

Exhibit 31

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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

SECURITIES AND EXCHANGE)
COMMISSION,)

Plaintiff,)

vs.)

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

Defendants.)

) Case No.
) 20 Civ. 10832 (AT) (SN)

VIDEOCONFERENCE VIDEO-RECORDED DEPOSITION OF
YESHA YADAV
New York, New York
Friday, February 11, 2022

Reported Stenographically By:
PATRICIA A. BIDONDE
Registered Professional Reporter
Realtime Certified Reporter
JOB No. 220211PBI

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February 11, 2022

9:21 a.m.

Videoconference Video-Recorded
Deposition of YESHA YADAV, held at the
offices of Debevoise & Plimpton, 919
Third Avenue, New York, New York, before
Patricia A. Bidonde, Stenographer,
Registered Professional Reporter,
Realtime Certified Reporter, Certified
eDepoze Court Reporter, Notary Public of
the States of New York, New Jersey, and
Connecticut.

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24 Videoconference

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IT IS HEREBY STIPULATED AND
AGREED, by and between the attorneys for
the respective parties, that all
objections, except as to the form of the
questions, shall be reserved to the time
of the trial.

IT IS FURTHER STIPULATED AND
AGREED that the filing of the original
transcript of the examination is waived.

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I N D E X

EXAMINATIONS	PAGE	LINE
BY MS. STEWART	10	6
BY MR. SYLVESTER	84	12

E X H I B I T S

NO.	DESCRIPTION	PAGE	LINE
Exhibit YY-1	Expert report of Professor Yesha Yadav.....	15	24
Exhibit YY-10	"Fintech and the Innovation Trilemma" by Yesha Yadav and Chris Bummer.....	35	4

*** EXHIBITS BOUND SEPARATELY ***

DIRECTIONS:	18	23
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P R O C E E D I N G S

- - -

THE VIDEOGRAPHER: We are now on the record. The time is 9:21 a.m. on February 11, 2022. Audio and video recording will continue to take place until all parties agree to go off the record. Please note that microphones are sensitive and may pick up whispering and private conversations.

This is the video-recorded deposition of Yesha Yadav in the matter of Securities and Exchange Commission versus Ripple Labs, Inc., Bradley Garlinghouse, and Christian Larsen. This deposition is being held at Debevoise & Plimpton, 919 Third Avenue, New York, New York.

My name is Christian Bidonde. I am the legal video specialist on behalf of Gradillas. The certified stenographer is Patricia Bidonde on behalf of Gradillas. I am not related to any party in this action nor am I financially interested in the outcome.

1 Counsel will state their
2 appearances for the record after which
3 the certified stenographer will swear in
09:22 4 the witness.

09:22 5 MS. STEWART: Ladan Stewart for
09:22 6 plaintiff, the SEC, along with Mark
09:22 7 Sylvester.

09:22 8 MS. ZORNBERG: Lisa Zornberg from
09:22 9 Debevoise & Plimpton on behalf of Ripple
09:22 10 Labs.

09:22 11 MS. BUNTING: Kristina Bunting
09:23 12 from Paul, Weiss, Rifkind, Wharton &
09:23 13 Garrison on behalf of Christian Larsen.

09:23 14 MR. FORD: Christopher Ford,
09:23 15 Debevoise & Plimpton, on behalf of
09:23 16 Ripple Labs.

09:23 17 MR. SOLOMON: Matthew Solomon
09:23 18 from Cleary Gottlieb Steen & Hamilton on
09:23 19 behalf of Brad Garlinghouse.

09:23 20 MS. MENTREK: Maureen Mentrek,
09:23 21 Debevoise & Plimpton, on behalf of
09:23 22 Ripple Labs.

09:23 23 MR. SYLVESTER: Mark Sylvester on
09:23 24 behalf of the SEC.

25

1 Y E S H A Y A D A V, called as a witness,
2 having been duly sworn by a Notary
3 Public, was examined and testified as
4 follows:

5 EXAMINATION BY

6 MS. STEWART:

09:23 7 Q. Good morning, Professor Yadav.
09:23 8 As I mentioned, my name is Ladan Stewart. I'm
09:23 9 going to be asking questions on behalf of the
09:23 10 SEC. Thank you for indulging us in this, sort
09:23 11 of, half remote, half in-person deposition
09:23 12 today.

09:23 13 Have you had your deposition
09:24 14 taken before?

09:24 15 A. I have not.

09:24 16 Q. So before we begin, let's just
09:24 17 start with some sort of rules of the road for
09:24 18 today, the most important of which is that the
09:24 19 court reporter in the room with you is
09:24 20 transcribing everything that we say. So in
09:24 21 order to make a good record for her, it's
09:24 22 important that we don't talk over each other.

