.

13 Q. And that was all part of your analysis

14 that found the correlation between customer and

15 product news and XRP returns. Correct?

16 A. That single-event day is part of the

17 analysis, yes.

18 Q. Let's go to what I believe is

19 Document 7594 in Appendix C, which is titled, I

20 believe, Hundred-year-old CBW Bank, one of first

21 U.S. banks to integrate Ripple's

22 transformational money-transfer protocol.

23 You see that? I think this would be

24 Exhibit 9.

25 (Article titled "Hundred-Year-Old CBW

1 [REDACTED]
2 Bank One of the First U.S. Banks to
3 Integrate Ripple as Transformational Money
4 Transfer Protocol Ripple" was marked
5 Exhibit 9 for identification, as of this
6 date.)

7 A. 7594, one of the September 24
8 documents. Yes.

9 MR. MOYE: Are we marking this as 9?

10 MR. FIGEL: Yes.

11 Q. You with me, Dr. [REDACTED]?

12 A. Yes.

13 Q. The first paragraph, it suggests that
14 CBW Bank continues its pioneering spirit as one
15 of the first U.S. banks to use the Ripple
16 protocol for modern real-time payments between
17 the United States and other countries globally.

18 Do you see that?

19 A. Yes, I see that.

20 Q. And this, again, is a press release
21 talking about use of the Ripple protocol?

22 A. Yes.

23 Q. What's your understanding of what the
24 Ripple protocol was?

25 A. Some documents seem to describe it as

1 [REDACTED]
2 the open-source blockchain technology. I
3 suppose that's -- that's essentially my
4 understanding of what they mean by Ripple
5 protocol.

6 Q. Go to the second page. I guess it's
7 on the back of the one you have.

8 A. Uh-huh.

9 Q. Can you read the first two sentences,
10 under the heading, About Ripple.

11 A. Ripple Labs developed the Ripple
12 protocol, which makes transacting as easy as
13 emailing. The San Francisco Bay start-up is
14 funded by Google Ventures on --

15 Q. I'm sorry. I don't mean to interrupt,
16 but you're reading about Ripple Labs. I
17 would -- about Ripple.

18 A. I'm sorry.

19 Ripple is an open-source distributed
20 payment protocol. It enables the free and
21 instant transfer and exchange of any type of
22 value, including dollars, yen, euros, and even
23 loyalty points.

24 Businesses of any size can easily
25 build payment solutions -- build payment

1 [REDACTED]
2 solutions, pardon me, such as banking or
3 remittance apps, and accelerate the movement of
4 money on Ripple. Ripple enables the world to
5 move value like information moves today. For
6 more information about Ripple, please visit a
7 website.

8 Q. No mention of XRP, correct?

9 A. XRP does not appear in that paragraph,
10 no.

11 Q. Any -- anything you see in Exhibit 9,
12 to suggest that this document would be
13 associated with the increased utilization of
14 XRP?

15 A. This document describes a bank joining
16 the Ripple protocol. How that might impact XRP
17 prices is an interesting point to study. I
18 include it in a test to see whether there's a
19 correlation, and I found that there was.

20 Q. So you were aware at the time you were
21 doing your event selection that some of these
22 press releases specifically stated that XRP was
23 not going to be used in the product that was
24 being described. Correct?

25 A. In some cases, yes.

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2 Q. And you elected to include those
3 events in your study, notwithstanding your
4 awareness that they explicitly stated that XRP
5 would not be used.

6 A. Correct. You might have a hypothesis
7 that XRP prices should not react following such
8 announcements. That's a perfectly valid
9 hypothesis to have.

10 In fact, let's remember that is the
11 null hypothesis of the experiment, is that XRP
12 prices are not going to react following these
13 events. I tested that hypothesis. I was able
14 to reject it.

15 Q. So if I showed you the other documents
16 that you have correlated with Exhibits 11, 12,
17 and 13 and I showed you that they also didn't
18 involve a product that would require the use of
19 XRP, it wouldn't change the conclusions you're
20 reaching in your report. Correct?

21 A. No, not at all.

22 Q. Well, the answer to my -- I had the
23 "correct" question. So the answer is, no, it
24 would the not change --

25 A. No, it would not change my opinion.

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██████████
Yeah.

MR. MOYE: Just for clarification, are you making representation that those other documents do not refer to XRP or describe it?

MR. FIGEL: Why don't we -- if we want, before I make that representation, let me just double-check.

MR. MOYE: Right, because I would ask the same clarification about this document.

MR. FIGEL: I'm sorry. Which document?

MR. MOYE: I would ask whether you're making that same representation about this document. Exhibit 9.

MR. FIGEL: That document, I believe -- this is 9 you're talking about?

Well, this document, we can ask Dr. ██████████.

Q. Do you see anything in this document to suggest that the product or the institutions described here, will be using XRP in any of the products?

A. I certainly don't see any -- I don't

1 [REDACTED]
2 see any statement that they're not. I think
3 somebody might read this and think, if they're
4 using the Ripple protocol, they may very well be
5 using its native digital token, XRP.

6 So I -- I can imagine that some people
7 might read an announcement like this and think
8 that XRP is being used. But it doesn't say --
9 that I can see, it doesn't say whether it is or
10 isn't.

11 But in any event, it wouldn't -- it
12 wouldn't alter my opinion.

13 Q. All right. So let's go to -- just --
14 I will withdraw my representation so we don't
15 have any confusion about misleading the witness.

16 MR. MOYE: Fine. Thanks.

17 Q. Let's go to Document 79 -- I'm sorry.
18 My eyes are getting bad, too. I believe it's
19 7595.

20 And that is, I believe,
21 Cross River Bank to integrate Ripple for
22 real-time international payments.

23 Do you see that?

24 A. I do.

25 MR. FIGEL: We'll mark that as

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2 Exhibit 10.

3 (Article titled "Cross River Bank to

4 Integrate Ripple for Real-Time

5 International Payments Ripple" was marked

6 Exhibit 10 for identification, as of this

7 date.)

8 Q. Have you seen this document before,

9 Dr. [REDACTED]?

10 A. I have.

11 Q. This is a document with the same date,

12 as Exhibit 9, that you have included as a

13 separate event.

14 Do you see that?

15 A. Yes.

16 Q. If you recall from Exhibit 9 --

17 withdrawn.

18 What do you understand the substance

19 of the information included in Exhibit 10?

20 A. I understand it to be substantially

21 similar to Exhibit 9, just a different bank

22 joining the Ripple protocol.

23 I believe there also -- there's an

24 article or a press release from Ripple which I

25 think joins these two things and talks about

1 [REDACTED]
2 both of them in the same context. But --

3 Q. And do you see anything in this
4 document to suggest that the banks or the
5 products that are being described contemplate
6 the use of XRP?

7 A. Well, I certainly think somebody might
8 draw that inference. If they're joining the
9 Ripple protocol, they might reasonably think
10 that they're going to use its native token. It
11 doesn't say, We will use XRP. And I don't see
12 that it says, We will not use XRP.

13 But again, that's -- it doesn't really
14 have any bearing on my opinion.

15 Q. Now let's go to Event 13. That's
16 associated with three documents. Is that
17 correct?

18 A. Yes.

19 Q. Actually, four documents.

20 A. Yes, four.

21 MR. MOYE: That's so small. I'm
22 sorry.

23 MR. FIGEL: Yeah, I know.

24 Q. So the first of these four documents
25 that you correlate with Event 13 have the

1 [REDACTED]
2 headlines, Two U.S. banks are ready to embrace
3 the Ripple protocol allowing instant global
4 money transfers.

5 Do you see that?

6 A. I do.

7 Q. Let's -- let me show you what we
8 believe is -- it's 11, but it is the article
9 that says -- yeah, it's 7923, Two U.S. banks are
10 ready to embrace.

11 MR. MOYE: Do you want him to look at
12 it?

13 MR. FIGEL: I think so, yeah.

14 Well, why don't we do -- let me see if
15 I can cut through this.

16 Q. We have four press releases or four
17 documents that you associate with a single
18 event, correct?

19 A. Yes.

20 Q. And we have two other events with
21 documents that you associate with separate
22 events?

23 A. Yes.

24 Q. All occurring at or about the same
25 day?

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2 A. On the same day. I think that's --

3 Q. Well --

4 A. -- an important point.

5 Q. Some are the 24th, some are the 25th?

6 A. But the event day, I believe I assign
7 9/24 to all.

8 Q. So why do you -- why did you decide to
9 treat those various press releases as different
10 events?

11 A. Since they're all on the same event
12 date, it's immaterial how I do that. I could
13 have grouped them all together as -- and given
14 them one event number, it wouldn't make any
15 difference.

16 One document talks about CB -- or
17 Cross River Bank, the other talks about
18 CBW Bank, and then you have a series of
19 documents that talk about both.

20 They all came out basically on the
21 same day and maybe one came out the following
22 day. The event date is September 24. We could
23 call that one event, we could call it
24 ten events.

25 Q. How do you know, then, which of the

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2 various announcements are associated with the
3 statistically significant price return on that
4 day?

5 A. Well, I don't know that there is a
6 statistically significant price return on that
7 day. But in any event, it doesn't make any
8 difference to me which one of them is.

9 Recall that Ripple Labs has to take
10 the position, or has taken the position, that
11 none of them can be driving the price. Whether
12 it was the C-- again, assuming there was a
13 significant return on that day, which I -- I'm
14 not conceding is true, I don't know if it's
15 true, but even if it were true, it doesn't make
16 any difference to my opinion whether that was
17 driven by the Cross River Bank joining or the
18 C-- I keep saying CBW. Yeah, CBW Bank joining.

19 It -- it wouldn't make any difference
20 to my opinion if it was a little of one, a
21 little of the other, a little of both.
22 Ripple Labs has taken the position that there
23 would no association, it couldn't be either one.
24 So it -- it doesn't matter to my analysis which
25 one it is.

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2 Q. So if I understand your answer, all
3 your methodology is seeking to prove is that on
4 one day and one action by Ripple Labs, if there
5 is a correlation, that you have disproved the
6 hypothesis you're seeking to disprove; is that
7 correct?

8 A. No, that's not correct at all.

9 Q. Well, you just said, if I understood
10 it right, that what you understood Ripple to be
11 saying is that no Ripple action ever had an
12 impact on the price of XRP. Correct?

13 A. I understand Ripple disputes that the
14 XRP market looks to them to create value, and
15 they dispute -- also some of the expert reports
16 they submitted in this matter dispute that
17 there's any connection between Ripple Labs and
18 XRP prices.

19 Q. And so what exactly is it that you
20 believe your study is relevant to with respect
21 to the issues you just identified?

22 A. I'm testing that hypothesis.

23 Q. Well, which hypothesis? You named
24 about five.

25 A. I think I've named one. I'm testing

1 [REDACTED]
2 the hypothesis of whether news about Ripple's
3 actions and news about Ripple is correlated with
4 significant XRP price increases.

5 That is the essential statistical and
6 economic analysis of my report. And I find,
7 through a variety of measures, that the
8 hypothesis that they are independent can be
9 rejected at any reasonable degree of
10 significance.

11 Q. And how many days do you have to find
12 a correlation between a Ripple action and a
13 price impact on XRP for you to reach the
14 conclusion that you reach?

15 A. I -- I'm not aware of a bright-line
16 number. We can -- you know, some categories I
17 test. For instance, the milestone category has
18 as few as -- what is it, six or eight events. I
19 think it's eight.

20 That is actually a large enough sample
21 to test.

22 And then, of course, other categories
23 have many more events. So I don't have a
24 bright-line number in mind.

25 MR. FIGEL: I can't remember what time

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2 we got on the record.

3 MR. MOYE: Close to 1.

4 MR. FIGEL: Close to an hour, so

5 should we take a break?

6 MR. MOYE: Sure.

7 THE VIDEOGRAPHER: We're going off the

8 record at 2:25 p.m.

9 (Recess from 2:25 to 2:40.)

10 THE VIDEOGRAPHER: We're back on the

11 record at 2:20 [sic] p.m.

12 Q. All right. Dr. , if you could go

13 to your -- Exhibit 1, your report, and go to

14 page 20, paragraph 45.

15 A. Yes.

16 Q. You look in the middle, paragraph 45,

17 you write, If there is a statistically

18 significant price reaction, and if certain

19 conditions can be established, then one might

20 conclude the market reacted significantly to the

21 announcement.

22 Correct?

23 A. Yes, I see that.

24 Q. And in Footnote 57, you describe the

25 conditions that need to be established.

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2 Correct?

3 A. I -- I don't intend it to be an
4 exhaustive list, but it's certainly some of the
5 conditions. Yes.

6 Q. And -- and one of them, in
7 romanette i, is, There is no other confounding
8 news that day which might explain such movement.
9 Correct.

10 A. Correct.

11 Q. What's confounding news?

12 A. Confounding news is generally
13 information released on or about the same time
14 as the -- let me back up.

15 There's an event that you're
16 interested in. Confounding information would be
17 news released on or about the same time, which
18 might reasonably be expected to impact the
19 security price that you're questioning.

20 So a canonical example might be
21 ABC Enterprises issues a corrective disclosure
22 on January 1 and the stock price drops.
23 Everybody agrees that the stock price drops.
24 People want to say, Well, the stock price
25 dropped because of the corrective disclosure.

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And somebody comes along and points

out, Well, wait a minute, ABC Enterprises was

also named as a defendant in a class action suit

on the very same day, so how do you know if it

was the corrective disclosure or the lawsuit.

That would be an example of

confounding information.

Q. And so if there are compounding events

present on a given day in which there's a

statistically significant price impact, that

would undermine the confidence that you could

have that one event or the other caused that

price impact. Correct?

A. It -- it could. Yes.

Q. And the presence of confounding events

would undermine the reliability of any finding

you made in this case through your event study,

correct?

A. Potentially.

Q. Well, in your own judgment do you

believe it was necessary to establish that there

was no confounding news on an event day, with

whatever the Ripple event that you identified

was, before you could reach a reliable opinion

1 [REDACTED]
2 that the market for XRP reacted in a
3 statistically significant manner to the Ripple
4 news event?

5 A. Yes, I think one has to take steps to
6 rule out the likelihood of confounding
7 information before drawing any sort of causal
8 inference from a correlation result.

9 Q. And for the three-day event window
10 that you use primarily in your study to support
11 your opinion, would it also be necessary to rule
12 out confounding events on each of those
13 three days?

14 A. One would -- one has to consider the
15 possibility of confounding information, I agree.

16 Q. Okay. What steps did you take to
17 ensure that the analysis in your -- withdrawn.

18 What steps did you take to satisfy
19 yourself that there were no confounding events
20 on any of the Ripple news event days that you
21 considered?

22 A. So I took a number of steps.

23 So this might be one of those long
24 answers.

25 Q. If you must.

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2 A. So let's begin by thinking about
3 what -- what this confounding information might
4 be. It might be news that impacts the digital
5 token market broadly.

6 Well, we can rule that out. We can
7 rule that out because 18 of the 20 regression
8 models that I consider control for other digital
9 token returns such as bitcoin.

10 So if it's simply that XRP prices are
11 going up at the same time that the -- the
12 broader cryptocurrency market is going up, we
13 can rule that out as a possible explanation.

14 Another type of confounding
15 information, the example that I gave earlier,
16 is -- is company-specific information.

17 Well, we can rule that out, too.
18 Because, of course, Ripple Labs has taken the
19 position that such information does not exist as
20 a matter of logical possibility. Because
21 they've said nothing that -- there --
22 Ripple Labs is independent of the XRP market, so
23 there's nothing that could be announced about
24 Ripple Labs that should move XRP price.

25 So we can rule that out as a

1 [REDACTED]
2 possibility.

3 What we're left with is speculating
4 that there might be something which wasn't
5 specific to Ripple Labs, didn't impact the
6 broader market, but impact the XRP market
7 uniquely. Okay. Let's consider that.

8 This would have to be something, first
9 of all, that's only good news, because,
10 remember, we look for -- one of the robustness
11 checks that I do is to see if there's a
12 correlation between these event days and
13 negative returns. And there is no correlation.

14 So this has to be good news, unique to
15 the XRP market.

16 Okay.

17 It has to be good news, unique to the
18 XRP market, that Ripple Labs chose not to
19 discuss or link to or reference in any way,
20 among 700 articles on its news page.

21 Okay.

22 It would have to be good news for XRP
23 markets that, on the other hand, didn't impact
24 the number of XRP accounts, because remember,
25 that is a control variable in half of the

1 [REDACTED]
2 regression analyses that I do.

3 It would have to be something that is
4 released exactly on the day in question.

5 It can't be the second day, and it
6 can't be the third day. And the reason I say
7 that, again, is one of the robustness checks
8 that I did was to look at that one-day event
9 window, and we continue to get the statistical
10 result that we've been discussing all along.

11 It couldn't have been something that
12 came out before the news day in question. How
13 do I know that? Because I looked a few days
14 before the news event, and there is no
15 correlation between these events and XRP price
16 increases.

17 So I think it -- it's -- it becomes so
18 implausible to suggest that this hypothetical
19 confounding news could be driving these results.
20 I think that possibility can be dismissed.

21 Q. You've referred several times to what
22 you believe to be Ripple's position that no
23 action by Ripple had any impact on the price of
24 XRP. What's your basis for that?

25 A. That's my understanding from some of

1 [REDACTED]
2 issues that are being considered in this
3 litigation. That's, of course, the position
4 that Dr. Ferrell has taken, and his experts
5 report.

6 I believe that was position taken in
7 Ripple Labs' Wells submission that I looked at
8 some time ago.

9 That's just my general understanding,
10 that they maintain they are independent of the
11 XRP market.

12 Q. So other than the inferences you draw
13 from the Ferrell report, is there anything in
14 writing that you are -- that you can identify,
15 that has caused you to reach that opinion?

16 A. I -- I read the complaint some time
17 ago. I -- I don't remember if it's specifically
18 in there.

19 I think in some of the deposition
20 testimony that I reviewed, executives of
21 Ripple Labs are asked repeatedly about their
22 impact on XRP prices, and they insist that
23 there's no connection.

24 I -- I really didn't think that this
25 was a contentious or controversial point.

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2 Q. Can you recall which depositions you
3 read that caused you to have that understanding?

4 A. I believe -- I mean, I know the
5 depositions were lengthy.

6 I think there's discussion on XRP and
7 Ripple Labs and price in the deposition of
8 Mr. Garlinghouse and Mr. Larsen and
9 Mr. Schwartz, and -- maybe Monica Long and
10 probably others. I don't -- I don't claim to
11 have a photographic memory of which depositions
12 include which.

13 I believe that if we review the
14 deposition transcripts, we'll find questions and
15 answers on this subject.

16 Q. As you sit here today, other than the
17 Wells submission, you can't think of a specific
18 transcript or document in which Ripple Labs has
19 stated that no action by Ripple would have any
20 impact on the price of XRP.

21 A. I -- again, I would point to the
22 deposition transcripts. At least the officers
23 of Ripple Labs have said statements to that
24 effect, I believe.

25 Q. And if you were wrong about that

1 [REDACTED]
2 assumption, would that change the results of
3 your analysis?

4 A. No. That would simply mean if
5 everybody wants to stipulate that Ripple --
6 things Ripple Labs does moves the market, then I
7 suppose we would all stipulate to that.

8 Q. I'm going back to the steps you took
9 to identify confounding events.

10 As I understood your answer, you did
11 not seek on a particular day to identify whether
12 there were actions or events that could have had
13 an impact on the price of XRP. Is that correct?

14 A. No, I don't think that's correct.
15 Again, I took -- I took a number of steps that
16 I've described, so that with -- with -- so that
17 I could reasonably rule out the possibility that
18 the statistical results I was observing were
19 being driven by confounding events outside of
20 the new set that I'm studying.

21 Q. Did you do any investigation or
22 research to determine whether there were any
23 other events that occurred on a day in which you
24 found a overlap between a statistically
25 significant price return on XRP and the 105

1 [REDACTED]
2 Ripple events that you tested for to see whether
3 there was anything else happening in the world,
4 in the market for -- that could have had an
5 impact on the price of XRP?

6 A. Well, again, there was no need to do
7 what you're suggesting. It couldn't -- it
8 couldn't be a factor that impacts the -- the
9 digital token market broadly. I don't have to
10 go look for it. It can't be the case. It can't
11 be something specific to Ripple Labs. I don't
12 have to look for it. It can't be the case as a
13 logical possibility.

14 And I have enough statistical controls
15 to -- there seemed no point to this sort of
16 exercise that you're describing.

17 Q. So you have such confidence in your
18 economic modeling that you can rule out with
19 certainty, under oath, that there's not an event
20 that occurred on a day in which there was -- a
21 confounding event that occurred on a day in
22 which you found a statistically significant
23 price impact -- price return. Correct?

24 A. No, I didn't say that.

25 Could you find and -- could you find a

1 [REDACTED]
2 particular day where you want to point to
3 something and argue that it might be
4 confounding? And we could have a discussion
5 about it.

6 I am confident that the statistical
7 result that the null hypothesis of independence
8 can be rejected, I do not believe that that
9 result would change through any exploration of
10 confounding news.

11 Q. You would agree, though, that if there
12 was confounding news on an event day with a
13 statistically significant price return of XRP,
14 that that would undermine the reliability of
15 your opinion. Correct?

16 A. Again, no. We'd have to see -- no.
17 We'd have to see what kind of news we're talking
18 about. I mean, we're speculating about things
19 that might be. We'd have to review it, what it
20 is. We would have to demonstrate that news of
21 that type does move XRP prices.

22 There would be an awful lot of work
23 that we would have to do before we could even
24 determine that the news actually was
25 confounding, let alone that it had any bearing

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2 or any impact on my overall results and overall
3 conclusion.

4 Q. There were 105 days in which there
5 were Ripple events. Correct?

6 A. One of the sets of categories I study
7 is based on 105 days, yes.

8 Q. And on 24 of those days, you found a
9 coincidence with a statistically significant
10 impact on Ripple returns. Correct?

11 A. According to one model, yes.

12 Q. And just so the record is clear, you
13 took no steps with respect to those 24 days to
14 do any sort of investigation or review to
15 determine whether there was an event that
16 occurred on that day?

17 A. No. Again, I took a number of steps.
18 May not like the steps that I took. But I took
19 a number of steps to make sure that these
20 results were not being driven by confounding
21 information.

22 Q. Well, the steps you took were the ones
23 described, which were effectively built into the
24 models that you created. My question is a
25 different one. Did you go on Lexis or Nexis on

1 [REDACTED]
2 a day in which there was a -- on one of those 24
3 days to see, is there anything else happening
4 that might explain this result?

5 A. The steps that I took are in some
6 cases matters of model design; in some cases
7 they are matters of variations of model runs to
8 check alternative explanations, such as the
9 possibility of confounding news.

10 I'm satisfied that these results are
11 not being driven by hypothetical, speculative
12 possibilities of maybe something else.

13 Q. Let's go back to Exhibit 4, if -- I'm
14 sorry.

15 It's Exhibit 4, which is the
16 Litigation Services Handbook.

17 And if you look -- we are going back
18 to the paragraph we looked at before. And if
19 you could just read the -- the -- the fourth of
20 the four conditions that need to be present for
21 an event study to be able to make the kind of
22 correlations that you claim to have made.

23 MR. MOYE: Is this 19.2 at A?

24 MR. FIGEL: Yes, and then sub 4.

25 MR. MOYE: Thanks.

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2 A. It is possible to isolate the effect
3 of the news from market, industry, and other
4 firm-specific factors simultaneously affecting
5 the firm's stock price.

6 Q. Do you agree with that?

7 A. Do I agree with -- what are you asking
8 me to agree with?

9 Q. That that is a condition that must be
10 present in order for an event study to reveal
11 the effects of an event on -- it talks about
12 future cash flows, but I assume you would agree
13 that price impact would also follow from -- from
14 the -- the correlation that the author is making
15 here.

16 A. If the purpose of the study is to
17 assign causality to a particular event, then one
18 needs to take steps to rule out the possibility
19 that it might have been some other event.

20 Q. Did you identify any day in which --
21 any day of the 24 -- let's just try to keep the
22 models and the studies clear.

23 Of the 24 days in the study that you
24 described in paragraph 100, did you find any
25 confounding event?

1 [REDACTED]
2 A. Please define what you mean by
3 "confounding event" when you ask that question.

4 Q. I mean what you said, which was an
5 event -- well, let's just make sure the record
6 is clear.

7 Why don't you define, for the purpose
8 of answering my question, what you understand
9 confounding event to be.

10 My question is, on any of the 24 days
11 in which you found the coincidence of a -- a
12 price impact and a Ripple news event, did you
13 identify a confounding event on that day?

14 A. As I would define it, no.

15 There is -- for example, one of the
16 events simultaneously lists, I think it's
17 Series B funding along with new product, new
18 customers on RippleNet. I don't consider that
19 confounding.

20 I -- it's not necessary for me to
21 assign causation to one or the other. It's
22 enough that prices moved around that
23 announcement.

24 So the answer to your question is, no,
25 I didn't find anything that I would consider to

1 [REDACTED]
2 be confounding.

3 Q. What factors, if any, in your model,
4 other than account growth of -- of XRP accounts,
5 do you contend are unique to XRP?

6 You understand my question?

7 A. I think that I do.

8 Well, in half the models that correct
9 for serial correlation, we have the lagged
10 return of XRP itself, on the right-hand side of
11 the regression, I suppose that would qualify.

12 Q. Anything else?

13 A. No, there's nothing -- there's no
14 other right-hand side control factor that is
15 unique to XRP, besides its account growth and
16 its lag return.

17 Q. And just so the record is clear, I
18 mean, it's clear what you've testified to with
19 respect to what you feel you've done to identify
20 and rule out confounding events.

21 I just want to ask you whether there
22 are additional steps that you did or did not
23 take. You with me? In other words, I'm not
24 looking for you to repeat what you've done. I'm
25 asking a specific -- I'm going to ask you a

1 [REDACTED]
2 series of specific questions about whether you
3 took particular steps.

4 A. Okay.

5 Q. All right. And let's just -- for the
6 purposes of keeping the record clear, we're
7 going to talk about the 24 days of confluence
8 that you identified in paragraph 100 of your
9 report. You with me?

10 A. All right.

11 Q. On any of those days, did you do a
12 news review to see whether there was any news
13 about the cryptocurrency markets generally?

14 A. Yes.

15 Q. What specifically did you do to look,
16 on that particular day, for news about the
17 cryptocurrency markets?

18 A. So on some days which were -- which
19 had statistically significant price returns
20 associated with them, I directed my team to take
21 some extra steps to make sure that certain facts
22 about those days were known.

23 Some of those steps included
24 LexisNexis searches around certain keywords
25 related to XRP.

1



2 Q. Anything else?

3 MR. FLUMENBAUM: Would you lean up,
4 please?5 THE WITNESS: Sorry, I thought the
6 microphone was working.

7 A. I'm sorry, what's the question?

8 Q. Anything else?

9 A. I don't think anything uniquely to
10 those days. Again, we -- we -- I want to be
11 careful. We checked the UTC -- I'm trying to
12 remember if we checked the UTC publication date
13 on the host web pages for every day or only days
14 associated with statistically significant
15 returns, and I think it may have been the
16 latter. I -- I'm fairly sure it was the latter.17 So that means we -- we also would have
18 clicked on the web page hosting the document,
19 looked at the -- now I'm going to get this
20 wrong, but the HTML code or the XML code or --
21 some computer scientist is going to tell me I
22 got the wrong term -- but the underlying script
23 for hosting the web page to look for the -- the
24 UTC date stamp for the web page, and did
25 Internet searches to see -- to look for other

1 [REDACTED]
2 information around these events and XRP.

3 That's what I can recall doing.

4 Q. What was the work product that was
5 generated in connection with these efforts to
6 conduct Internet searches on the days in which
7 there was the event?

8 A. I don't know that it necessarily led
9 to the creation of work product, if analysts
10 were searching for keywords and not finding
11 results. I don't necessarily know that work
12 product was created.

13 Q. So was there any document that you or
14 your staff has that would reflect the efforts
15 that you claim were made to determine, based on
16 an Internet search or a LexisNexis search on one
17 of those 24 days, as to whether there was
18 confounding events?

19 A. Well, I think in my report I discuss
20 the steps we took, for instance, to carefully
21 date the events, and I think in my report I also
22 mention conducting Internet searches around key
23 dates.

24 Q. Can you show me where in your report
25 you reported that?

1

2 A. I'm happy to, if I can go through it.

3 (Witness reviewing document.)

4 MS. KIM: Paragraph D, Appendix 18.

5 THE WITNESS: Right, Appendix D.

6 Thank you very much.

7 A. We talk about how we search for UTC

8 dates. And part of that process was searching

9 for keywords around -- around those dates.

10 Q. Can you point to me the paragraph or
11 the portions?

12 A. Yes, it's Appendix D, paragraph 18.

13 Q. All right. As I read paragraph 18,
14 that looks to confirm the dates of events.15 A. Yes, but it also refers to Factiva,
16 LexisNexis and Internet searches around keywords
17 related to the event.18 Q. To determine if the event was reported
19 earlier through some other news channel. It's
20 the same event. I'm asking for a search for
21 confounding events.22 A. Yes, but in -- in conducting a
23 LexisNexis and Internet search with keywords
24 related to XRP, confounding events could very
25 possibly have come up. If they had come up, I

1 [REDACTED]
2 would have noted -- we would have taken note.

3 No confounding events came up.

4 Q. The sentence you wrote, Dr. [REDACTED], is
5 that you conducted these various Internet
6 searches to determine if the event was reported
7 earlier through some other news channel. So
8 you're looking for stale news there.

9 A. Correct. I mean, that -- that was the
10 principal motivation for doing it, but your
11 question was if we did other research around the
12 24 days. The answer is yes. And you asked if
13 we did -- if we did Internet searches, the
14 answer is yes.

15 Q. Well, let me be clear about my
16 question to make sure we have a clear record
17 here.

18 Did you do Internet searches, or any
19 other searches, in an attempt to identify
20 confounding events on the 24 days in which --
21 that we've been talking about?

22 A. We -- I did not do additional searches
23 beyond what's described here for the purpose of
24 searching for confounding events.

25 I was satisfied with the statistical

1 [REDACTED]
2 properties and analytical methods that I adopted
3 and didn't feel that such efforts were
4 necessary.

5 Q. So the sentence you just identified as
6 conducting Internet searches was not for the
7 purpose of identifying confounding events on any
8 one of those 24 days. Correct?

9 A. It was not for that purpose, it may
10 have had that effect. It was for the purpose of
11 making sure that we dated events correctly.

12 Q. So you didn't direct your staff, and
13 you didn't personally, conduct any Internet or
14 other searches in order to determine whether
15 there were confounding events on any of the
16 24 days that we're talking about?

17 A. No. Again, it wasn't necessary.

18 Q. Based on your experience, does the
19 daily trading volume of financial -- of a
20 financial instrument on a given day have an
21 impact on the market price of that instrument on
22 that day?

23 A. That's a -- that's a difficult
24 question. And I -- I don't know that there's a
25 settled answer in the literature about the

1 [REDACTED]
2 relationship between volume and price. I don't
3 know that I have a view on the relationship
4 between volume and price.

5 I don't think I -- I would say that
6 that's not settled.

7 Q. Well, have you -- are you aware of
8 studies that look at price discovery of common
9 stock on public -- public exchanges?

10 A. Generally, yes.

11 Q. And isn't it a fact that those studies
12 generally suggest that more thinly traded stocks
13 are more volatile and more price sensitive to
14 news?

15 A. I would agree that there is a general
16 result that volume may relate to volatility,
17 within some thresholds perhaps. But not
18 necessarily on the level of price.

19 Q. Well, isn't volatility a proxy for --

20 A. No.

21 Q. -- price movement?

22 A. For price movement but not for the
23 level of price. The price is a hundred dollars,
24 the price is a hundred dollars, if there's a lot
25 of volume or a little volume.

1 [REDACTED]
2 Could that price fluctuate more or
3 less depending on the depth of the volume?

4 Perhaps.

5 Those are different questions.

6 Q. Well, then, do you agree with me as a
7 general proposition, financial instruments that
8 are more thinly traded are more volatile?

9 A. As a general proposition, I think
10 that's consistent with empirical findings.
11 Again, there may be exceptions here or there.

12 Q. Any reason that that would not carry
13 over to the market for digital assets?

14 A. I -- I have no reason to think that
15 digital assets are necessarily different in that
16 respect.

17 Q. Now, earlier you testified about
18 bitcoin essentially being the big whale in the
19 cryptocurrency market. Is that a fair lawyer
20 summary?

21 A. I would say that that's a fair
22 summary.

23 Q. And it follows that a digital token or
24 asset like lumens has less trading volume than
25 bitcoin on a given day.

1



2 A. Not having specifically looked at it,
3 that would certainly be my expectation.

4 Q. And do you have a view as to whether
5 the trading volume of XRP was more or less than
6 the trading volume of bitcoin?

7 A. Again, my expectation is that on most
8 days that you would want to look, you would
9 probably find the trading volume was less.

10 Q. What about Ether? Same question,
11 relative to bitcoin?

12 A. Again, I would expect it would be less
13 than bitcoin on any day you select at random.

14 Q. So with respect to an event that would
15 apply generally to cryptocurrencies, would you
16 expect to see a different price impact on lumens
17 or Ether as a compared to bitcoin?

18 A. I -- I don't know. I just -- I
19 just -- it would depend on the event.

20 I don't know.

Q.21 Well, a more thinly traded financial
22 instrument responding to the same news,
23 presumably, based on what you said, would be
24 more volatile, correct?

25 A. More volatile, I mean if -- if China

1 [REDACTED]
2 announces that it's shutting down the digital
3 token market, you might expect that that would
4 negatively impact almost all digital tokens.

5 Q. And would the price change be the
6 same -- would you expect the price change to be
7 the same for all digital tokens?

8 A. Certainly not. Bitcoin is trading at
9 tens of thousands of dollars per token, and most
10 tokens are trading at a fraction of a penny per
11 token; therefore, the price change would almost
12 certainly not be the same. The return may not
13 be the same, but there's no particular reason to
14 think it would be identical.

15 Q. And where would you expect to see
16 larger percentage changes? You call it price
17 return.

18 A. I -- I don't know. I don't have a
19 prior -- and I don't -- it would depend on the
20 news. I don't know.

21 Q. That was something that you could
22 have -- withdrawn.

23 There are economic empirical models
24 that allow an economist to test for the impact
25 of trading volume on price. Correct?

1

2 A. Yes. Such models exist.

3 Q. And you didn't incorporate any of

4 those models into your regression analyses in

5 which you were estimating the return of XRP

6 based on the models that referred to bitcoin,

7 Ether, and lumens, correct?

8 A. I generally followed the accepted

9 methodology and peer-reviewed academic

10 literature and applied similar regression models

11 you'll find there.