09:24 23 So if you could please wait for
09:24 24 me to finish my question before you answer,
09:24 25 and I'll do my best to wait until you finish

09:24 1 your answer before I ask my next question.

09:24 2 Okay?

09:24 3 A. Okay.

09:24 4 Q. And along the same lines, the
09:24 5 court reporter can't take down nods of the
09:24 6 head or shakes of the head. So if you can
09:24 7 give verbal, audible answers to my questions.

09:24 8 Okay?

09:24 9 A. Okay.

09:24 10 Q. And if you don't understand any
09:24 11 question, let me know and I will rephrase it.
09:24 12 And if at any time you need a break, just ask
09:24 13 me and we can go off the record. But I would
09:24 14 ask that you answer the question that I posed
09:24 15 to you before we take a break. Okay?

09:24 16 A. Okay.

09:24 17 MS. ZORNBERG: Ladan.

09:25 18 MS. STEWART: Yes.

09:25 19 MS. ZORNBERG: I'd like to also
09:25 20 just put on the record, as with prior
09:25 21 depositions, that an objection by any
09:25 22 counsel for the defendant is sufficient
09:25 23 to preserve it on behalf of all
09:25 24 defendants.

09:25 25 MS. STEWART: Okay.

09:25 1 Q. Professor Yadav, is there any
09:25 2 reason that you can't testify truthfully or
09:25 3 accurately today?

09:25 4 A. There is not.

09:25 5 Q. Were you retained to provide
09:25 6 expert services in this case?

09:25 7 A. I am, yes.

09:25 8 Q. Who retained you?

09:25 9 A. I've been retained by Ripple
09:25 10 Labs, Christian Larsen, and Brad Garlinghouse
09:25 11 and the lawyers on behalf of the defendants.

09:25 12 Q. Thank you. When were you first
09:25 13 contacted about this engagement?

09:25 14 A. I was first contacted
09:25 15 approximately in mid-September about this
09:25 16 engagement.

09:25 17 Q. In September of what year?

09:25 18 A. 2021.

09:26 19 Q. And who contacted you?

09:26 20 A. I was contacted by Sam Levander
09:26 21 and Alex Janghorbani of Cleary Gottlieb on
09:26 22 behalf of Brad Garlinghouse.

09:26 23 Q. How much time have you spent on
09:26 24 this engagement to date?

09:26 25 A. I can't say exactly. I would say

09:26 1 maybe over a hundred hours certainly.

09:26 2 Q. Do you mean between 100 and 150,
09:26 3 would you say?

09:26 4 A. I would say so. I can't say
09:26 5 exactly.

09:26 6 Q. What have you billed so far for
09:26 7 your services in this matter?

09:26 8 A. I have not actually sent a bill
09:26 9 yet.

09:26 10 Q. Do you plan to send a bill?

09:26 11 A. I do, yes.

09:27 12 Q. Did you take any steps to prepare
09:27 13 for today's deposition?

09:27 14 A. I did, yes.

09:27 15 Q. What did you do?

09:27 16 A. I have reviewed my own documents
09:27 17 in the report, and I've also prepared with
09:27 18 counsel.

09:27 19 Q. And when you say "counsel," who
09:27 20 are you referring to?

09:27 21 A. I'm referring to counsel for the
09:27 22 defendants.

09:27 23 Q. Which counsel specifically did
09:27 24 you meet with to prepare for your deposition?

09:27 25 A. I have met with counsel for

09:27 1 Ripple Labs, counsel for Brad Garlinghouse and
09:27 2 counsel for Christian Larsen.

09:27 3 Q. Can you identify the lawyers that
09:27 4 you've met with?

09:27 5 A. Yes, I can identify Lisa
09:27 6 Zornberg, Christopher Ford, Meredith Dearborn,
09:27 7 Kristina Bunting, Michael Schulman, Carly
09:28 8 Lagrotteria, and Maureen Mentrek. I think
09:28 9 that should be all, and Matthew Solomon as
09:28 10 well.

09:28 11 Q. And how many sessions did you
09:28 12 meet with counsel to prepare for your
09:28 13 deposition?

09:28 14 A. I can't remember exactly. I
09:28 15 would say maybe five, five or six. I can't
09:28 16 say exactly.

09:28 17 Q. How many hours total would you
09:28 18 say you spent with counsel in preparing for
09:28 19 your deposition?

09:28 20 A. Again, I can't say exactly. I
09:28 21 would say between maybe 15 to 20 hours.

09:28 22 Q. And sorry if I'm misremembering,
09:28 23 but you said other than meeting with counsel,
09:28 24 you also reviewed documents. Is that right?

09:28 25 A. I reviewed my own report and the

09:28 1 documents cited in the report.

09:29 2 Q. All of the documents cited in
09:29 3 your report or any particular?

09:29 4 A. I just reviewed --
09:29 5 MS. ZORNBERG: Objection to form.
09:29 6 You can answer.

09:29 7 A. I reviewed the documents that I
09:29 8 felt would be useful for my analysis.

09:29 9 Q. Did you review anything else?

09:29 10 A. I focused on reviewing my report.

09:29 11 Q. Did you speak with anyone other
09:29 12 than the counsel that you mentioned in
09:29 13 preparing for your deposition?

09:29 14 A. I have not.

09:29 15 Q. Okay. Now I'm going to ask
09:29 16 Mr. Sylvester to please hand you a copy of
09:29 17 your report which we had premarked as Exhibit
09:29 18 YY-1.

09:29 19 A. Thank you.

09:29 20 Q. I'm going to ask you to take a
09:29 21 look at the document in the binder that was
09:29 22 just handed to you and tell me if you
09:29 23 recognize it.

09:29 24 (Exhibit YY-1, Expert report of
09:29 25 Professor Yesha Yadav, marked for

09:30 1 identification, as of this date.)

09:30 2 A. (Document review.)

09:30 3 MS. STEWART: And for the counsel
09:30 4 who are participating by Zoom, I'm going
09:30 5 to ask our paralegal Stella not to
09:30 6 display the documents on Zoom just
09:30 7 because, when that happens, I can't see
09:30 8 Professor Yadav. So we will e-mail you
09:30 9 the exhibits instead.

09:30 10 A. I recognize my report, yes.

09:30 11 Q. And so it is your expert report
09:30 12 in this matter?

09:30 13 A. This is my expert report in the
09:30 14 matter.

09:30 15 Q. And if you look at the page
09:31 16 following page 71, is that your signature?

09:31 17 A. That is my signature, yes.

09:31 18 Q. When did you finalize this
09:31 19 report?

09:31 20 A. This report was finalized on
09:31 21 October the 4th, 2021.

09:31 22 Q. Have you finished all the work
09:31 23 that you were assigned to do in this case?

09:31 24 A. I believe so. For the moment,
09:31 25 yes.

09:31 1 Q. Are you planning to submit a
09:31 2 supplemental report in this case?

09:31 3 A. Not that I know of, no.

09:31 4 Q. And in the pocket of the binder
09:31 5 that has your report, there should be an
09:31 6 errata sheet that's dated January 28, 2022.

09:31 7 Do you see that?

09:31 8 A. I do, yes.

09:31 9 Q. Is that your signature on the
09:32 10 errata sheet?

09:32 11 A. It is, yes.

09:32 12 Q. Did you prepare this errata
09:32 13 sheet?

09:32 14 A. I did, yes.

09:32 15 Q. Other than the information on
09:32 16 this errata sheet, is there any inaccuracy
09:32 17 that you're aware of in your report that you
09:32 18 would like to correct here today?

09:32 19 A. Not that I know of, no.

09:32 20 Q. Since you signed this report,
09:32 21 have you become aware of anything that has
09:32 22 affected or altered the opinions that are set
09:32 23 forth in the report?

09:32 24 A. I have not, no.

09:32 25 Q. Who wrote this report?

09:32 1 A. I did.

09:32 2 Q. Did anyone help you draft the
09:32 3 report?

09:32 4 MS. ZORNBERG: You can answer
09:32 5 without disclosing communications with
09:32 6 counsel.

09:32 7 THE WITNESS: Sure.

09:32 8 A. I wrote this report. I received
09:32 9 comments from counsel. In addition I
09:32 10 requested counsel to help me with various
09:32 11 research in relation to the preparation of
09:32 12 this report. But I held the pen. This is my
09:33 13 opinion and conclusions.

09:33 14 Q. Other than asking counsel for
09:33 15 comments on the report, did you ask anyone
09:33 16 else for comments on the report?

09:33 17 A. I did not, no.

09:33 18 Q. Did counsel draft any portion of
09:33 19 the report?

09:33 20 MS. ZORNBERG: Objection.

09:33 21 MS. STEWART: I'm sorry, what was
09:33 22 your answer?

09:33 23 MS. ZORNBERG: I'm going to
09:33 24 direct the witness not to answer to the
09:33 25 extent that the witness has already --

09:33 1 on grounds that it's prohibited by
09:33 2 Rule 26 and you're calling for attorney
09:33 3 work product. The witness has already
09:33 4 said that she received comments.