12 No, I did not incorporate a factor

13 related to trading volume.

14 Q. And the same is true for XRP, correct?

15 A. Well, all of these are models of XRP.

16 Q. No. I'm talking about when you were

17 using -- let's just break it up into two pieces.

18 You have your 20 models or so that show each

19 model and what the components of each model

20 were, correct?

21 A. Correct.

22 Q. And in none of those models did you

23 include reference to the trading volume of any

24 of those digital assets. Correct?

25 A. Correct. Trading volume not a control

1 [REDACTED]
2 factor in any of my models, as it is not a
3 control factor in peer-reviewed event studies
4 related to crypto markets.

5 Q. And similarly, when you were measuring
6 the price impact of XRP, you didn't consider the
7 volume of XRP that was traded in a given day,
8 correct?

9 A. I did not consider the volume. No, I
10 did not.

11 Q. And why not?

12 A. Following accepted methodology, it's
13 not typically included in an event study model
14 of the type that I'm doing.

15 What the -- one concern is that, for
16 instance, volatility, generally moves over time.
17 That's a concern. And that's one of the reasons
18 that researchers, myself included and the
19 researchers in the literature that I cite to,
20 use what are called rolling estimation windows,
21 precisely to allow changing volatility and
22 changing relationships, between returns and
23 control factors.

24 That's -- that's a common methodology
25 for addressing these sorts of concerns, and

1 [REDACTED]
2 that's what I did.

3 Q. Show me where in your report you make
4 reference to rolling estimation windows, to
5 account for changing volatility and changing
6 relationships.

7 A. All right. I'll start Appendix D this
8 time.

9 (Witness reviewing document.)

10 A. Appendix D, paragraph 10.

11 Q. Other than paragraph 10, do you
12 describe in any other place in your report what
13 steps you took to address changes in volatility
14 and change in relationships over time?

15 A. Well, section -- changing
16 relationships over time is the subject of
17 Section 7 of my report?

18 So Section 7 is entirely devoted to
19 documenting changing relationships between XRP
20 and at least bitcoin and Ether, just to make the
21 point that relationships change over time.

22 I have to flip back to my earlier
23 methodology section to see if I relate the
24 rolling window specifically to volatility. Of
25 course, I discuss rolling windows.

1

2 (Witness reviewing document.)

3 A. So I haven't read it yet, so I --

4 let's see if it talks about volatility. But

5 paragraph 42 and the footnotes there, 51 and 52,

6 I'm just reading them.

7 Footnote 51, A well-accepted method

8 for performing the event study is to estimate a

9 regression model over some period of time to

10 quantify typical relationships.

11 That -- that establishes the -- the --

12 the commonality of the six-month estimation

13 period. Footnote 52 in my analysis, the

14 estimation window, i.e., the 180-day window used

15 to estimate the regression, will change with

16 different dates of interest. This is typically

17 referred to as a rolling estimation window since

18 the estimation is rolled forward for each

19 subsequent date of interest.

20 By using a rolling estimation window,

21 I'll allow for the relationship between the XRP

22 prices and the explanatory factors as well as

23 the volatility of the random factor to change

24 over time. Use of a rolling model to account

25 for changing volatility and evolving

1

2 relationships among factors is often applied and

3 is accepted in peer-reviewed literature. See --

4 and then there are various citations.

5 Q. Anything else?

6 A. I'm sorry?

7 Q. Anything else?

8 A. Possibly, but I don't think so. I

9 imagine that those are the only places I discuss

10 it.

11 Q. In Appendix B to your initial report,

12 Exhibit 1, you list the complaint filed by the

13 SEC in this case as one of the documents that

14 you considered. Is that correct?

15 A. Strictly documents relied upon, but

16 yes.

17 Q. Did you read the complaint?

18 A. I did.

19 Q. How many times?

20 A. I don't know.

21 Q. Did you understand it?

22 A. I -- as a layperson reading a legal

23 filing, I would like to think I understood it as

24 well as a layperson would.

25 Q. Do you understand that the SEC

1 [REDACTED]
2 contends that the opinions that you reached in
3 your initial report support the allegations in
4 the complaint?

5 A. I'm sorry. Your question is -- do
6 I -- do I understand that -- I'm sorry. Could
7 you repeat the question.

8 Q. Do you understand that the SEC
9 contends that the opinion reached in your
10 reports support the allegations in the
11 complaint?

12 MR. MOYE: It's a yes-or-no question,
13 right? I'm going to object to the extent
14 you're asking for work product.

15 Q. I'm not asking you about
16 communications with counsel. I'm asking for his
17 understanding about whether the SEC is
18 sponsoring his opinion in support of its
19 theories as outlined in the complaint.

20 A. I would say that -- certainly, yes, in
21 the sense they asked me to conduct the study and
22 they're submitting my expert report as part of
23 their proceedings. Beyond -- I mean, beyond
24 that, I can't say.

25 Q. And you read the report before you

1 [REDACTED]
2 crafted your methodology, correct?

3 A. I assume you mean I read the
4 complaint?

5 Q. I'm sorry. Yes. Read the complaint.

6 A. Yes, I read the -- reading the
7 complaint was one of the very first things that
8 I did.

9 Q. Okay. What's your understanding of
10 the violation of law alleged in the complaint?

11 A. I don't know.

12 MR. MOYE: Object to the extent you're
13 asking for a legal conclusion.

14 Q. And just so Mr. Moyer can continue to
15 have a relaxed afternoon, I'm not asking you for
16 communications you had with counsel for the SEC.

17 A. Right. But, I mean, I'm not a lawyer.
18 I'm not -- I'm not qualified to offer a legal
19 opinion.

20 Q. I'm not asking for a legal opinion.
21 I'm asking for your understanding about what the
22 violations alleged in the complaint are.

23 A. Well, answering as just a layperson,
24 I -- my understanding is the SEC believes that
25 XRP should be classified as an investment

1 [REDACTED]
2 contract, and certain requirements that I don't
3 fully understand follow therefrom.

4 Q. Okay. And, again, I'm asking for your
5 understanding. What is your understanding as to
6 why the opinions that you reached support the
7 SEC's contention that XRP, or transactions in
8 XRP, are investment contracts?

9 MR. MOYE: Same objection. Work
10 product.

11 A. I just -- I'm -- I -- again, I'll say
12 it again. I'm not a lawyer. I'm not qualified
13 to offer a legal analysis.

14 I was asked to investigate whether
15 there's -- whether actions or news of actions by
16 Ripple Labs impacts XRP prices. I conducted the
17 best analysis that I could, and I found that
18 there is overwhelming evidence that it does.
19 That's -- that's -- there it is.

20 Q. Have you read the Supreme Court's
21 opinion in Howey -- in SEC versus W.J. Howey
22 Company?

23 A. No, I have not.

24 Q. Are you familiar with the Howey test?

25 A. Broadly familiar with it, yes.

1



2 Q. What's your understanding of it?

3 A. Well, as a layperson, just

4 recollecting what I think I understood, the

5 Howey test describes an investment contract as

6 a -- a -- an investment in a common enterprise

7 with an expectation to earn profit from the

8 efforts of a third party or promoter or

9 something like that.

10 Q. And are you aware, generally, that

11 courts apply the Howey test to determine whether

12 a contract, scheme, or transaction, qualifies as

13 an investment contract under the federal

14 securities laws?

15 A. Again, I'm not a lawyer, I -- I'm not

16 familiar with the law or the case law or the --

17 the legal issues.

18 I do recall the Howey test being

19 mentioned in the complaint. I assume it is

20 germane to the discussion, but that's just my

21 lay understanding.

22 Q. You write, in paragraph 12A, that

23 Using a well accepted event study methodology, I

24 find statistically significant evidence that XRP

25 prices react to news about Ripple's actions.

1

2 Do you see that?

3 A. Yes.

4 Q. And are you aware that the Howey test
5 requires proof that an offeree makes -- the
6 question in the Howey test is whether an offeree
7 makes an investment in a common enterprise and
8 is led to expect profit solely or primarily as a
9 result of the efforts of others.

10 MR. MOYE: Objection. Calls for legal
11 conclusion. Very explicitly.

12 A. So I'm sorry, what is your question?
13 I mean, I recognize those words when the Howey
14 test is being described.

15 Q. Well, what's your understanding, from
16 an economic perspective, of what it means for
17 the price impact on an asset to come solely or
18 primarily from a person or entity?

19 A. As an economist, I don't think those
20 words have very much meaning at all.

21 Very few things, speaking as an
22 economist, could be said to derive solely from
23 the efforts of one person.

24 The -- the stock price of
25 XYZ Enterprises does not depend solely on the

1 [REDACTED]
2 efforts of XYZ Enterprises. So as an economist,
3 I -- I'm not quite sure what meaning or
4 significance I would attach to those words.

5 I'm sure they're well defined legally,
6 but as an economic matter, I -- I don't think
7 it's clear what those words would mean.

8 Q. So as a result, you didn't attempt, in
9 your event study methodology, to answer the
10 question whether offerees or holders of XRP were
11 led to expect any increase in the value of their
12 XRP based solely or primarily on the efforts of
13 Ripple. Correct?

14 A. Since that's not an economic question,
15 I did not conduct an economic analysis of such a
16 question. I conducted an analysis which
17 demonstrates that Ripple Labs -- some of the
18 things Ripple Labs does moves XRP prices.

19 Q. And your methodology didn't rely on
20 any information about the expectations of XRP
21 holders, correct?

22 A. That is correct. I -- I don't know
23 the motives of people who buy XRP. That has no
24 bearing on my analysis.

25 Q. And your methodology didn't seek to

1 [REDACTED]
2 answer the question whether XRP price returns
3 were caused solely by the actions of Ripple.
4 Correct?

5 A. Yeah, I would -- I would say that that
6 is not a question that an economist could
7 answer, whether something is due solely to
8 something else.

9 In -- in the field of economics, I --
10 I'm hard pressed to think of any example of
11 anything that is due solely to something else.
12 If Party A and Party B make an exchange, Party A
13 and Party B are involved, as an economic matter.

14 Again, legally, I mean, perhaps it's a
15 well-defined term.

16 Q. So the answer to my question is your
17 methodology did not seek to answer the question
18 whether XRP price returns were caused solely by
19 the efforts of Ripple Labs. Correct?

20 MR. MOYE: Objection. Asked and
21 answered.

22 A. I would -- I would say, as I testified
23 before, that that question is not an
24 economically well-formed question.

25 Q. And so your methodology doesn't answer

1 [REDACTED]
2 it. Correct?

3 MR. MOYE: Same objection.

4 A. My methodology establishes that
5 Ripple Labs does things to move XRP prices.

6 Q. If you would, Dr. [REDACTED], I'd like an
7 answer to my question. Does your methodology
8 allow you to answer the question whether the
9 actions of Ripple Labs are the sole cause of XRP
10 price returns?

11 MR. MOYE: Objection. Calls for legal
12 conclusion.

13 A. I'm struggling to -- to understand
14 that as an economist. As an economist, the
15 question doesn't make a great deal of sense.

16 That's all I can say.

17 So -- that's all I can say.

18 Again, it may be a very well-defined
19 legal term, but I don't think an economist could
20 render an opinion one way or another whether
21 something was due solely to the actions of one
22 person versus another.

23 Every -- as I said, every act of
24 exchange involves at least two parties. It's
25 just not a -- not a term that economists tend to

1
2 use.

3 Q. So you're not offering an opinion in
4 this case that Ripple's actions were the sole
5 factor impacting the price of XRP; is that
6 correct?

7 A. Correct. I -- I -- nowhere do I offer
8 such an opinion. I offer the opinions as laid
9 out in my report.

10 Q. And similarly, your methodology
11 doesn't allow you to answer the question whether
12 XRP price returns were caused primarily by the
13 actions of Ripple Labs. Correct?

14 MR. MOYE: Objection. Calls for legal
15 conclusion.

16 A. Again, as an economist, I -- I -- I'm
17 not comfortable using the word "primarily."

18 What I have -- what I have shown, what
19 I've attempted to show and what I think the data
20 clearly show, is that XRP -- I'm sorry,
21 Ripple Labs does things to move XRP prices.

22 XRP prices react to things that
23 Ripple Labs does. XRP prices react to things
24 that happen to Ripple Labs.

25 That's -- that's what I was asked to

1 [REDACTED]
2 investigate, that's what I did investigate, and
3 that's what I found.

4 Q. And on how many days, in the
5 approximately 2400 days covered by your study,
6 did you find evidence that the price of XRP was
7 statistically correlated with an action of
8 Ripple Labs?

9 A. Well, the only number that I can
10 recall offhand is one that we discussed. I
11 provide an example of one case in my report,
12 Model Number 1, the constant mean model, and
13 under that model, out of the 105 days being
14 tested in Section 6(f), 24 are associated with
15 statistically significant positive XRP price
16 increases.

17 Q. All right. Your methodology did not
18 seek to answer the question whether XRP price
19 returns were caused primarily by the actions of
20 Ripple Labs. Correct?

21 MR. MOYE: Asked and answered.

22 A. I think we asked that question, but --

23 Q. We asked it about solely. Now I'm
24 asking it primarily.

25 A. I thought we also had discussed that

1 [REDACTED]
2 way, but fine.

3 Again primarily, the word "primarily"
4 just is not a word that, as an economist, I -- I
5 would apply to an analysis like this, or any
6 other analysis.

7 If -- if Alice sells an apple to Bob,
8 you could say, Alice sold the apple or you could
9 say Bob bought the apple. I -- parsing out the
10 primary-- who primarily did what is just not
11 something that is usually in the domain of an
12 economist.

13 Q. And you're not offering an opinion in
14 this case that the XRP price returns were caused
15 primarily by the actions of Ripple Labs.
16 Correct?

17 MR. MOYE: Asked and answered.

18 A. As I testified, I -- I was asked to
19 investigate a question, and I found significant
20 evidence, statistical evidence, that XRP prices
21 react to actions by Ripple Labs.

22 Q. Now, you say "primarily" is not a word
23 that economists --

24 A. I -- I do -- I'm just wondering how
25 much -- are we coming up on a break? I'm just

1

2 asking.

3 Q. Sure, we can take a break.

4 A. I don't want -- I don't want to derail

5 things. If it's convenient at some point.

6 Q. As I say, we can do this for 16 hours

7 so --

8 MR. MOYE: No, we can't.

9 MR. FIGEL: Any time to break is as

10 good as any other time. Let's go off the

11 record.

12 THE VIDEOGRAPHER: We're going off the

13 record at 3:36 p.m.

14 (Recess from 3:36 to 3:50.)

15 THE VIDEOGRAPHER: We're back on the

16 record at 3:50 p.m.

17 Q. Dr. [REDACTED], do you recall your testimony

18 about how the word "primarily" doesn't --

19 isn't -- isn't a term an economist would use?

20 A. Beyond how a -- a layperson might use

21 it, but I meant as a scientific term in a

22 context like this, I don't think it's very well

23 defined.

24 Q. So take a look at page 22 of your

25 report.

1

2 A. Yes.

3 Q. In the fourth bullet from the top you

4 say, Ripple Commercialization Initiative.

5 Initiative launched by Ripple Labs primarily

6 described as being related to the

7 commercialization or promotion of Ripple's

8 products or technology.

9 A. Yes.

10 Q. What did you mean by "primarily"

11 there?

12 A. I meant that a reading of the

13 announcement and description of the initiative

14 made it sound largely related to

15 commercialization or promotion of its products

16 or the general ecosystem.

17 Q. So there you're using "primarily" and

18 "largely" synonymously?

19 A. There I'm using the word "primarily"

20 as -- as used in common speech, I would say.

21 Q. And going back to your opinion, you're

22 not offering the opinion that the price

23 impact -- any price impact on XRP was primarily

24 or largely caused by actions of Ripple Labs.

25 Correct?

1 [REDACTED]
2 A. I'm not offering that opinion, that is
3 correct. The -- to -- to insert those words
4 into an analysis like that I just think is
5 economically not well defined.

6 Q. And -- and --

7 A. Let me -- if I may finish.

8 I mean, the value of a citrus grove is
9 going to depend on the weather. It's going to
10 depend on the general conditions of supply and
11 demand for citrus.

12 So, I -- you know, inserting the word
13 "solely" and "primarily," I don't know what
14 standard needs to be met, or how it would be
15 determined by an economist, to know whether
16 those words, which have a legal meaning, could
17 be applied to -- to a result like this. So
18 I'm -- I'm not going to do it.

19 Q. And the substance of your opinion is
20 that you found evidence that XRP prices react to
21 news about Ripple's actions. Correct?

22 A. I think I may have said "select
23 actions." But in substance, yes.

24 Q. And you found that on about 1 percent
25 of the days during the period that you examined.

1

2 Correct?

3 24 days out of about 2400.

4 A. I mean, that's -- that's not a

5 calculation that has any meaning.

6 One could divide 24 by 2400, but that

7 doesn't mean anything in this context. Out of

8 105 events -- and, again, this isn't the only

9 basis for my opinion.

10 But focusing on that, out of 105

11 events, 24, plus or minus, are associated with

12 significant positive returns, and that is an

13 outcome that is so unlikely, but for some kind

14 of a correlation or association or dependence

15 between Ripple Labs and XRP prices. That is the

16 statistical basis of my opinion.

17 Q. But what you found when you found that

18 correlation, you only found it on that model 24

19 times out of approximately 2400 days. Correct?

20 A. I -- I reject the -- the formulation

21 of your question, 24 out of 2400. It's 24 out

22 of 105.