09:33 5 MS. STEWART: So you're not going
09:33 6 to let her answer a yes or no question
09:33 7 as to whether counsel drafted any
09:33 8 portion of the report?

09:33 9 MS. ZORNBERG: I'm not, no. I
09:34 10 think that's -- you're calling for
09:34 11 privileged information. I'll certainly
09:34 12 permit questions about, you know, if you
09:34 13 want to ask questions about what she did
09:34 14 with comments that she received from
09:34 15 counsel.

09:34 16 MS. STEWART: Okay.

09:34 17 BY MS. STEWART:

09:34 18 Q. Are you going to follow counsel's
09:34 19 instructions not to answer that question,
09:34 20 Professor?

09:34 21 A. I am, yes.

09:34 22 Q. With respect to the comments that
09:34 23 you received from counsel, did you incorporate
09:34 24 those into the final version of the report?

09:34 25 MS. ZORNBERG: You can answer.

09:34 1 A. I reflected on the comments, I
09:34 2 considered the comments, I incorporated the
09:34 3 comments that I was comfortable with in my own
09:34 4 language and with my own interpretation and
09:34 5 thinking.

09:34 6 Q. And you said that you asked
09:35 7 counsel to undertake various research for you
09:35 8 in connection with the report. Is that right?

09:35 9 A. That's right, yes.

09:35 10 Q. What research did you ask counsel
09:35 11 to undertake?

09:35 12 MS. ZORNBERG: You can answer.

09:35 13 A. The research that I asked counsel
09:35 14 to undertake mainly related to helping locate
09:35 15 information in relation to the location of the
09:35 16 exchanges set out in Table A.

09:35 17 Q. And what specifically did you ask
09:35 18 counsel to do?

09:35 19 A. In general --

09:35 20 MS. ZORNBERG: Again, again, just
09:35 21 as an instruction, I'll allow you to
09:35 22 answer. But just focus on what the task
09:35 23 was that you wanted to perform and not
09:35 24 get into the specifics of communications
09:35 25 with counsel.

09:35 1 A. In general, I asked counsel to
09:35 2 help me locate information in relation to the
09:35 3 various aspects of the location of the
09:36 4 different exchanges in Table A.

09:36 5 Q. What steps are you aware that
09:36 6 counsel took in order to conduct this
09:36 7 research?

09:36 8 A. I believe that counsel consulted
09:36 9 with various databases and sources to provide
09:36 10 the information.

09:36 11 Q. What databases did counsel
09:36 12 consult?

09:36 13 A. I believe that counsel consulted
09:36 14 databases including CipherTrace, S&P
09:36 15 Intelligence, as well as reputable news
09:36 16 sources.

09:36 17 Q. And you mentioned, in addition to
09:36 18 databases, sources. Any other sources that
09:36 19 you're aware of that counsel consulted?

09:36 20 A. I believe the --

09:36 21 MS. ZORNBERG: Object to form.

09:36 22 You can answer.

09:36 23 A. I believe the focus here was on
09:37 24 the CipherTrace and S&P databases, as well as
09:37 25 reputable news sources that are cited in this

09:37 1 report.

09:37 2 Q. And when you refer to counsel
09:37 3 undertaking this research, just to be clear,
09:37 4 who are you referring to?

09:37 5 A. I'm referring to counsel for the
09:37 6 defendants.

09:37 7 Q. Were you involved in this
09:37 8 research process?

09:37 9 A. I was constantly involved as part
09:37 10 of the conversations surrounding the research,
09:37 11 yes.

09:37 12 Q. How were you involved?

09:37 13 MS. ZORNBERG: I'm just going to
09:37 14 give the instruction not to disclose
09:37 15 your communications with counsel. I
09:37 16 think these questions are approaching
09:37 17 the line, especially in light of the
09:37 18 witness' answers so far.

09:37 19 But if you want to -- if you want
09:37 20 to answer by specifically providing
09:37 21 information on what you did as part of
09:38 22 your research, that's fine.

09:38 23 A. I received information. I
09:38 24 reviewed information. I incorporated the
09:38 25 insights and information that I wished to

09:38 1 include in the report as part of my analysis.

09:38 2 Q. What, if anything, did you do to
09:38 3 check the accuracy of the research that
09:38 4 counsel performed?

09:38 5 A. I went through the footnotes, I
09:38 6 checked the sources, made sure I was
09:38 7 comfortable with the databases that were being
09:38 8 consulted, and carefully read through the
09:38 9 documents provided to me.

09:38 10 Q. Did you check each and every
09:38 11 source?

09:38 12 A. I attempted to check each and
09:38 13 every source, yes.