23 I'm testing 105 days. And I find 24

24 of them, again according to one model, have

25 statistically significant returns. And that

1 [REDACTED]
2 outcome is incredibly unlikely.

3 Q. And you found no correlation between
4 the actions of Ripple Labs on the 2400 minus 24
5 days that you -- that were encompassed in your
6 study, correct?

7 A. I don't accept your characterization
8 at all. I think you're misstating, or -- the
9 basis of my analysis. It's not the right way to
10 think about it. I had a set of events. This is
11 how events studies work.

12 I had a set of events. I look to see
13 if there are price reactions in that set of
14 events. And I found that there were far more
15 than could be accounted for under the hypothesis
16 that Ripple Labs and XRP are independent of each
17 other.

18 Q. I understand that, and you've
19 testified to that.

20 My point is, the only time you found a
21 statistical correlation between a Ripple news
22 event and a statistically significant XRP price
23 impact was on 24 days.

24 Correct?

25 MR. MOYE: Objection. Argumentative.

1



2 A. According to Model 1, the intersection
3 between -- and according to Model 1, studying
4 the superset of various news categories, the
5 intersection between news days and significant
6 market days numbered 24.

7 Q. All right. To do a proper event
8 study, you are required to state a hypothesis,
9 correct?

10 A. I would say that statistical tests
11 revolve around the acceptance or rejection of
12 certain null hypotheses.

13 Q. And what was the hypothesis that you
14 sought to accept or reject, in connection with
15 the opinion you're offering in this case?

16 A. The null hypothesis is that
17 Ripple Labs and XRP price increases are
18 independent of each other.

19 Q. And your conclusion is they're not
20 independent, correct?

21 A. That is correct.

22 Q. You weren't asked to determine whether
23 the actions of Ripple Labs were the sole or
24 primary reason that we see significant price
25 increases, correct?

1



2

3

4

A. Again, it's not a well-formed economic question, but that was not the question that was posed to me.

5

6

7

8

Q. And you didn't seek to answer the question whether the actions by any person or entity other than Ripple had an impact on XRP prices. Correct?

9

10

11

12

13

A. I think that's fair. I certainly did look at how XRP returns correlate with broad crypto -- other broad digital token returns. Now, that's not -- I acknowledge that's not exactly what you asked.

14

15

16

17

But I did look at that question. I was not investigating whether the actions of, say, XYZ Enterprises, impacts XRP prices.

18

19

20

21

22

Q. So the answer to my question is no. You didn't conduct any analysis to determine whether actions by any person or entity outside of Ripple had an impact on XRP prices. Correct?

23

24

25

A. I -- I'm going to agree with that. I would say that that's fair. I was looking for a relationship between Ripple Labs and XRP prices. I was not looking for a

1 [REDACTED]
2 relationship between something else and XRP
3 prices. Again, above and beyond a general
4 exploration of correlation in the digital token
5 market.

6 Q. All right. And couple times you have
7 included in your answer that XRP prices react to
8 certain news, and public statements about
9 Ripple's actions. Correct?

10 A. Yes, that's correct.

11 Q. And your methodology demonstrated that
12 there's not a statistically significant price
13 return on XRP with respect to all news about
14 Ripple. Correct?

15 A. Correct.

16 Q. And similarly, you did not find a
17 statistically significant price return on XRP,
18 with respect to all public statements about
19 Ripple. Correct?

20 A. That's correct. I wouldn't expect
21 such a finding.

22 Q. And your methodology didn't determine
23 whether a particular Ripple news event caused
24 any particular price movement. Correct?

25 A. My methodology, based on the

1 [REDACTED]
2 statistical results and analysis that I
3 conducted, I believe XRP prices reacted to news
4 of certain actions from Ripple Labs.

5 Q. So are you -- is your opinion that
6 your study proves causation between Ripple
7 events and a statistically significant XRP price
8 movement -- price return?

9 A. Causation is not a question which is
10 generally subject to proof as a matter of
11 economics. Correlation or independence is a
12 question which may be subject to proof.

13 So the statistical test, the -- the
14 statistical test, the null hypothesis, is
15 expressed in terms of correlation.

16 The question of what kind of inference
17 you can draw from a statistical result depends
18 on your economic understanding of the -- of the
19 facts of the matter and maybe some other
20 robustness checks that you may run to rule out
21 alternative explanations.

22 The sum total of all of that work
23 supports a -- an inference of likely or -- of
24 likely causation. But I wouldn't say that one
25 could prove causation.

1



2 Q. So it's -- it's an inference of
3 causation, but you don't claim that you have
4 proof that any Ripple action or event caused a
5 statistically significant price return on XRP.

6 Correct?

7 A. I would say that I have the type of
8 economic evidence which is often used when
9 assigning or assessing loss causation, on asset
10 prices. Whether a philosopher would say I've
11 proven something, I don't know.

12 I fully accept the truism that
13 correlation doesn't prove causation, but I think
14 correlation in conjunction with other analysis
15 can support an inference of likely or reasonable
16 causation.

17 Q. What do you mean by the -- I want to
18 make sure I got your -- when you say, I fully
19 accept the truism that correlation doesn't prove
20 causation, what is the truism you're referring
21 to?

22 A. Well, it's generally understood that,
23 just because two things -- let's call them A
24 and B.

25 Pardon me. My apologies.

1

2 Just because two things, A and B, are
3 correlated, that alone doesn't tell you whether
4 A caused B or B caused A, or whether X caused
5 both A and B.

6 Independence, finding that A and B are
7 independent of each other is generally evidence
8 that A didn't cause B. But simply finding
9 correlation by itself wouldn't be enough to make
10 a statement of, because A and B are correlated;
11 therefore, I know that A caused B.

12 Q. And to make the point in a slightly
13 different way, on the days in which you did not
14 find a correlation between one of your 105
15 Ripple events and a statistically significant
16 price return on XRP, you're not offering an
17 opinion about the presence or absence of
18 causation with respect to that relationship.
19 Correct?

20 A. Sorry. I'm trying to understand that
21 question.

22 Can you repeat it, please.

23 Q. Let me see if I can ask it
24 differently.

25 Just as you said that your methodology

1 [REDACTED]
2 doesn't prove causation between a Ripple news
3 event and a statistically significant price
4 return for XRP on the 24 days in the model that
5 we've been talking about, you similarly don't
6 attempt to explain why there was not a
7 correlation between a Ripple news event and the
8 absence of a statistically significant XRP price
9 return. Correct?

10 A. If by that you mean on the 75-, 79-odd
11 days where there is news but no significant
12 price reaction, did I do an exploration to
13 understand why there was no significant price
14 reaction on those days? Is that your question?

15 Q. Well, why don't you answer that one.

16 A. The answer to that question is, per
17 standard practice and event studies, no, I did
18 not do an investigation to see why there was not
19 a significant price reaction on those 79 days.

20 Obviously, it doesn't make any
21 difference to my analysis or opinion why there
22 was not a price reaction on those days.

23 Q. And that's because your methodology
24 seeks to prove a correlation, not causation.

25 Correct?

1 [REDACTED]
2 A. I would be a little bit careful about
3 that. My -- the event study methodology is a
4 statistical analysis of correlation, which could
5 be accepted or rejected per scientific
6 standards, generally, as a -- as part of an
7 inference of likely causation.

8 Again, we want to -- if you want to
9 use the word "proof," I don't know what proof
10 would mean there.

11 But the event study usually -- a
12 typical event study would proceed something
13 along the lines of, I observe a statistically
14 significant price reaction; I -- I check certain
15 boxes; and I, therefore, am willing to make the
16 statement that the price reacted to the event.

17 Q. Well, let me give you a hypothetical
18 which is counterfactual, right?

19 On a day in which you have a Ripple
20 news event and a -- that -- that coincides with
21 a date on which there is a statistically
22 significant XRP price return, right?

23 A. Uh-huh.

24 Q. That price return could have been
25 caused by any number of factors. Correct?

1

2 A. No.

3 Q. Well, you don't know if the reason the
4 price went up was because John Doe in Albania
5 decided to buy a billion units of XRP, correct?

6 A. Well, wait a minute. The -- the price
7 went up presumably because there was change in
8 relative supply and relative demand. Whether
9 that was John Doe in Albania or Sally Smith in
10 Arkansas, I don't know, and I don't see what
11 difference it would make.

12 There was a change in relative supply
13 and demand, which is another way of saying, The
14 price moved, and the question is, Why did the
15 price move. Why was there a change in supply
16 and demand.

17 And the reasonable explanation is
18 there was a change in supply and demand because
19 of the news of this event.

20 Q. Well, your methodology didn't test to
21 see whether supply changed in response to a
22 Ripple news event, did it?

23 A. No event study methodology asks the
24 question of whether the increase in price was
25 because supply moved or because demand moved.

1 [REDACTED]
2 I've never seen an event methodology -- event
3 study methodology that concerns itself with
4 that. They moved relative to each other, and,
5 therefore, the price changed.

6 Q. Well, you don't know, do you?
7 You're --

8 A. I do know that.

9 Q. Well, tell me what data you studied to
10 determine whether it was an increase in demand
11 that caused a price impact or a reduction in
12 supply that caused a price impact.

13 A. Again, I just said, it doesn't make
14 any difference to the event study methodology
15 which of demand or supply moved. It doesn't
16 make any difference. Nobody ever asks that
17 question.

18 The price moved. It is, therefore,
19 axiomatic that there was a change in relative
20 supply and demand. The question is, Why was
21 there a change in relative supply and demand,
22 that's the question.

23 And a reasonable answer, the answer
24 that I think the evidence supports is, there was
25 a change in relative supply and demand because

1 [REDACTED]
2 of news of the actions of Ripple Labs.

3 Q. Did you -- on any of the 24 days in
4 the model we're talking about, did you look at
5 the volume of XRP trading on that day?

6 A. Since it's not relevant, no, I did
7 not.

8 Q. And as a result, you're not in a
9 position to offer an opinion as to whether the
10 price moved because there were more buyers than
11 sellers, or fewer sellers than buyers, correct?

12 A. I'm sorry, I shouldn't laugh. I've
13 never seen any event study concern itself with
14 the questions you're posing.

15 I will, therefore, say that you're
16 correct that I did not attempt to determine
17 whether supply moved more than demand or whether
18 demand moved more than supply.

19 I would further point out that looking
20 at trading volume can't help you answer any
21 question like that, but it's -- it's such a
22 strange exercise and question, it would never
23 occur to me, or I think anybody else, to even
24 attempt anything along the lines of what you're
25 suggesting.

1



2

So no, I didn't do it.

3

Q. All right. If you could turn to

4

paragraph 75 on page 32.

5

A. Yes.

6

Q. And in the bottom of paragraph 75, you

7

write, From an economic perspective, one

8

explanation, of course, is that news of the

9

event causes the XRP price response.

10

You wrote that, correct?

11

A. Yes.

12

Q. And why did you add "one explanation"?

13

A. Well, I wanted to acknowledge --

14

this -- this goes back to the truism that we

15

were discussing a few minutes ago. Simply

16

establishing the two things are correlated, by

17

itself, doesn't tell you which one is causing

18

the other, or whether there's even a third event

19

or third force causing both.

20

So I wanted to say here, one

21

possibility is that the news is causing the

22

price, and then in Footnote 71, I try and lay

23

out what the other logical possibilities are,

24

but why, you know, I -- I don't think those are

25

at all plausible or -- or reasonable.

1 [REDACTED]
2 Hence, I'm -- I'm comfortable in
3 offering the opinion that in my opinion, the
4 evidence indicates that the news is causing the
5 price.

6 Q. And you say that -- you outline, in
7 Footnote 71, logical possibilities. What do you
8 mean by logical possibilities?

9 A. Well, so, let's accept that A and B
10 are correlated.

11 A could cause B, or B could cause A,
12 or X could cause both.

13 So in this case, the A is the news
14 from Ripple Labs, and the B is the XRP price
15 increase. Let's just accept for a moment that
16 those two things are correlated. Okay. What's
17 causing that?

18 What I lay out here is, you know the
19 first one, another explanation might be what I
20 say is the reverse, that the price caused the
21 news, rather than the news caused the price.

22 Now, what that would mean, and why I
23 think we could dismiss that immediately as
24 unreasonable, is that Ripple Labs, with its
25 crystal ball, knowing that the price of XRP was

1 [REDACTED]
2 about to go up, strategically decided to release
3 certain announcements at exactly the right time.

4 I -- I simply reject that as at all
5 possible. So in that -- going back to the A and
6 B terminology, the idea that B could cause A,
7 the idea that the price could cause the news,
8 I -- I just think is -- is unreasonable and we
9 can dismiss it.

10 Then the question of, Well, could
11 there be some X factor that's causing both.
12 Again, we've discussed this at length this
13 morning. This is the idea of some confounding
14 event that is driving both things; I think we
15 can dismiss that as also unreasonable.

16 And that leaves sort of the last --
17 the last person standing, that the most likely
18 explanation of the statistical evidence is that
19 the news caused the price.

20 Q. Tell us what you mean by an X factor?

21 A. I mean what some might term
22 confounding event.

23 So something else both causes, you
24 know, in this case, Ripple Labs to get venture
25 funding and also causes XRP prices to go up.

1

2 Q. But you acknowledge that an X factor
3 is a possibility, correct?

4 A. I acknowledge, of course, that it is a
5 logical possibility. Therefore, I take a number
6 of steps to rule it out as not probable.

7 Q. And it's a logical possibility on any
8 of the 24 days in which you found the
9 correlation between the Ripple news event and a
10 statistically significant price impact on XRP,
11 correct? It's a possibility on every one of
12 those events.

13 A. Not -- I cannot say as a matter of
14 logic, that it is impossible. I can say that
15 following all the steps that I took, I don't
16 think it's at all likely or reasonable with an
17 explanation.

18 Q. And you gave some examples of possible
19 X factors in Footnote 71, correct?

20 A. I don't -- I don't think I actually do
21 provide examples of what these X factors might
22 be. I just simply label them "X factor."

23 Q. Well, what did you mean when you
24 wrote, These events -- following the sentence
25 about the X factor, what did you mean when you

1 [REDACTED]
2 wrote, These events, of course, are disparate in
3 their nature, including venture funding rounds
4 involving multiple investors, joint ventures in
5 Asia and licensing decisions made by the State
6 of New York.

7 A. I'm referring to the events being
8 studied here. This is the milestone category.
9 Those are the milestones.

10 So we -- we'd have -- we'd have to be
11 positing some X factor that is causing venture
12 founding rounds, New York regulatory decisions,
13 various other things, all -- so that -- causing
14 it in such a way that the day that we happen to
15 announce that we're getting venture funding
16 Round A also happens to be the day that XRP
17 price go up.

18 Again, I just -- I just don't think
19 that's -- that's a plausible or reasonable
20 explanation. I acknowledge here in the footnote
21 I cannot rule it out as logically impossible.
22 I -- I do end up dismissing it as a reasonable
23 explanation.

24 Q. Can you posit, or imagine, any factor
25 that could have a different price impact on XRP

1 [REDACTED]
2 as opposed to bitcoin or Ether?

3 A. Besides actions by Ripple Labs?

4 Q. Yes.

5 A. Well, sure. I think -- I think --
6 what is it, the Arrington fund, when -- when he
7 announces setting up an XRP-denominated fund,
8 that might be something that would spur interest
9 in XRP.

10 Of course, it also presumably would
11 spur creation of XRP accounts, but that might be
12 an example of something that might move the XRP
13 price. I don't know.

14 Q. Anything else?

15 A. I -- I mean, not without just
16 descending into wild speculation of things that
17 might be.

18 Q. Well, John Doe's been thinking about
19 buying XRP for six months and, on that
20 particular day, decides he wants to buy a lot of
21 XRP. That would be an X factor, wouldn't it?

22 A. An X factor that cause-- why would
23 John Doe buying XRP cause the price to go up?

24 Q. Didn't you just testify that increased
25 demand and fixed supply --

1



2 A. That's -- that's simply a component of
3 demand. I said that demand relative to supply
4 changes, and so price moves. John Doe buying
5 XRP is just an example of demand --

6 Q. Doesn't it --

7 A. -- not an example of demand changing
8 relative to supply.

9 Q. Doesn't it depend on what size
10 purchase he makes?

11 A. Possibly.

12 But whether it causes the price to go
13 up or down -- sometimes people want a volume
14 discount. If he buys a lot of XRP, maybe he'll
15 want a volume discount and execute that trade at
16 a slightly lower price than the prevailing
17 market price. I -- who can say?

18 Q. So let's go to page 1 of Appendix D of
19 your report.

20 A. Uh-huh.

21 Q. Tell us why you had to add an
22 Appendix D to explain your methodology.

23 A. Well, of course, I -- I detail aspects
24 of my methodology in the main body of my report.

25 Certain details, which I don't think

1 [REDACTED]
2 are necessary to understand in order to
3 understand the basic approach that I took, I --
4 I moved to an appendix, really for readability
5 issues.

6 But, thinking about, you know, who
7 might be reading this report and how familiar
8 they may or may not be with event studies, I
9 decided to provide some additional detail.

10 Q. All right. Could you read the first
11 sentence of paragraph 2 of Appendix D, please,
12 for the record.

13 A. An event study is conducted by first
14 specifying a model of expected price movements
15 and then testing the extent to which actual
16 price movements differ from those expectations.

17 Q. And you go on to say, The question an
18 event study answers is whether the differences
19 between actual and expected price movements are
20 sufficiently large that, from a statistical
21 standpoint, such differences are unlikely to be
22 explained by randomness.

23 Is that correct?

24 A. I did write that, yes.

25 Q. And then you note, In this context --

1 [REDACTED]
2 and by "this context," we're talking about the
3 market for XRP, correct?

4 A. No. I'm speaking specifically in
5 the -- in the general context of an event study,
6 to explain what randomness means.

7 I mean, it's true of XRP as well, but
8 I wasn't specifically referring to XRP when I
9 said "in this context."

10 Q. But the sentence you wrote, In this
11 context, randomness refers to the tendency for
12 actual outcomes, in this case the actual price
13 movement, to deviate from the expected outcomes
14 in ways which appear random in nature, applies
15 equally to XRP, correct?

16 A. Yes.

17 Q. And on page 28, paragraph 60, you note
18 that you considered 20 different models
19 estimated using 188-day estimation windows; is
20 that correct?

21 A. 180 days, not 188 days.

22 Q. It's getting -- I thought I said 180.

23 A. I heard 188.

24 Q. You might well have, but I agree it
25 says 180.

1 [REDACTED]
2 And then you test the tendency for the
3 actual XRP price returns to deviate from the
4 expected XRP price returns that are predicted by
5 your 20 models. Correct?

6 A. Correct.

7 Q. And in the models that you have
8 created, the expected return is derived
9 primarily from the price returns of other
10 cryptocurrencies. Is that correct?

11 A. Several of the models -- yes, that --
12 I mean, in many of the models that would be
13 true.

14 Q. And you have a demonstrative to assist
15 the reader on page 19. That's your Figure 7.
16 Is that correct?

17 A. I -- I hope I didn't have -- shuffle
18 things out of order.

19 Okay. Page 19, yes. Yes, that's
20 correct.

21 Q. You with me?

22 The only independent variables in
23 these various models are the growth in XRP
24 accounts and the returns of other
25 cryptocurrencies. Is that correct?

1



2 A. Except in half the models where we're
3 controlling for serial correlation, in which
4 case you also control for lags of those things,
5 as well as lagged XRP returns.

6 Q. So your lagged independent variables
7 are all factors independent of XRP; is that
8 correct?

9 The lagged independent -- the column
10 on the far right?

11 A. They are the independent variables.
12 So whatever independent variables you have,
13 whether that's bitcoin, Ether, whatever it may
14 be, you have those returns measured
15 contemporaneously with XRP returns, and then you
16 also include the one-day lag of those returns.

17 Q. But again, those lagged independent
18 variables are exclusively related to data
19 derived with respect to bitcoin, Ether, and
20 lumens, correct?

21 A. And XRP account growth.

22 Q. So your estimation models, is that a
23 fair description of what these are?

24 A. Yes, I would say so.

25 Q. Your estimation model suggests that a

1 [REDACTED]
2 reasonable investor's expectations of XRP price
3 returns would be based on the performance of the
4 three other cryptocurrencies that you use in
5 your models. Correct?

6 A. Well, I have models with one, two,
7 three, five. But, I mean, framing it as the
8 expectations of a reasonable investor, sort of
9 adding words that one doesn't usually add, but
10 we can decompose or project XRP returns on these
11 factors. I mean, it's standard practice, I
would say.

13 Q. But the baseline expectation of how --
14 how XRP prices will move, according to your
15 model, is predicted by the movement of other
16 cryptocurrencies or the three other
17 cryptocurrencies that you have in Figure 7,
18 correct?

19 A. In different combinations. And,
20 again, the equal-weighted index adds two other
21 cryptocurrencies to the mix.

22 Q. And if we could go to page 6,
23 paragraph 15.

24 I'm sorry, of your rebuttal report. I
25 got that wrong. Sorry.

1

2 A. Sorry. Page 6.

3 Page 6, paragraph 15. Yes?

4 Q. I'm just going to read the sentence so

5 we can move along. You write, Even accepting

6 all of his -- and that's Professor Ferrell's --

7 results as correct, Dr. Ferrell's analysis would

8 only serve to establish that, romanette i, there

9 is a relationship between XRP returns and those

10 of other digital tokens (which is not disputed

11 and which I established in the [REDACTED] report).

12 Do you see that?

13 A. I do see that, yes.

14 Q. What do you mean when you say that

15 there is a relationship between XRP returns and

16 those other digital tokens?

17 A. I mean that there is a correlation

18 between XRP returns and the returns of other

19 digital tokens. Or that in the context of a

20 factor model of the type that Dr. Ferrell is

21 running, that you would find that -- that other

22 digital token returns enter that factor model

23 with some degree of statistical significance.

24 Q. And you say that's not disputed and

25 you establish that in the [REDACTED] report.

1

2 What do you mean by that?

3 A. I mean that I -- I don't -- I

4 certainly didn't dispute it, and I -- I

5 certainly don't dispute it. I can't -- I can't

6 speak to whether other people dispute it.

7 Perhaps I should have inserted the

8 word "I." I don't dispute.

9 But my opening report has -- what is

10 it? -- Section 7, which shows at some length how

11 XRP returns correlate with, for instance,

12 bitcoin and how they -- how it relates to

13 bitcoin and Ether at different points in time.

14 So that's what I meant when I said,

15 I -- I -- again, I should have inserted the word

16 "I" -- don't dispute that there is an

17 association between XRP returns and other

18 digital token returns, and I demonstrated that

19 in my opening report.

20 Q. And in your opening report, that was

21 the data that you relied on, to predict the

22 expected XRP return. In order to provide the --

23 the data from which you would identify

24 statistically significant XRP price returns.

25 Correct?

1

2 A. I'm tempted to say correct. That
3 sounds right.

4 Q. Well --

5 A. There are too many words there, but
6 that sounds right. That sounded right. That is
7 the data that I used in my analysis.

8 Q. Let's see if we can make the record
9 clear here. As I understand it, your
10 methodology -- withdrawn.

11 As I understand it, the way in which
12 you identify the expected XRP price return was
13 by the 20 models that you have in Figure 7,
14 most, if not -- most of which relied on the
15 price returns of bitcoin, Ether, and lumens,
16 correct?

17 A. In some -- let's insert the word "in
18 some combination," right? Not all of them have
19 lumens. But generally speaking, yes.

20 Q. And that -- those were the -- those
21 were the factors -- withdrawn. I don't want to
22 use "factors."

23 That was the data from which you
24 predicted the expected XRP return. Correct?

25 A. With XRP account growth in some models

1

2 and lags in other models, but broadly speaking,
3 yes.

4 Q. And I -- I don't have it memorized.

5 But in some of the models -- I think it's 2, 4,
6 6, and 8 -- the only data that you looked to for
7 predicting XRP price returns was your constant
8 variable and either bitcoin alone or bitcoin
9 plus Ether or bitcoin plus Ether plus lumens,
10 correct?

11 A. That is correct.

12 Q. And for each of those models, you
13 determined that they were -- you determined that
14 each of those models were reliable estimators of
15 expected XRP price returns. Correct?

16 A. I considered all of those models to be
17 reasonable factor models, and they are in the
18 class of factor models.

19 Reasonable factor models of XRP
20 returns.

21 Q. And, in fact, you relied on those
22 results in reaching your opinions. Correct?

23 A. Among other results, yes.

24 Q. And so one way in which someone who
25 wanted to expect the returns, the future returns

1 [REDACTED]
2 of XRP, and estimate what those returns would
3 be, would be able to look to the returns of
4 bitcoin, Ether, and lumens in order to reach
5 that -- that -- make that judgment, correct?

6 A. Well, I would just be a little
7 carefully. It's not a useful forecasting model
8 if that's what -- if that's what you're trying
9 to suggest. Because remember that the returns
10 are measured at the same time as XRP returns.

11 Q. Fair enough.

12 Would you --

13 A. So I'm not saying you would look at
14 what happened on bitcoin today to form a
15 forecast of what will happen in XRP tomorrow.

16 Q. Well, you do use that as one of your
17 models, but let's -- let's -- I take it as let's
18 take the forecasting point.

19 If you wanted to understand what the
20 expected return of XRP was during the period
21 that you examined, the models you used
22 established that using the various models with
23 XRP -- I'm sorry, with bitcoin, Ether, and
24 lumens, were reliable estimators of the returns
25 of XRP. Correct?

1



2 A. I -- I -- they -- I thought they were
3 all reasonable factor model specifications. And
4 so I wanted to consider -- I wanted to make sure
5 that my results were robust across these
6 different specifications.

7 You know, you've inserted the word
8 "reliable." Did I come to a point of view that
9 I think bitcoin is the perfect factor? It's
10 certainly a factor that you'll find in the
11 literature, and it seems like a reasonable
12 factor to use.

13 Q. Well, if you made the judgment --
14 withdrawn.

15 Let me -- let's get the models out, I
16 think it will be easier.

17 So let's go back to page 19, Figure 7.

18 A. I have it.

19 Q. All right.

20 Model 2.

21 I'm sorry. Model 3 --

22 A. Uh-huh.

23 Q. -- the two independent variables you
24 used to predict estimated XRP price returns were
25 the constant and bitcoin. Correct?

1



2 A. Model 3 is constant, bitcoin, and XRP

3 account growth.

4 Q. All right. This is why I need better

5 glasses.

6 A. Oh, no, no. You're shaking your head,

7 you're right. The odd number ones do not have

8 account growth, I apologize. I was remembering

9 back before with the 2, 4, 6, 8.

10 You're correct, Model 3 --

11 Q. So --

12 A. -- Model 3 is just bitcoin and

13 constant. You're right.

14 Q. And Model 5 is constant, bitcoin, and

15 Ether. Correct?

16 A. Correct.

17 Q. And Model 7 is constant, bitcoin,

18 Ether, and lumens. Correct?

19 A. Correct.

20 Q. And each of those models, you

21 determined, were reliable for predicting the

22 expected return of XRP. Correct?

23 A. I thought each of those models was a

24 reasonable factor model for XRP return.

25 Q. And if you thought it wasn't

1 [REDACTED]
2 reasonable and reliable, you wouldn't have --
3 you wouldn't have relied on it, correct?

4 A. If -- certainly if I thought it was
5 unreasonable and unreliable, I wouldn't have
6 used it.

7 Q. Now, in Model 9, you add in what you
8 call an e-Index. Can you tell us what an
9 E Index is?

10 A. E is for equal, equal-weighted index.
11 So I -- I think the notes at the table, or -- or
12 footnote in -- in that section generally,
13 explains that the equal-weighted index is an
14 equal weighted -- is an equal-weighted average
15 return across bitcoin, Ether, lumens, Binance or
16 Binance coin, and then -- now I need to look at
17 it to remember the name of the fifth one.

18 Q. I'll help you. ADA?

19 A. Right.

20 Q. What is Binance coin?

21 A. Those -- those other two tokens are
22 currently -- or at least in and around the time
23 that -- that I was preparing the report, those
24 were some of the largest market cap digital
25 tokens.

1 [REDACTED]
2 At that time. I don't know if they
3 still are today.

4 Q. Are you aware of any academic
5 literature in which the Binance returns were
6 used as a variable in an XRP regression model?

7 A. I can't say that I can think of an
8 academic literature that specifically used that
9 factor.

10 Of course, Dr. Ferrell uses a variety
11 of digital tokens in -- in his analysis.

12 But no, I can't point -- I can't
13 remember an academic study that specifically
14 used that token as an explanatory variable.

15 Q. What, if anything, did you do to
16 satisfy yourself that using Binance returns
17 would be an appropriate or reliable comparator
18 for XRP returns?

19 A. Again, I -- I took some of -- I took
20 the returns of what were, at the time, the --
21 the largest by market cap digital tokens, and
22 what I wanted to do was satisfy myself that the
23 correlation results I was going to focus on
24 would not change or would not be sensitive to
25 adding these other major coins. That was --

1 [REDACTED]
2 that was the purpose of these different model
3 specifications.

4 Q. Did you consider using any other
5 digital assets in this model?

6 A. No. Those -- between those -- those
7 tokens, plus lumens, we spanned a -- I don't
8 remember the number but a very large share of
9 the digital token market by volume. So no, I
10 didn't -- I didn't think it was necessary to --
11 to continue to add tokens to the other side.

12 The other -- the other thing that
13 happens, just as a practical point, is, some of
14 these digital tokens don't necessarily have a
15 very long pricing history.

16 So, if -- when you're going to study
17 these events back further in time, you don't
18 necessarily have, you know, a wide library of
19 tokens that you could possibly choose from.

20 As time goes on, more tokens are
21 created, and I agree, you could continue to
22 expand that index, but I -- I didn't see the --
23 the need or benefit of doing that.

24 Q. And in the E Index, you weighted each
25 of these tokens equally, correct?

1



2 A. Correct. The alternative -- the
3 common alternative would be value weighted as we
4 discussed this morning. Once you value weight
5 them, you basically just end up with bitcoin
6 again. So I -- I already had a model with
7 bitcoin. A value-weighted index model struck me
8 as being largely redundant.

9 Q. Just so the record's clear, did you
10 say value weighted or volume weighted?

11 A. Value, usually in the sense of market
12 cap, so it's a combination of volume and price.

13 Q. And what do you mean by "market cap"?

14 A. I mean the combination of volume and
15 price.

16 Q. Well, by "market cap," do you mean all
17 of the outstanding units of that digital asset
18 multiplied times the market price?

19 A. Sometimes it's all that are
20 outstanding. Sometimes it's all that's been
21 traded over some window. Different people may
22 compute it slightly differently, but
23 conceptually, yes.

24 Q. And did you take -- did you
25 investigate what the -- we'll call it the market

1 [REDACTED]
2 cap, of ADA was?

3 A. I know -- I know that again when we
4 pulled the data, the instruction was to pull the
5 largest by market cap at the time we were
6 assembling the data set. I don't recall offhand
7 what the market cap of ADA was.

8 But I think -- I imagine I have a
9 footnote, in and around this table, where I cite
10 the source of my market cap data which indicated
11 it was a -- one of the larger coins at that
12 time.

13 Q. Now, you included in your model what
14 you called account growth?

15 A. Correct.

16 Q. Are you aware of any publications or
17 studies that support using the number of
18 accounts for digital asset as a predictor of
19 price impact?

20 A. I -- I cite to a literature that
21 explores network effects on digital token
22 prices, and -- and accounts was one proxy that
23 they used for network effects.

24 Q. That study also used four other
25 criteria, correct?

1

2 A. It did.

3 Q. Including the number of active

4 addresses, the number of transaction count and

5 the number of payment count?

6 A. I don't have the study in front of me,

7 but that sounds familiar.

8 Q. Does that sound generally correct? I

9 can show you the study if you like.

10 A. It sounds generally correct.

11 Q. And you elected not to use the other

12 three variables that were cited in that study.

13 Correct?

14 A. I -- correct. I elected to focus on

15 account growth.

16 Q. And why was that?

17 A. It was a -- if -- I think if we look

18 at the study, you'll see that it's a significant

19 factor in their models. The data were readily

20 available and seemed cleanly measured, and it

21 seemed like a useful factor to include.

22 I found that many of the models put a

23 statistically significant weight on that factor

24 at different points in time.

25 Q. The article you're referring to is

1 [REDACTED]
2 in -- published in the Review of Financial
3 Studies, "Risk and Returns of Cryptocurrency" by
4 Yukun Liu and Aleh Tsyvinski; is that correct?

5 A. I mean, I -- I think so. I'm happy to
6 look at my report and look at the footnote.
7 Maybe you have it in front of --

8 Q. Why don't -- why don't I just show you
9 what we'll mark as Exhibit 11.

10 (Article titled "Risks and Returns of
11 Cryptocurrency" was marked Exhibit 11 for
12 identification, as of this date.)

13 Q. Why don't you take a look at page 2699
14 of Exhibit 11.

15 A. Uh-huh.

16 Q. You see they say, We construct network
17 factors of cryptocurrency and test whether these
18 factors can account for variations of
19 cryptocurrency prices?

20 A. I see that, yes.

21 Q. And then it says, we then use -- We
22 use four measures to -- to proxy for the network
23 effect, the number of wallet users, the number
24 of active addresses, the number -- or
25 transaction count and the number of payment

1

2 count.

3 A. I see that.

4 Q. It says, Then we measure

5 cryptocurrency network growth using the wallet

6 user growth, active address growth, transaction

7 count growth and payment count growth.

8 Do you see that?

9 A. I see that.

10 Q. What are network factors?

11 A. Well, the phrase can mean different

12 things in different contexts. But here, I take

13 them to mean the idea -- the idea of -- of sort

14 of a network effect in value, meaning the value

15 of something depends in part on how many other

16 people are associated with it. That's generally

17 what a network effect is.

18 So as -- as it grows, as the network

19 of people involved grow, the value of the

20 network increases.

21 Q. So the study -- what was discussed in

22 this article was how to measure the growth of a

23 network. Correct?

24 A. I don't know if I would characterize

25 it that way. I would say what the study's

1 [REDACTED]
2 testing and showing is whether some proxies,
3 some variables, which you might say they proxy
4 for network growth, how those variables are
5 associated or correlated with digital token
6 returns to see whether -- you know, to test this
7 hypothesis, whether network factors help drive
8 prices.

9 Q. And this portion of the study, though,
10 is, as you say, using factors or proxies for
11 measuring network growth. Correct?

12 A. Correct.

13 Q. It doesn't say that those factors are
14 relevant to determining price impact on a
15 digital asset. Correct?

16 A. No. I think that's exactly what
17 they're saying.

18 Q. They're measuring network growth and
19 then measuring network growth as a predictor
20 for --

21 A. For price impacts.

22 Q. Right. So you've picked one factor
23 that they use to measure network growth and
24 skipped the step of figuring out whether there's
25 network growth and apply it directly to price

1



2 impact on a digital asset. Correct?