09:38 14 Q. Were there some that you were not
09:38 15 successful in checking?

09:38 16 A. Not that I can recall, sitting
09:39 17 here today.

09:39 18 Q. And did you carefully read
09:39 19 through all of the documents provided to you?

09:39 20 MS. ZORNBERG: Objection to form.

09:39 21 A. I have --

09:39 22 Q. Well, just to be clear, I thought
09:39 23 that your previous answer was that you
09:39 24 carefully reviewed the documents. If that's
09:39 25 not what you said, I apologize.

09:39 1 But did you review all the
09:39 2 documents provided to you?

09:39 3 MS. ZORNBERG: Objection. Asked
09:39 4 and answered.

09:39 5 You can answer.

09:39 6 A. I've gone through all the
09:39 7 documents provided to me as part of the -- as
09:39 8 part of the footnotes.

09:39 9 Q. What, if anything, did you do to
09:39 10 check the thoroughness of the research that
09:39 11 counsel performed?

09:39 12 MS. ZORNBERG: Object to form.

09:39 13 You can answer.

09:39 14 A. I did my own research in relation
09:39 15 to the -- in relation to the matters detailed
09:39 16 in the report. I went through counsel's
09:39 17 documents that were sent to me and made sure I
09:39 18 was comfortable.

09:39 19 Q. When you say that you did your
09:40 20 own research, what are you referring to?

09:40 21 A. Referring to my own research and
09:40 22 experience in relation to the matters being
09:40 23 dealt with in the report, as well as ensuring
09:40 24 that I was comfortable with the databases that
09:40 25 were consulted as part of this research.

09:40 1 Q. Did you do any research in
09:40 2 connection with the footnotes that you're
09:40 3 referring to independent of the research that
09:40 4 counsel performed?

09:40 5 A. I did research
09:40 6 independent -- independently. That is
09:40 7 referenced throughout my report. My
09:40 8 independent research was certainly a part of
09:40 9 my process in preparing this report.

09:40 10 Q. What did you do to make sure that
09:40 11 you were comfortable with the databases that
09:40 12 counsel was using for its research?

09:41 13 A. I had heard of the databases
09:41 14 before. Certainly in one case, I had used
09:41 15 that database myself, or reports from that
09:41 16 database myself in relation to S&P. And I
09:41 17 made sure that I was comfortable with
09:41 18 CipherTrace, and I was very comfortable. It
09:41 19 was a firm that I had heard of before.

09:41 20 Q. Taking a look at Exhibit A to
09:41 21 your report, if you can turn to that, please.
09:41 22 Are you there, Professor?

09:41 23 A. I am. I am here.

09:41 24 Q. Is Exhibit A -- I'm sorry. Does
09:42 25 Exhibit A to your report include your CV?

09:42 1 A. It does, yes.

09:42 2 Q. Sitting here today, are you aware
09:42 3 of any inaccuracies in your CV as presented in
09:42 4 Exhibit A?

09:42 5 A. There are no inaccuracies in the
09:42 6 CV. However, it does -- it does need updating
09:42 7 to reflect various conferences that I've been
09:42 8 attending and presentations that I've been
09:42 9 giving over the course of the last year as
09:42 10 well as early this year.

09:42 11 Including, for example, several
09:42 12 presentations in relation to the regulation of
09:42 13 cryptocurrency exchanges that I gave towards
09:42 14 the latter half of 2021, as well as talks that
09:42 15 I've given this year, including a talk last
09:42 16 week in relation to the insolvency of
09:42 17 cryptocurrency exchanges.

09:42 18 And I'm happy to talk more about
09:42 19 these conferences and talks that I've been
09:43 20 giving that are not reflected in this current
09:43 21 draft of the CV.

09:43 22 Q. Okay. Thank you. Does the
09:43 23 education section of your CV accurately list
09:43 24 the degrees that you earned?

09:43 25 A. Yes, it does.

09:43 1 Q. Do you hold any professional
09:43 2 licenses?

09:43 3 A. Yes, I am qualified to practice
09:43 4 as a solicitor in England and Wales in the UK.

09:43 5 Q. Have you held any other
09:43 6 professional licenses in the past?

09:43 7 A. I don't believe so, no.

09:43 8 Q. Have you ever been the subject of
09:43 9 a disciplinary action related to your
09:43 10 professional activity?

09:43 11 A. I have not, no.

09:43 12 Q. And you've been a professor at
09:43 13 Vanderbilt Law School since 2006. Is that
09:43 14 right?

09:43 15 A. No, I've been a professor at
09:44 16 Vanderbilt Law School since 2011.

09:44 17 Q. Okay. Are you currently tenured?

09:44 18 A. I am, yes.

09:44 19 Q. When did you become tenured?

09:44 20 A. I believe I became tenured in
09:44 21 2016. I should know that better, but I think
09:44 22 it was 2016.

09:44 23 Q. Have you testified as an expert
09:44 24 witness before?

09:44 25 A. I have not.

09:44 1 Q. Have you submitted an expert
09:44 2 report before?

09:44 3 A. I have not.

09:44 4 Q. Have you been retained as an
09:44 5 expert witness before?

09:44 6 A. I have not.

09:44 7 Q. When did you first hear of
09:44 8 Ripple?

09:44 9 A. I first came across Ripple as
09:45 10 part of my general work into financial
09:45 11 markets. I can't recall exactly when, but I
09:45 12 came across Ripple as part of my everyday
09:45 13 research work.

09:45 14 Q. And when did you first hear of
09:45 15 XRP?

09:45 16 A. Again, I came across XRP as part
09:45 17 of my normal research into financial markets.
09:45 18 Again, I can't recall at what time and when.

09:45 19 Q. And just so the record is clear,
09:45 20 when I said "Ripple," I'm referring to Ripple
09:45 21 Labs. Is that right?

09:45 22 MS. ZORNBERG: Object to form.

09:45 23 A. I'm sorry, could you --

09:45 24 Q. When I asked you questions about
09:45 25 Ripple, I was referring to Ripple Labs. Were

09:45 1 your answers also referring to Ripple Labs?

09:45 2 A. Yes. Ripple Labs.

09:45 3 Q. And just so the record is clear,
09:45 4 what is XRP?

09:45 5 A. XRP is a token that is a part of
09:45 6 the XRP ledger that is -- that is a --
09:46 7 produced by the XRP ledger.

09:46 8 Q. And what is the XRP ledger?

09:46 9 A. The XRP ledger is a ledger that
09:46 10 is providing validation in relation to
09:46 11 transactions in XRP as well as other
09:46 12 currencies that are part of -- that are a part
09:46 13 of the ledger.

09:46 14 Q. Prior to your retention as an
09:46 15 expert in this matter, what did you know about
09:46 16 Ripple?

09:46 17 A. The knowledge that I had about
09:46 18 Ripple was a fairly general knowledge in
09:46 19 relation to the role of Ripple as a payment
09:46 20 services facilitator.

09:46 21 Q. And how did you gain this
09:47 22 knowledge about Ripple prior to your retention
09:47 23 for this case?

09:47 24 A. It was part of conversations I
09:47 25 had with academics as well as a part of the

09:47 1 general research ecosystem that I work in in
09:47 2 relation to Fintech.

09:47 3 Q. And prior to your retention as an
09:47 4 expert witness, what did you know about XRP?

09:47 5 A. What I knew about XRP related to
09:47 6 its role as a cryptocurrency that facilitated
09:47 7 international payment transactions.

09:47 8 Q. And how did you learn this
09:47 9 information about XRP?

09:47 10 MS. ZORNBERG: Object to form.

09:47 11 A. Again, I can't say exactly. I
09:47 12 had various conversations with academics as
09:47 13 well as part of the general Fintech system
09:47 14 that I am researching in.

09:48 15 Q. Have you ever met Chris Larsen?

09:48 16 A. I have not.

09:48 17 Q. Have you ever heard Chris Larsen
09:48 18 speak?

09:48 19 A. No, I don't believe I have.

09:48 20 Q. Have you ever met Brad
09:48 21 Garlinghouse?

09:48 22 A. I have not.

09:48 23 Q. Have you ever heard
09:48 24 Mr. Garlinghouse speak?

09:48 25 A. I don't believe I have.

09:48 1 Q. Were you a speaker at the DC
09:48 2 Fintech Week virtual experience in October
09:48 3 2021?

09:48 4 A. I was, yes.

09:48 5 Q. Do you recall whether
09:48 6 Mr. Garlinghouse was also a speaker at that
09:48 7 conference?

09:48 8 A. I believe he was in the program.

09:48 9 Q. But you don't believe that you
09:48 10 heard him speak?

09:48 11 A. No, I was not able to be there
09:49 12 for his session.

09:49 13 Q. And the same question with
09:49 14 respect to that conference in October of 2020.
09:49 15 Were you a speaker at that conference in
09:49 16 October 2020?

09:49 17 A. At which conference, sorry?

09:49 18 Q. At the same -- the DC week
09:49 19 virtual experience?

09:49 20 MS. ZORNBERG: Objection. And
09:49 21 just to note, unless I misheard, I
09:49 22 thought you previously said the date was
09:49 23 October 2021. And now you're saying
09:49 24 October 2020.