3 A. I don't see that I skipped a step.

4 They're testing a hypothesis of whether certain
5 proxies of network growth were associated with
6 price increases. They generally find that they
7 are.

8 So taking that result, and -- I
9 decided to have a version of -- one version of
10 all of my models, which adds a proxy for network
11 growth, again, just to make sure that my results
12 are robust to whether a proxy for network growth
13 is included or not.

14 Q. Well, you picked one of four factors
15 that was used as a proxy for network growth,
16 correct?

17 A. That's correct.

18 Q. And the data for the other factors was
19 available to you. Correct?

20 A. Correct.

21 Q. You --

22 A. I mean, I assume so because --

23 Q. You could identify the -- let's not
24 talk over each other.

25 You could have identified the number

1 [REDACTED]
2 of wallet users, correct?

3 A. Presumably. I --

4 Q. You could have identified number of
5 active addresses?

6 A. Well, that's what I have.

7 Q. And you could identify the number of
8 transaction count?

9 A. I -- I presumably could have gotten
10 some transaction count data.

11 Q. And you could have identified the
12 number of payment count. Correct?

13 A. I mean, not having attempted to obtain
14 all of those things, possibly they're all
15 obtainable. I took the -- I took the account
16 growth, which appears to be, you know, the most
17 significant factor that they have.

18 Q. All right. Are you aware of any
19 professional or academic work that has used the
20 prices of other digital assets as variables in a
21 regression model to identify XRP returns?

22 A. The event studies I've seen generally
23 do not have other digital token price factors.
24 They correspond to my Model 1, and they
25 correspond to my Model 11.

1 [REDACTED]
2 But the use of factor models,
3 generally, is established. And, of course, you
4 know, Dr. Ferrell does sort of the same thing.

5 I'm trying to remember if -- if I saw
6 an event study. The -- the reason I'm -- I'm
7 thinking about it is a lot of the event studies
8 include bitcoin as -- you know, they're looking
9 at the -- the response of bitcoin to certain
10 events. And so, obviously, you can't put
11 bitcoin returns on the other side of a bitcoin
12 model.

13 Q. I don't want to interrupt you. I
14 have -- the question is very specific.

15 A. Yeah.

16 Q. The question is whether you're aware
17 of any publications, academic literature, that
18 use the price other digital assets as a variable
19 in a regression model to predict XRP returns.

20 I'm looking specifically for
21 publications that focus on XRP returns.

22 A. Sitting here today, the event studies
23 related to XRP returns with which I am most
24 familiar only use the constant mean return model
25 that I used, my Model 1. And I believe

1

2 Gerritsen also does a correction for serial
3 correlation, which is my Model 11.

4 Q. But neither of those two studies
5 involve the use of other cryptocurrencies to
6 predict XRP prices. Correct?

7 Serial correlation is not a -- does
8 not depend on the returns of other
9 cryptocurrencies, correct?

10 A. Correct. Correct.

11 Q. So the answer to my question is, no,
12 you're not aware of any other academic or
13 professional studies that use the price of other
14 digital assets as variables in a regression
15 model to predict XRP price returns?

16 A. Sitting here today, I can't think of
17 one, no.

18 Q. Are you aware of any professional or
19 academic studies that have used the growth of
20 XRP accounts as a variable in a regression model
21 to predict XRP returns?

22 A. Well, now I just have to remind myself
23 whether -- whether XRP was one of the price
24 series used in the -- in the paper that we're
25 studying.

1 [REDACTED]
2 It -- they may have been -- they may
3 have based it on bitcoin prices.

4 A lot of the literature does focus on
5 bitcoin prices.

6 Just trying to -- I'm just trying to
7 remember.

8 My recollection is that this study is
9 looking at bitcoin prices and suggesting network
10 factors for bitcoin.

11 I just want to make sure that I'm
12 not -- I'm not misremembering. It's been a long
13 time since I looked at this.

14 (Witness reviewing document.)

15 A. Oh, no. That's -- no. Right. I'm
16 sorry. They're studying an index, constructed
17 index of cryptocurrency market returns,
18 value-weighted returns on all coins with
19 capitalizations of more than a million, da, da,
20 da, da, da.

21 I'm trying to see if they indicate
22 whether XRP was picked up as part of that. I
23 expect it would have been.

24 I'm just trying to -- I'm sorry. I'm
25 just trying to see where they list exactly which

1 [REDACTED]
2 digital tokens go into their index. They
3 describe it as being above a market cap of a
4 million, which I assume would have picked up
5 XRP. I'm just trying to see if I can -- if I
6 can just see a list of the tokens that they --
7 that they consider.

8 I don't think they -- I'm not
9 seeing -- and I apologize if I'm just missing
10 it. I'm not seeing an explicit list of which
11 tokens are in -- no. Wait. I'm sorry.

12 Table 1 -- okay. Table 1 compares the
13 properties, bitcoin, Ether, Ripple, and so on
14 and so forth. So I -- I have every reason to
15 think that Ripple is part of their index, of
16 digital token returns that they are comparing
17 against market factors.

18 Q. Well, it's one of several. My
19 question was, are you aware of any professional
20 or academic publications that use the growth in
21 XRP accounts in a variable, in a regression
22 model, looking specifically at XRP returns?

23 A. That very narrow question? No, I'm
24 not aware of one.

25 Q. Are you familiar with the concept of

1 [REDACTED]
2 error rate?

3 A. I -- I -- I think I am, yes.

4 Q. Did you do any work to determine
5 whether there was an error rate in any of the
6 data or the application of data to the event
7 study that you conducted in this case?

8 A. Well, of course, the -- the regression
9 results incorporate error -- not necessarily
10 error, but variance of the data and the variance
11 of the error term of a regression.

12 So that's -- that's naturally part of
13 it.

14 The generalized rank test that I
15 applied is a test of significance against a
16 measure of standard error. So that's
17 incorporated there.

18 And the exact sample hypergeometric
19 test, which is basically the Fisher test, is an
20 exact sample test.

21 So thinking through the various
22 sources of error, I believe they are all
23 properly accounted for in my analysis.

24 Q. Well, you assume that the error rate
25 based on the statistical analysis you did was

1

2 5 percent. Correct?

3 A. That's not an error rate.

4 So no. No. I think you're -- I think
5 you're misstating things. 5 percent is not an
6 assumed error rate.

7 Q. Well, the 5 percent means the -- the
8 correlation or the value assigned could be
9 5 percent higher or 5 percent lower. It's a
10 level of statistical significance, correct?

11 A. No. That's not what it means in this
12 context.

13 Q. Well, why don't you tell us what the
14 5 percent significance that you have -- has
15 asterisks. You have 5 percent, 1 percent.
16 Let's just talk about 5 percent.

17 What does that 5 percent reflect?

18 A. That means that the probability of
19 observing the outcome that we observe is --
20 would be 5 percent, assuming the null hypothesis
21 of the model.

22 So, for example, assuming Ripple Labs
23 and XRP markets are independent of each other,
24 the probability that you would draw 24
25 significant days out of a group of 105 is on the

1 [REDACTED]
2 order of 1 in a hundred thousand. So much less
3 than 5 percent.

4 That's what the 5 percent significance
5 test means.

6 And that is customarily, or at least a
7 very common standard in scientific research, to
8 say, if the probability of this outcome under
9 the model, under the null hypothesis of the
10 model, is less than 5 percent, then I can reject
11 the null hypothesis. That's what 5 percent
12 means in this -- in this context.

13 Q. What is the error rate in concluding
14 or determining that XRP had a statistically
15 significant price return when making that
16 determination based on the expected returns
17 predicted by other digital assets?

18 A. I'm going to try and understand your
19 question.

20 In the context of any one of
21 20 regression models, the context of any one
22 date that we're considering, we have a predicted
23 return and we have an actual return and we have
24 a difference.

25 We also have a measure of the

1 [REDACTED]
2 statistical -- the statistical difference --
3 distance of that difference. So, you can think
4 of it as how many standard deviations away from
5 expectations are you.

6 That statistical distance reflects
7 uncertainty and parameter estimates and a whole
8 host of things.

9 Okay. If that statistical distance is
10 such that the odds of observing -- the obs of --
11 the odds of observing a difference between
12 expected returns and actual returns is less than
13 5 percent, then we would -- then we would flag
14 that as a statistically significant abnormal
15 return.

16 Did that answer your question?

17 Q. I don't know. Let me try another one.

18 What that -- if I understood you
19 correctly, what it suggests is that not every
20 time you find a coincidence of a statistically
21 significant XRP price return and a Ripple event
22 do you have confidence of a correlation?

23 In other words, that could -- that
24 could happen by random chance, some percentage
25 of the time. Correct?

1



2 A. Well, I would not accept the way you
3 framed the question.

4 Of course, it is -- and I make this
5 clear in the report. There -- there is a one in
6 a hundred thousand chance, by random chance,
7 that we could draw 24 significant days out of a
8 set of 105.

9 It's not impossible, you know. By the
10 laws of physics, there is a one in about a
11 hundred thousand possibility of doing that by
12 random chance.

13 But the standard for statistical
14 significance and scientific research is, is
15 there a 1 in 20 chance that this outcome could
16 be due to random chance?

17 So that's why I say these results are
18 well within any reasonable standard of
19 significance that would be recognized in
20 academic research.

21 I would -- I would just refer you back
22 to the jar of marble example. As I say there,
23 it is possible to draw ten red marbles out of
24 the jar. It's not impossible, it's possible.
25 But you have to wait and do it millions and

1 [REDACTED]
2 millions and millions and millions of times
3 before you grabbed all ten red marbles. You'd
4 probably win the lottery a few times over. So
5 that's generally how statistics works.

6 Q. All right. And other than your
7 confidence in the statistical significance, as
8 you just described it, did you do anything to
9 determine whether there were any errors that was
10 in the data or in the application of the data to
11 the -- the model that you used?

12 MR. MOYE: Asked and answered.

13 A. Well, I mean, it -- of course, we have
14 procedures, among my team, to look for errors.
15 The implementation of the statistical models and
16 all of the analysis that you see was done by a
17 second independent person to make sure that
18 numbers tied out and there were no errors in
19 code or anywhere else.

20 And to the very best of my knowledge,
21 there are no errors anywhere in my work in this
22 matter.

23 Q. All right. Turn to Dr. Ferrell.

24 As I understand his report, he's
25 testing --

1



2 A. My rebuttal or -- or I --

3 Q. Right now I'm asking you about --

4 A. Okay.

5 Q. -- Dr. Ferrell's report. We'll get to
6 your rebuttal.

7 A. Sure.

8 Q. As I understand it, he's testing a
9 hypothesis, using the principal component
10 analysis, that the returns of other
11 cryptocurrencies explain, to a level of
12 statistical certainty, the entirety of the XRP
13 returns. Is that correct?14 A. I'm sorry, I don't -- I don't
15 understand that description of what he's doing.
16 That doesn't sound -- I -- I -- that's not how I
17 would describe anything that he's doing.18 Q. Why don't we -- do we have
19 Dr. Ferrell's report?20 (Expert Report of Dr. Allen Ferrell
21 was marked Exhibit 12 for identification,
22 as of this date.)23 Q. All right. Let me -- let me try in
24 Dr. Ferrell's own words. Take a look at
25 page 48, Footnote 178.

1



2 A. Sure. Page 48.

3 Footnote 178. Yes.

4 Q. And why don't you read the --

5 A. You just want me to read the footnote?

6 Q. Yeah, up to "et cetera," and then the
7 cite.

8 A. If the null hypothesis of the constant
9 term equals zero are rejected, which is not the
10 case in Exhibits 3-7, that would merely mean
11 that the factors used in the model were
12 insufficient to explain the average monthly XRP
13 price return and that there were potentially
14 additional factors that needed to be included.

15 A rejection of the null of the zero
16 constant term cannot be used to learn the nature
17 or identity of the additional factors that
18 should be added to the model and whether those
19 factors are related to the cryptocurrency
20 market, other asset markets, political
21 sentiment, changes to regulation, et cetera.

22 Q. Do you agree with Dr. Ferrell's
23 characterization of rejecting or accepting the
24 null hypothesis of the constant equaling zero?

25 A. I would not have characterized it this

1 [REDACTED]
2 way, to be perfectly honest with you.

3 I -- I just -- I just wouldn't --
4 would never have described it this way.

5 Q. Well, do you have an understanding of
6 what he's referring to when he's talking about
7 the constant term?

8 A. I -- I -- I understand -- I understand
9 what he's trying to say up to a point. And then
10 he says things that I don't quite understand
11 what --

12 Q. Let's just stick with my question.

13 A. Sure.

14 Q. Do you understand what the -- what the
15 phrase, "constant term," refers to as used in
16 Footnote 178?

17 A. I do.

18 Q. And what is your understanding?

19 A. It refers to the intercept or constant
20 in a factor regression model.

21 Q. And what does it mean to reject the
22 null hypothesis of the constant term equaling
23 zero?

24 A. So, when you estimate the model, you
25 will have an estimated value for that constant

1

2 term.

3 And, coincidence aside, the number

4 will not actually be zero. It will be

5 something.

6 I think in his case, if I remember

7 correctly, it's .058, if memory serves.

8 So that's the estimate of alpha, or
the constant term. 058.

10 Now, around that estimate, there is

11 some uncertainty. That range of uncertainty

12 might be narrow, it might be wide. In his case,

13 one standard deviation is .042, if memory

14 serves. Again, this is just period one of his

15 model.

16 So what does that mean?

17 That means that 95 percent of the

18 time, the actual alpha, so he -- so he's got an

19 estimate of alpha -- backing up a second.

20 He has an estimate of alpha. You have

21 to imagine that there is an actual true alpha

22 out there, somewhere. He's got an estimate of

23 it.

24 Under certain conditions, 95 percent

25 of the time, the true alpha lies within a range

1 [REDACTED]
2 around his estimate of alpha.

3 I just want to make it -- with me so
4 far?

5 Okay.

6 Q. It doesn't matter. Just answer the
7 question.

8 A. Okay. All right. So I just -- I want
9 to make sure I'm being understood.

10 So what he's saying is that that
11 range, centered at .058 plus or minus 1.96 times
12 .042, includes the number zero. So 058, it goes
13 below zero, and then, of course, it goes up to
14 14.

15 And so he would say, quite correctly,
16 that under customary standards, you could not
17 reject the hypothesis that -- that the true
18 alpha is the number zero.

19 Q. Okay. And fair to say, because I
20 can't put all of the --

21 A. I'm trying, I'm trying.

22 Q. -- econometric qualifications into my
23 question every time.

24 If I say alpha is zero, can we agree
25 that what I'm referring to is what you just

1 [REDACTED]
2 described, that the difference between the true
3 alpha and his estimated alpha is statistically
4 insignificant? Is that a fair summary?

5 A. You were so close right up to the end.
6 I -- I will agree we can -- we can use the
7 phrase, alpha is zero, to refer to cases where
8 we cannot reject the hypothesis that alpha is
9 zero. Is that satisfactory?

10 Q. As long as you understand and we
11 agree, the record's clear --

12 A. I understand.

13 Q. -- when we say alpha's zero.

14 A. It's clear to me. If it's
15 satisfactory to you, then that's fine.

16 Q. All right. And in substance, again at
17 a high level, what Dr. Ferrell is trying to test
18 is whether the alpha in his principal component
19 study is zero. Correct?

20 A. That's one of the things he's trying
21 to test, yes.

22 Q. And, in fact, he concluded, using his
23 principal component analysis, that the alpha was
24 zero. Is that right?

25 A. That is correct.

1

2 Q. All right.

3 MR. MOYE: Reid, when you have a

4 minute, could we take a break?

5 MR. FIGEL: Sure. Now is as good time

6 as any.

7 THE VIDEOGRAPHER: We're going off the

8 record at 5:11 p.m.

9 (Recess from 5:11 to 5:25.)

10 THE VIDEOGRAPHER: We're back on the

11 record at 5:25 p.m.

12 Q. All right. Dr. [REDACTED], in your rebuttal

13 report, you don't report or state that you did

14 any econometric analysis that indicates that the

15 correct alpha in Dr. Ferrell's principal

16 component content study is not zero, did you?

17 A. Well, that's -- that's -- there are a

18 lot of nuances to that question.

19 Q. Could you start with yes or no if you

20 can?

21 A. Well, I can't. I genuinely can't.

22 Because what I do show in my report is that a

23 parameter like alpha, in Dr. Ferrell's

24 specification, is -- is there's evidence and

25 reason to believe that it changes over time.

1 [REDACTED]
2 And so I show in -- in one section of
3 my report that if you allow alpha to change over
4 time, take everything else Dr. Ferrell is doing
5 as given, you can get nonzero estimates that
6 way.

7 I will say, yes, that if I simply
8 replicate what Dr. Ferrell did, I get
9 Dr. Ferrell's numbers.

10 But that's -- that's a sort of narrow
11 yes.

12 Q. Are you offering an opinion in this
13 case that the proper application of
14 Dr. Ferrell's principal component analysis
15 should have resulted in a nonzero alpha?

16 A. As I explain in my report, the
17 question is, frankly, not interesting. It could
18 be zero. It could be nonzero. It doesn't shed
19 any light on any helpful question that I can see
20 in this matter. They -- the presumption when
21 running a factor model is that alpha will be
22 zero. That is ordinarily what you would expect.

23 Finding a zero alpha is unremarkable.

24 Q. So is the answer to my question that
25 you will not be offering an opinion in this

1

2 litigation that a proper application of

3 Dr. Ferrell's principal component analysis would

4 have yielded a nonzero alpha?