09:49 25 Can you just clarify the year

09:49 1 that you're addressing?

09:49 2 Q. Sure. I'm asking about both
09:49 3 years. So I think my initial question was
09:49 4 about October 2021.

09:49 5 And now I want to ask the same
09:49 6 question about whether you also spoke at the
09:49 7 same conference the year before in
09:49 8 October 2020.

09:49 9 A. I believe I did.

09:49 10 Q. And do you recall if
09:49 11 Mr. Garlinghouse was a speaker at that
09:49 12 conference in October 2020?

09:49 13 A. I really can't recall. I did not
09:49 14 attend his session, if he would have been in
09:49 15 the program.

09:50 16 Q. Prior to your retention as an
09:50 17 expert, did you have any relationship with any
09:50 18 Ripple board member?

09:50 19 A. I -- I'm not sure if he is a
09:50 20 board member. I do know a professor who I
09:50 21 believe may be affiliated, potentially. But
09:50 22 I'm not sure.

09:50 23 Q. And who is the professor you're
09:50 24 referring to?

09:50 25 A. Michael Barr.

09:50 1 Q. Prior to your retention as an
09:50 2 expert, did you have any relationship with any
09:50 3 Ripple executive?

09:50 4 A. No.

09:50 5 Q. Are you on the advisory board for
09:51 6 Leaf Global Fintech?

09:51 7 A. Am I? I am not sure. It's --
09:51 8 one of the my students was a person who was
09:51 9 directing that. I asked him that -- not to be
09:51 10 on the board. So I don't believe I am.

09:51 11 Q. Do you have any connection with
09:51 12 Leaf Global Fintech?

09:51 13 A. All -- I just -- I know Nat
09:51 14 Robinson, who I believe started it. But
09:51 15 beyond that, no.

09:51 16 Q. Before your retention in this
09:51 17 case, did you have any meetings or
09:51 18 conversations with anyone affiliated with
09:51 19 Ripple?

09:51 20 A. Affiliated in what sense?

09:51 21 MS. ZORNBERG: Yeah, object to
09:51 22 form of that question.

09:51 23 Q. Anyone who was an employee,
09:52 24 executive, board member, shareholder, or
09:52 25 otherwise affiliated with Ripple?

09:52 1 MS. ZORNBERG: Objection.

09:52 2 Q. I believe you can answer but --

09:52 3 MS. STEWART: Lisa, you can

09:52 4 correct me.

09:52 5 MS. ZORNBERG: Objection noted.

09:52 6 You can answer if you understand

09:52 7 the question.

09:52 8 A. I'm not sure I understand the

09:52 9 question. It's a very broad question. I'm

09:52 10 not sure who is affiliated with Ripple

09:52 11 exactly. The only person I know who may be

09:52 12 potentially at some point is Michael Barr, who

09:52 13 is a colleague of mine at Michigan University.

09:52 14 Q. Do you own any XRP?

09:52 15 A. I do not.

09:52 16 Q. Have you ever owned XRP?

09:52 17 A. I have not.

09:52 18 Q. Do you expect to receive any

09:53 19 compensation in XRP in this case?

09:53 20 A. I do not.

09:53 21 Q. Do you own other

09:53 22 cryptocurrencies?

09:53 23 A. I do not.

09:53 24 Q. Have you ever?

09:53 25 A. I have not.

09:53 1 MS. STEWART: Mark, can we hand
09:53 2 out Exhibit YY-10.

09:53 3 A. Thank you very much.

09:53 4 (Exhibit YY-10, "Fintech and the
09:53 5 Innovation Trilemma" by Yesha Yadav and
09:53 6 Chris Bummer, marked for identification,
09:53 7 as of this date.)

09:53 8 Q. Now, professor, take however long
09:53 9 you need to examine YY-10. And I'm going to
09:53 10 ask you if you recognize it.

09:53 11 A. (Document review.)

09:55 12 Yes, it's my article with
09:55 13 Professor Chris Brummer.

09:55 14 Q. And the title of it is "Fintech
09:56 15 and the Innovation Trilemma." Is that right?

09:56 16 A. That's right, yeah.

09:56 17 Q. Did you discuss digital assets in
09:56 18 this article?

09:56 19 A. I believe digital assets are
09:56 20 referenced in this article, yes.

09:56 21 Q. Did you discuss XRP in this
09:56 22 article?

09:56 23 A. It is very briefly referenced in
09:56 24 the first page, I believe.

09:56 25 Q. And that's the page that is

09:56 1 numbered on top 237. Is that right?

09:56 2 A. That's right.