5 A. I struggle to say yes to that, because

6 in my view, a proper application would allow for

7 parameters to change over time.

8 And when you do that, there is

9 evidence that alpha is not zero.

10 Q. Can you show us where in your

11 report -- that's Exhibit 2 -- you describe the

12 opinion you intend to offer, that whatever

13 adjustments you feel are appropriate to

14 Dr. Ferrell's principal component analysis,

15 would have resulted in a nonzero alpha?

16 A. It's -- so I would point you to

17 page 3, the second bullet, beginning, The

18 statistical analyses employed by Dr. Ferrell are

19 not robust in many respects.

20 Sub-bullet 2 to that, Dr. Ferrell does

21 not appear to have considered that certain

22 parameters of his model can and do change over

23 time.

24 That is further developed -- I believe

25 it's the very last section of my report --

1 [REDACTED]
2 Q. Before you go to that -- I don't mean
3 to interrupt. Just on these two points --

4 A. Yes.

5 Q. -- what I heard you say was a
6 criticism of Dr. Ferrell's study, not that you
7 are offering a contrary opinion that had he done
8 the study the way you believed it should have
9 been done, it would have resulted in a nonzero
10 alpha. Is that correct?

11 A. I -- I'm not sure that that's correct.
12 As I say here, in my opinion, a proper analysis
13 would have allowed parameters to change. And I
14 show in my report, I -- allowing alpha to change
15 can produce a nonzero alpha. So I --

16 Q. I understand that it's theoretically
17 possible. My question is, are you offering the
18 opinion that if he had done -- withdrawn. Let
19 me start over.

20 Are you offering the opinion in this
21 litigation that had Dr. Ferrell done the
22 analysis that would have, as you say, allowed
23 the parameters to change, that that would have
24 resulted in a nonzero alpha?

25 A. To that I have to say, yes, because it

1

2 does.

3 Q. Where do you set out the calculations
4 that show that with the adjustments you believe
5 are appropriate, the result is a nonzero alpha?

6 A. That is Exhibit -- Figure 17,
7 literally the last page before Appendix A.

8 It's precisely what I am doing in this
9 exhibit, is I'm showing that allowing alpha to
10 change over time, can produce estimates of alpha
11 that are significantly different from zero. And
12 it can produce estimates of a change in alpha,
13 that is significantly different from zero.


14 Q. Right. So let's go -- you have -- you
15 have -- Figure 17 in front of you?

16 A. I do.

17 Q. All right. As I understand Figure 17,
18 the second column is the alpha that Dr. Ferrell
19 calculated. Correct?

20 A. It's an alpha of the type that
D21 Ferrell calculated, yes.

22 Q. And then your middle column is your
23 data or your calculations or the results of your
24 calculations that showed, had he made the
25 adjustments that you contend were necessary,

1 
2 alpha would have changed in the amounts that you
3 set forth. Correct?

4 A. So to be clear, the particular
5 analysis that I'm running here, which is --
6 which is a demonstration of principle, is to
7 say, as an example of allowing a parameter to
8 change, imagine that alpha changed once
9 Ripple Labs received its BitLicense.

10 Now, I'm not saying it has to change.
11 It might change. I'm just allowing it to
12 change.

13 And so what Figure 17 is showing is,
14 if you -- if you make that allowance, you can
15 find, in several cases, that with that
16 allowance, alpha becomes significantly negative,
17 and that change in alpha post BitLicense is
18 significantly positive.

19 Q. Well, the -- let's just make sure
20 we're -- the record is clear here. The center
21 column under the heading, Post BitLicense Period
22 Change in Alpha, is the amount of the change in
23 alpha. Correct? It's not the resulting alpha.

24 A. That is correct.

25 Q. So the resulting alpha would have been

1 [REDACTED]
2 the -- let's just talk for September 4, 2015 --
3 would have been the negative .04 plus the .05,
4 correct?

5 A. Correct. The way to interpret -- the
6 way to interpret this --

7 Q. Just stay with me.

8 Correct, right?

9 A. Well --

10 Q. So had you added a column that said,
11 Alpha Post BitLicense Period, you would have put
12 in the number .01; is that correct?

13 A. Correct. Alpha -- alpha -- what --
14 the column called alpha, you could describe as
15 alpha pre BitLicense. Then there's a change.
16 You would add those two numbers to get alpha
17 post BitLicense.

18 Q. Correct. And just doing the
19 arithmetic, which I can do, you'd start with a
20 negative .04. And you add positive .05. That
21 results in positive .01. That's what the
22 post-BitLicense alpha would be. Correct?

23 A. In that case, yes, that is correct.

24 Q. And where in your report do you say
25 that the post-BitLicense alpha is nonzero?

1



2 A. Well, I -- that was not your question,
3 and that's not what I said. You asked me about
4 alpha. So everywhere here that you see a
5 significant negative, under the alpha column,
6 that would correspond to a significantly
7 negative pre-BitLicense alpha.

8 So to the question, Is alpha always
9 zero? The answer is no. It's not always zero.
10 Pre-BitLicense alpha is sometimes significantly
11 negative.

12 To that you can couple sometimes a
13 significantly positive increase once Ripple Labs
14 gets its BitLicense. The net result of those
15 two things, the post-BitLicense alpha, is
16 sometimes going to be numerically greater than
17 zero. I can't tell from looking at this whether
18 it is statistically greater than zero.

19 Q. So what you are saying is that the
20 alpha that you calculate after the BitLicense
21 was awarded should be used to change the alpha
22 before the BitLicense was awarded?

23 A. I'm saying that alpha -- what does
24 alpha represent? Alpha represents an average
25 excess return in XRP prices after controlling

1 [REDACTED]
2 for all the factors that you're controlling for.

3 That's what alpha represents.

4 Pre BitLicense, that average is
5 sometimes significantly negative.

6 Then with the BitLicense, there is a
7 change, which is sometimes significantly
8 positive. And post BitLicense, that average is
9 the combination of the two. The post license --
10 post-BitLicense average may or may not be
11 statistically different from zero. I can't tell
12 by looking at this table. I don't know the
13 answer to that.

14 But the table is already enough to
15 establish that the pre-BitLicense alpha is
16 statistically different from zero. So to the
17 question, Is alpha always zero? I would have to
18 say that the answer is no.

19 Q. Why does the change you calculate in
20 alpha following the BitLicense affect the alpha
21 prior to that time?

22 A. It doesn't.

23 So you had -- it was earning -- there
24 was -- there was an alpha for the several months
25 before it got its BitLicense, which was in some

1 [REDACTED]
2 cases significantly negative. And then there's
3 an alpha in the several months after it gets its
4 BitLicense, which is sometimes significantly
5 much more positive.

6 So you go from here to here.
7 That's -- that's what this is saying.

8 Q. Well, let's just start: Do you
9 contest Dr. Ferrell's calculation of alpha in
10 your Figure 17 in the second column?

11 A. All of Figure 17 is a criticism of
12 Dr. Ferrell's approach to dealing with alpha.
13 Dr. Ferrell's approach is to assume that alpha
14 remains unchanged for five years or seven years.

15 And my examination of cryptocurrency
16 data leads me to think that none of these
17 parameters is going to be stable for five years
18 or seven years.

19 And I'm simply demonstrating here that
20 if we had simply allowed, just allowed the
21 possibility for alpha to be different before and
22 after Ripple gets its BitLicense, you would find
23 significant evidence that alpha is different
24 before and after it gets its BitLicense. That's
25 what Table 17 reflects.

1



2 Q. Did you do any calculations or studies
3 that allows you to demonstrate that alpha should
4 have been different before Ripple got its
5 BitLicense?

6 A. Yes. And I would point you to
7 Figure 17.

8 Q. And what Figure 17 shows, as I
9 understand it -- and correct me if I'm wrong --
10 is the amount of change in alpha that you
11 observe following the award of the BitLicense.
12 Correct?

13 A. Correct.

14 Q. So -- and the BitLicense is a factor,
15 correct, or an event?

16 A. It's an event, yes.

17 Q. Yes. That has an impact. Correct?

18 A. I think so.

19 Q. And according to you, it results in a
20 change in alpha, correct?

21 A. Correct.

22 Q. So what about that makes the alpha
23 that Dr. Ferrell calculated for the period
24 before the award of the BitLicense nonzero?

25 Or inaccurate. Let's not even get to

1 [REDACTED]
2 nonzero; the -- the values that he created are
3 inaccurate.

4 A. The val-- Dr. Ferrell is producing an
5 estimate of alpha under the assumption that
6 there -- that it is constant, that it does not
7 change.

8 Now, that assumption might be true.
9 That assumption might be false. It's a testable
10 assumption. We can get the data, and we can go
11 look.

12 And that's what I do in Figure 17.
13 And what I show is that that assumption is
14 false. It's not a good assumption to make.

15 So if you estimate a model, saying,
16 I'm going to find a parameter estimate assuming
17 it's constant for seven years, or five years,
18 whatever the length of time is here, and your
19 assumption is false, you have a misspecified
20 model at the outset. And that's what I'm
21 demonstrating.

22 Q. So let me make sure I follow you. As
23 I understand it, based on the work that you did,
24 you think there are two different alphas, there
25 are two periods, right? There's a pre

1

2 BitLicense alpha and a post BitLicense alpha; am

3 I correct?

4 A. I'm showing that if you allow for that

5 possibility, you'll find evidence that it's

6 true.

7 Q. All right. Did you do an analysis as

8 to whether the two alphas considered jointly

9 were statistically significant in rejecting

10 nonzero?

11 A. I've shown that the pre BitLicense

12 alpha is significantly different from zero, and

13 I've shown that the change to the pre BitLicense

14 alpha is statistically different from zero.

15 Q. By "statistically different from

16 zero," you're rejecting the hypothesis that

17 alpha is zero. Is that correct?

18 A. That is correct.

19 MR. MOYE: Excuse me. Mark's going

20 sub in for me. I'm going to head out.


21 MR. FIGEL: Just for the record,

22 Mr. Moyer has a plane to catch. We view

23 these as a -- a justification to depart

24 from the rule that each party can only have

25 one lawyer representing a party at a

1 
2 deposition.

3 And so, Mr. Sylvester will pitch in,
4 but we don't view this as a basis to argue
5 that there can be a swap in any other
6 circumstance.

7 MR. MOYE: Thanks very much.

8 Q. Did you ever do a test to determine
9 whether these alphas, the two that you have
10 here, are jointly significant?

11 A. Strictly speaking, no. I haven't
12 conducted a test of whether they are jointly
13 significant.

14 Q. And why not?

15 A. My point here was simply to show that
16 they can change over time. And that if you
17 allow them to change over time, you'll find
18 significant evidence that they do change over
19 time.

20 My expectation is that a joint test on
21 some of these days would reject the hypothesis
22 that they're both zero. I'd be surprised if it
23 didn't, but for the record, I haven't done it
24 and I don't know for sure.

25 Q. So you're not offering an opinion that

1 [REDACTED]
2 the -- the two alphas considered jointly are
3 nonzero, correct?

4 A. Based on this analysis, I -- I
5 wouldn't be prepared to say that. I would
6 certainly say that there is substantial evidence
7 that alpha changes, and any model that doesn't
8 allow for that possibility is misspecified.

9 Q. Let me direct your attention now to
10 Footnote 174 of Dr. Ferrell's report.

11 A. What page is that, please?

12 Q. 46.

13 A. Okay.

14 Q. All right. He writes, The R-squared
15 measures the percentage of the various -- of the
16 variation in the dependent variable, (e.g., XRP
17 price return) that the regression model
18 explains.

19 Do you agree with that statement?

20 A. I do, yes.

21 Q. Do you agree that a decrease in
22 R-squared itself does not disprove Dr. Ferrell's
23 conclusion that alpha -- that under a principal
24 component analysis, alpha is statistically
25 insignificant?

1

2 A. The -- the two points are unrelated.

3 Q. So a decrease in R-square values

4 doesn't disprove a conclusion that alpha is

5 statistically insignificant? Correct?

6 A. It doesn't -- it doesn't -- correct,

7 it doesn't speak to the question of whether

8 alpha is statistically different from zero.

9 Q. And I direct your attention to page --

10 paragraph 25 on page 10 of your rebuttal report.

11 A. Yes.

12 Q. All right. You claim that Professor

13 Ferrell's principal component analysis is,

14 quote, concentrated on three months with extreme

15 returns, while the model explains relatively

16 little of the variation on XRP's prices outside

17 of those three months.

18 A. Correct.

19 Q. If you could turn the page to Figure 3

20 on page 11. You with me?

21 A. I am.

22 Q. And the three events that you contend

23 should have been excluded are identified in

24 Figure 3, correct?

25 A. I'm not saying they should have been

1 [REDACTED]
2 excluded. I'm -- I'm pointing out three outlier
3 returns among his 70 return observations.

4 Q. So you agree that it was appropriate
5 for Dr. Ferrell to include these three returns
6 in his principal component analysis. Correct?

7 A. I didn't say that either. I'm
8 pointing out that in the set of 70 months, there
9 are three returns that are unusually large
10 compared to the other 70. That's what I'm
11 showing here.

12 Now, the question becomes, So what.
13 And I proceed to investigate the implications
14 and consequences of that.

15 It's possible that it doesn't matter.
16 It turns out in this case, that these
17 three returns are driving a lot of his results.

18 Q. Just before we get to -- move on from
19 this, why did you not raise the same set of
20 concerns with respect to the price return on the
21 far right of the horizontal axis?

22 A. I -- I simply went -- I simply went
23 from the first to the second to the third.
24 That -- that next one is surely the fourth. And
25 with three months, one can account for

1 [REDACTED]
2 94 percent of the variation in the set of 70.

3 With another four months, you know,
4 that would rise to something else. But I -- I
5 stopped where I -- where I needed to stop, which
6 is how many months account for 94 percent of the
7 variation in his data.

8 Q. Let's turn the page and go to
9 Figure 4?

10 A. Yes.

11 Q. This effectively is an effort to
12 replicate Professor Ferrell's analysis with
13 omitting those three days; is that correct?

14 A. No, no, that's not what this is at
15 all.

16 Q. Well, why don't you tell us what you
17 purport to do in Figure 4.

18 A. So Figure 4 is simply taking the
19 70 observations that Dr. Ferrell -- so let's
20 back up.

21 Dr. Ferrell has 70 observations, he
22 has a number of factors, he runs a regression,
23 he reports a very high R-squared.

24 I'm taking the same 70 observations,
25 and I'm simply putting a fixed effect on three

1 [REDACTED]
2 of those months. I don't have any of his other
3 factors. I just say, Let's put a fixed effect
4 for this month, this month, and the other month.
5 And that alone accounts for 94 percent of the
6 variation.

7 The purpose of this table is simply to
8 demonstrate an empirical fact, that three months
9 out of 70 accounts for 94 percent of the
10 variation in the entire set of 70.

11 This right now is just a --
12 demonstrating a fact.

13 Q. What do you mean by "fixed effect"?

14 A. They're also -- they -- they're
15 sometimes called dummy variables. Back when I
16 was a student, they were dummy variables, and at
17 some point that fell out of favor because it --
18 maybe it sounds dumb. And so people started to
19 say fixed effects instead. But it's just a --
20 it's just a flag to pick up this -- this
21 observation.

22 Q. How is that different than omitting it
23 from the study?

24 A. Well, you're almost right, with
25 respect.

1 [REDACTED]
2 And I'm not suggesting that he do
3 this, but you would be correct that in the
4 context of his model, if he wanted to, he could
5 have put dummies for each of these three months,
6 and that would be effectively the same thing --
7 in terms of the other parameters of his model,
8 that would effectively be the same thing as
9 removing three observations from the model.

10 But that's not what I'm doing here,
11 and that's not the point that -- that I'm making
12 in this section of my report.

13 Q. So if I understand your testimony,
14 it's just observational; is that right? You're
15 just explaining how much of the variation can be
16 traced to those three --

17 A. To those three months. At this point
18 in this section, that's all I'm doing.
19 Three months account for 94 percent of the
20 variation.

21 This is not yet -- if you stopped
22 here, this is not yet a criticism of anything
23 that Dr. Ferrell has done. Simply documenting
24 an empirical fact.

25 Q. And you're not challenging or

1 [REDACTED]
2 contesting the accuracy of the price returns
3 that he calculated on those three instances.

4 A. That is correct. I'm not -- I'm not
5 arguing that those returns were not real and did
6 not actually happen in XRP prices.

7 Q. All right. If you could turn the page
8 and go to -- give me just a second.

9 Let's go to Figure 5. Can you tell us
10 what Figure 5 represents.

11 A. So, out of these 70 months in his
12 factor model, Dr. Ferrell reports an R-squared
13 of about 93 percent, plus or minus. That's Fact
14 Number 1.

15 Fact Number 2, I show just three of
16 those 70 months accounts for 94 percent of the
17 variation. That's Fact Number 2.

18 Now, the question becomes, is
19 Dr. Ferrell getting a high R-squared only
20 because his model explains those three months
21 and doesn't explain the other 67?

22 That's possible.

23 Or is Dr. Ferrell getting his
24 R-squared because his model does a really good
25 job of explaining all 70 months including the

1



2 three outliers? That's also possible.

3 I -- I don't know yet.

4 So that is what I'm going to test.

5 And so in this figure, what I've done

6 is I've replicated Dr. Ferrell's model, I've

7 taken his predictions for 67 of the 70 months.

8 And I'm asking the question: How powerful is

9 his model outside of the three months that we've

10 been talking about? That's the question.

11 And, of course, I don't know the

12 answer before I -- before I do the analysis. It

13 might be very powerful. Or it might not be

14 powerful. What I find is, it's not powerful.

15 In fact, outside of those three

16 months, Dr. Ferrell's model is actually worse

17 than no model. He would be better off with no

18 model.

19 So that's -- that's the point that I

20 want to make, is the high R-squared he reports

21 is not because he's done a very good job of

22 explaining every point in his data set. It's

23 because he's done a good job of explaining three

24 points in his data set and really is not

25 explaining anything that happens the other

1 [REDACTED]
2 67 months.

3 Q. So when you testified with respect to
4 Figure 5, you've taken his predictions for 67 of
5 the 70 months and asking the question: How
6 powerful is his model? In Figure 5, you are
7 excluding the three outlier dates. Correct?

8 A. Correct. I'm taking his model
9 estimated on all 70, and I'm simply taking the
10 predictions of that model for the other 67
11 months besides the three that we're talking
12 about.

13 Q. And what is the -- what is the basis
14 in the academic literature that causes you to
15 believe that it's appropriate to remove three
16 days of data out of 70 that you don't contest is
17 a mismeasurement and exclude it from your model?

18 A. Well, there's -- first of all, that's
19 not what I'm doing.

20 But to answer your question, there's
21 an entire literature of how to handle outlier
22 data points and regression models.

23 The data may be correct. Being an
24 outlier doesn't necessarily mean the data are
25 false. It simply means that they have -- they

1 [REDACTED]
2 are overly influential in your parameter
3 estimates.

4 So, for example, you have 70 points,
5 and they're all kind of bouncing around a little
6 bit like this. And then you've got one point,
7 which is just way out of scale for the others.
8 That might be the data. Nothing wrong with the
9 data.

10 If you fit a model to that series of
11 data, what can happen is that your model, which
12 is just trying to solve a problem that you've
13 given it, your model will say, Well, okay, if
14 you want me to solve this problem, what I'm
15 going to do is I'm going to figure out how I can
16 match this one point that's way outside of
17 everything else, and I'm going to not do a very
18 good job on these other points. That might be
19 okay, or that might not be okay. But that's
20 what can happen with outlier or influential
21 points.

22 That appears to be what happened here.

23 Now, if in response to this,
24 Dr. Ferrell decided that he wanted to do
25 something in the sense of he wants to have

1 [REDACTED]
2 better -- a better, more robust, more reliable
3 model by taking account of those outliers,
4 there's plenty of literature that discusses
5 appropriate ways to do that.

6 Q. I'm going to quote from you -- from
7 the Litigation Services Handbook again. This is
8 Section 9.4.

9 It says, Practitioner should not
10 eliminate outlier data points without first
11 investigating them. The removal of data points
12 can prove dangerous. Although eliminating
13 outliers will typically improve a regression's
14 fit, it can also destroy some of the model's
15 most important information. One should
16 investigate whether substantive information
17 exists regarding these points and whether the
18 analysis should exclude them. Do they involve
19 possible measurement errors? If not, then the
20 analyst should consider including them.

21 We agree that you're not contending
22 that the three points are measurement errors,
23 correct?

24 A. Correct. I'm not -- I'm not saying
25 that.

1

2 Q. What did you do to investigate the
3 circumstances of those three data points?

4 A. That's what this section is.

5 Q. I'm not talking about the --

6 A. This set --

7 Q. Not talking about the effect on the
8 R-squared. I'm talking about what happened in
9 the real world as to why there were those --
10 call them outlier results.

11 A. Well, one I point to, I mean, I -- I
12 didn't -- again, I have no reason to doubt the
13 data. I didn't concern myself with that
14 question.

15 I identify single largest outlier
16 here, happens to land -- or maybe not happens,
17 but lands on the day that Ripple Labs announces
18 its intention to escrow tokens. That might be
19 what's causing the outlier.

20 But that was -- I -- but I didn't
21 concern myself with trying to understand
22 everything that was happening on -- on these
23 three dates.

24 What the handbook is saying, I
25 completely agree with, which is if you've got

1 [REDACTED]
2 outliers, you need to do some work. That's
3 really what the handbook is saying. If you've
4 got outliers, you need to do some work to see
5 whether you want to keep them or deal with them,
6 and that's what I'm doing here.

7 Q. And the only work that you did was to
8 associate the largest, call it outlier, with the
9 announcement of escrow --

10 A. No, no. That's not --

11 Q. Let me finish my question.

12 A. Please.

13 Q. -- and you did nothing to investigate
14 the circumstances or the context of the other
15 two outliers. Correct?

16 A. No. No. That's -- that's --

17 Q. When you said --

18 A. -- incorrect.

19 Q. -- you didn't know what happened on
20 the other two dates.

21 A. The work -- the work of the type the
22 handbook is discussing and the type that I'm
23 discussing is to investigate whether those
24 outlier points are having undue influence in
25 your model. That's the work.

1 [REDACTED]
2 And that's the kind of -- this is the
3 kind of work that I'm doing here. This is the
4 type of investigation that an -- that an analyst
5 might do to determine if these three outlier
6 points are biasing the model.

7 Q. Well, if the data is accurate, what
8 basis is there to exclude it as having an impact
9 on the model that purports to describe what's
10 actually happening in the real world?

11 A. Well, the handbook lays out some of
12 these reasons, and I've explained some of those
13 reasons. An outlier point, accurate though it
14 may be, may be biasing your model, right?

15 Your model may adjust its parameters
16 in such a way that it will get that one point
17 right, but get a lot of other points wrong. And
18 in some circumstances, you might say that's
19 fine. And in other circumstances, you might say
20 that's not fine.

21 Because I don't want a model that
22 doesn't work most of the time. And that's what
23 we have here.

24 Dr. Ferrell's model does not work,
25 67 out of 70 months.

1 [REDACTED]
2 So if -- if -- I would -- if it were
3 me, I would deal with these outliers, because
4 I -- I don't want to have a model that does not
5 work 67 out of 70 months.

6 Q. So when the handbook says one should
7 investigate whether substantive information
8 exists regarding these points and whether the
9 analysis should exclude them, you don't think
10 that requires an investigation into the factual
11 circumstances that led to the data?

12 A. No, I don't believe that that -- that
13 is necessarily -- or at least I certainly didn't
14 read that to be some kind of investigation into
15 the circumstances that created the data.

16 I interpret that to mean, you should
17 see if those points have information that is
18 consistent with your model with respect to the
19 rest of the points. That's what outlier
20 analysis is. That's what I've done here.

21 No -- no researcher would -- worth his
22 salt -- his or her salt would say, Just because
23 the data are accurate, I therefore cannot deal
24 with them as outliers in a model.

25 That -- that's -- not a proper

1 [REDACTED]
2 position to take.

3 Q. So just so the record's clear, you did
4 no factual investigation of the circumstances
5 that led to what you call the outlier price
6 points. Correct?

7 A. I had no reason to doubt that the
8 pricing data were accurate.

9 Q. But you don't know what the
10 circumstances were that were associated with the
11 outlier data. Correct?

12 A. Again, I -- one of them, I happened to
13 recognize the date. But what the circumstances
14 are that are causing those prices is not the
15 point of this analysis.

16 The point of this analysis is, do
17 these three data points, correct though they may
18 be, are they biasing the model and rendering it
19 worthless in 67 out of 70 months?

20 And the answer is yes.

21 Q. All right. And in Figure 5, you come
22 up with an unadjusted R-square of .328.

23 And you state that -- well,
24 Professor Ferrell's model explains 93.5 percent
25 of the variation in -- of all 70 months, at

1 [REDACTED]
2 best, it only explains 32.8 percent of the
3 variation of 67 of those 70 months.

4 A. That is what I wrote, yes.

5 Q. Right. And if you could read
6 paragraph 30, the first sentence, please.

7 A. From Figure 5, we see that
8 Dr. Ferrell's model is statistically unbiased.
9 Alpha is numerically close to zero, and one
10 cannot reject the hypothesis that it is zero at
11 any reasonable significance level.

12 Q. And that is true with respect to the
13 information you calculated in Figure 5, correct?

14 A. That is the sentence describing what's
15 in Figure 5, yes.

16 I should point out, just so there's no
17 confusion, this alpha is different from
18 Dr. Ferrell's alpha. But the sentence is true.

19 Q. Excuse me a second.

20 All right. If you could go to
21 paragraph 39. And page 19.

22 A. Yes.

23 Q. You with me?

24 A. Yes, I am.

25 Q. These are other outlier data.

1



2 Correct?

3 A. Correct.

4 Q. But this is for a particular digital

5 asset, THC?

6 A. Correct.

7 Q. And you identify three days in which

8 the THC prices appear to be incorrect.

9 A. That is correct.

10 Q. Right. And those are days where the

11 price per unit, I guess, is 11- or \$12 million?

12 A. Correct.

13 Q. Now, Professor Ferrell calculated his

14 returns by looking to prices on a start date and

15 an end date. Correct?

16 A. That is correct.

17 Q. And didn't look at price information

18 in between.

19 A. That is correct.

20 Q. All right. And in order to calculate

21 the return, between August and September,

22 Professor Ferrell compared the prices of

23 August 8 and September 5. Correct?

24 A. I -- I don't have the sequence of

25 dates memorized, but he would have had a start

1 [REDACTED]
2 date and a date 28 days later, and he would have
3 compared those two prices.

4 Q. And so the price spikes that you
5 identify in Figure 10, if they didn't occur on a
6 date where he was getting price data, they
7 wouldn't affect his results, correct?

8 A. Correct. Which is why I -- I'm
9 speculating that he didn't notice the problem in
10 the data.

11 Q. And does the -- do these price spikes
12 affect the calculations based on the data that
13 he used?

14 A. It speaks to the robustness of his
15 approach.

16 So if he's going to start on the
17 particular day that he starts, he will not land
18 on these particular prices, and they will not
19 impact his results.

20 But the choice of start date is fairly
21 arbitrary, and had he chosen another date, which
22 would have just as valid from a principal point
23 of view, he would have landed on these days, and
24 that's when he would have discovered this
25 problem.

1 [REDACTED]
2 That's, for instance, one of the ways
3 that came to my attention.

4 Q. But are you offering an opinion that
5 Dr. Ferrell's conclusions are unreliable because
6 the reported price of THC spiked on the
7 three days that you set forth in your report?

8 A. I'm very careful to say that these
9 price spikes do not impact the calculations that
10 Dr. Ferrell uses.

11 Of course, I think his conclusions are
12 unreliable for a host of reasons.

13 But his calculations, because of the
14 particular start date that he picked and the
15 particular sequence of dates that follows
16 therefrom, do not land on these dates. It does
17 raise questions, in my mind, about the integrity
18 of his data source.

19 But to your question, that's correct.
20 These particular prices, though I think they're
21 clearly wrong, are not altering his
22 calculations.

23 Q. All right. You identified another
24 outlier month, one return date in which the
25 price return for THC equaled 8,916 percent.

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2 That was in January of 2016.

3 Do you see that?

4 A. Yes, I do.

5 Q. He used 6,370 return dates in his

6 primary component analysis. Correct?

7 A. I -- I'm sorry, he used what?

8 Q. A total of 6,370 return dates in

9 his --

10 A. I haven't done that arithmetic. I --

11 I don't know.

12 Q. And he didn't include THC in

13 estimated -- Estimation Period 1, did he?

14 A. It is not part of Estimation Period 1,

15 that's correct.

16 Q. And it was only one out of 11

17 principal components in Estimation Period 2,

18 correct?

19 A. It dominates the second principal

20 component in Estimation Period 2.

21 Q. And what analysis did you perform to

22 determine that this one month in one currency

23 dominated his -- sorry.

24 Dominated his results, I think is what

25 you said.

1

2 A. I said dominated his second principal
3 component.

4 Q. So what is your basis for your
5 testimony that a single-event day dominated his
6 second principal component?


7 A. Well, I said that the coin dominated
8 his -- the second principal component. And I --
9 I would refer you to Figure 13 of my report.

10 Q. Let's go to Figure 14.
11 What does Figure 14 purport to do?

12 A. Showing how things would have been
13 different had Dr. Ferrell noticed the flaw in
14 his methodology. The flaw in his methodology,
15 which doesn't apply just to THC but it's a
16 general flaw in his entire approach, is splicing
17 two pricing data series together in the way that
18 he does.

19 This is just an example of the
20 problems that that creates. It's a particularly
21 stark example, but it's just one example.

22 By doing that, he creates a variation
23 or a variance in his principal components, which
24 is not real. It's not part -- it's not real in
25 the data. It's created by this -- this -- this

1 
2 poor methodology.

3 And so what I'm just showing here is,
4 if -- if we draw -- if we didn't have the THC
5 dominating the second principal component, I'm
6 just showing how the second principal component
7 that emerges is much more correlated with XRP
8 than what Dr. Ferrell's second principal
9 component is.

10 Q. Does your Figure 14 show a
11 statistically significant alpha on your
12 recalculated numbers?

13 A. No. In -- in Figure 14, with just
14 two principal components, whether Dr. Ferrell's
15 or whether a corrected second principal
16 component, alpha is not statistically different
17 from zero in either case.

18 Q. So it wouldn't change his results.
19 Correct?

20 A. No, no, I don't know that.

21 Again, the general method, the general
22 problem here, is you have pricing data from one
23 source and you have pricing data from another
24 source, and you just slap one on top of the
25 other. That's the problem. This is -- this is

1

2 an example of that problem.

3 Now, he does that for virtually and

4 maybe literally every single coin in his data

5 set. And you can't do that. That's --

6 that's -- that's a bad methodology. That is the

7 wrong way to combine data sets.

8 The right way to combine data sets is

9 in return space. Dr. Ferrell didn't do that.

10 He just took one price and superimposed another

11 price on top of it.

12 That creates problems. This is just

13 an example of a problem that that methodology

14 creates.

15 Had he -- had he done it correctly,

16 had he corrected it -- I didn't investigate it,

17 I don't know if that would have created a

18 statistically significant difference, I

19 don't particularly care. I don't know whether

20 it would or not, but I'm simply pointing out

21 that his methodology is fundamentally flawed.

22 Q. Without quibbling with your testimony

23 about his methodology, you didn't do the

24 calculations to determine whether having used

25 the methodology that you would have preferred

1 [REDACTED]
2 would have resulted in a different result, with
3 respect to rejecting the nonzero conclusion for
4 alpha. Isn't that correct?

5 A. I did not undertake that analysis, no.

6 Q. You could have, correct?

7 A. I could have, yes.

8 Q. And you didn't.

9 A. I didn't. I...

10 Q. All right. Let's go to paragraph 48.
11 If you would.

12 You calculated a change in R-squared
13 and Principal Component 1, assuming estimation
14 period began on September 10 instead of
15 September 3, correct?

16 A. Correct.

17 Q. And in your report, you observe that
18 R-squared would vary based on the start date
19 that Dr. Ferrell selected. Correct?

20 A. Correct.

21 Q. And you demonstrated that you can come
22 up with differing R-squared calculations,
23 correct?

24 A. Yes.

25 Q. You don't recalculate any alphas

1 [REDACTED]
2 associated with a change in start date, do you?

3 A. No, not here, no.

4 Q. And so you're not offering an opinion
5 as to whether the alphas that Dr. Ferrell
6 determined in his principal component analysis
7 would have been different, in other words, if it
8 would have been able to -- if he would have been
9 able to reject the nonzero conclusion, had he
10 used different start dates. Correct?

11 A. I'm not investigating that particular
12 question in this section, that is correct.

13 I just want to demonstrate that
14 different start dates can move things around
15 quite a lot, and that's not a desirable property
16 of this kind of framework.

17 MR. FIGEL: How much time do we have
18 left?

19 THE VIDEOGRAPHER: About two minutes.

20 MR. FIGEL: All right. I'll -- I'll
21 spare you the last two minutes, even though
22 we can go for several more hours. Let --
23 let's just make sure nobody on the phone
24 wants to say anything.

25 Any -- any questions for Dr. [REDACTED] from

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██████████
Cleary or Paul Weiss?

Okay. I texted him. Hearing none --

All right. Dr. ██████████, thank you for
your time. No further questions.

THE WITNESS: Thank you.

MR. SYLVESTER: Thanks.

THE VIDEOGRAPHER: This marks the end
of the deposition. We're going off the
record at 6:16 p.m.

(Time noted: 6:16 p.m.)

████████████████████, Ph.D.
Subscribed and sworn to before me
this day of 2022.

1
2 CERTIFICATE3
4 STATE OF NEW YORK)
) Ss.:
5 COUNTY OF NEW YORK)6 I JEFFREY BENZ, a Certified Realtime
7 Reporter, Registered Merit Reporter and
8 Notary Public within and for the State of
9 New York, do hereby certify:10 That [REDACTED], Ph.D., the witness
11 whose examination is hereinbefore set
12 forth, was duly sworn by me and that this
13 transcript of such examination is a true
14 record of the testimony given by such
15 witness.16 I further certify that I am not
17 related to any of the parties to this
18 action by blood or marriage; and that I am
19 in no way interested in the outcome of this
20 matter.21 IN WITNESS WHEREOF, I have hereunto
22 set my hand this 22nd of February, 2022.23
24 JEFFREY BENZ, CRR, RMR
25

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1 NAME OF CASE:

2 DATE OF DEPOSITION:

3 NAME OF WITNESS:

4 Reason Codes:

5 1. To clarify the record.

6 2. To conform to the facts.

7 3. To correct transcription errors.

8 Page _____ Line _____ Reason _____

9 From _____ to _____

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11 From _____ to _____

12 Page _____ Line _____ Reason _____

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