09:56 3 Q. And that reference is to Ripple's
09:56 4 XRP. Is that right?

09:56 5 A. It is, yes.

09:57 6 Q. Why did you reference "Ripple's
09:57 7 XRP" as opposed to just "XRP"?

09:57 8 A. It was a sloppy use of wording on
09:57 9 my part and my coauthor's part. We recognized
09:57 10 the separation; however, it was just a
09:57 11 colloquial and sloppy usage.

09:57 12 Q. And if you look at page 277 of
09:57 13 the article, the fourth line down, do you see
09:57 14 another reference to Ripple's XRP?

09:57 15 A. Yes.

09:57 16 Q. And why did you use this term
09:57 17 "Ripple's XRP" here?

09:57 18 A. Again, it was sloppy, sloppiness
09:57 19 on our part.

09:57 20 Q. And when you say "sloppy," what
09:58 21 do you mean?

09:58 22 A. We should have been more careful
09:58 23 in referencing XRP as a separate
09:58 24 cryptocurrency distinct from Ripple Labs.

09:58 25 Q. Have you ever written a

09:58 1 publication critiquing any aspect of the US
09:58 2 regulatory regime?

09:58 3 MS. ZORNBERG: Objection.

09:58 4 A. Many, I believe. It's -- I'm not
09:58 5 very sure, the question is very broad as to
09:58 6 the definition of "critique." But I certainly
09:58 7 write publications on the various aspects of
09:58 8 US regulation in different context.

09:58 9 Q. And are some of these
09:58 10 publications critical of the US regulatory
09:58 11 regime?

09:58 12 MS. ZORNBERG: Objection to form.

09:58 13 A. I'm not really sure what you mean
09:59 14 about "critical," about the regulatory regime.

09:59 15 Q. What is it that you don't
09:59 16 understand about that?

09:59 17 A. It's just very --

09:59 18 MS. ZORNBERG: Object to form.

09:59 19 A. It's very broad. The definition
09:59 20 of "critique" is not necessarily a
09:59 21 particularly accurate description. It
09:59 22 critiques certainly some aspects of it. But
09:59 23 the idea here is to improve and enhance the
09:59 24 framework that is currently in place in
09:59 25 different context.

09:59 1 Q. When you say "the idea here,"
09:59 2 what are you referring to?

09:59 3 A. My goal in my research.

09:59 4 Q. If the word "critique" is not an
09:59 5 appropriate word, how would you describe your
09:59 6 research as it applies to the US regulatory
09:59 7 regime?

09:59 8 MS. ZORNBERG: Object to form.

09:59 9 A. I suppose "critique" can be used.
09:59 10 The word is really to try and examine
10:00 11 innovations that are currently underway in the
10:00 12 marketplace, and to think about ways in which
10:00 13 our current regulatory regime fits the
10:00 14 innovations that are developing in the market
10:00 15 today.

10:00 16 Q. And is it your view in general
10:00 17 that the corrupt regulatory regime does not
10:00 18 fit the innovations in the market today?

10:00 19 MS. ZORNBERG: Object to form.

10:00 20 A. That's very broad. I'm sorry.
10:00 21 It's a very broad question.

10:00 22 Q. Okay. So tell me what your view
10:00 23 is.

10:00 24 MS. ZORNBERG: Object to form.

10:00 25 View of what?

10:00 1 Q. You started talking about the
10:00 2 goals of your research. Right? Correct?

10:00 3 A. I can --

10:00 4 MS. ZORNBERG: Object to form.
10:00 5 Put a question.

10:00 6 Q. You were referring to the goals
10:00 7 of your research with respect to innovations
10:00 8 and the US regulatory regime. Correct?

10:01 9 MS. ZORNBERG: Object to form.

10:01 10 A. Yes, I'm happy to go through my
10:01 11 papers with you and to discuss particular
10:01 12 aspects of my thesis in relation to what would
10:01 13 substantiate the overall framework that I
10:01 14 have.

10:01 15 So, for example, in relation to
10:01 16 my research in market microstructure, I
10:01 17 examined innovations in the ways in which our
10:01 18 trading systems have evolved to incorporate
10:01 19 high-speed traders, high-speed communication
10:01 20 technologies, and then to look at aspects of
10:01 21 our regulatory system that perhaps are less
10:01 22 well adapted than they should be to these
10:01 23 innovations in the marketplace.

10:01 24 So, for example, in "The Failure
10:01 25 of Liability in Modern Markets," which was

10:01 1 published in Virginia Law Review, I detail
10:01 2 aspects of our liability structure, for
10:01 3 example, in relation to negligence, in
10:01 4 relation to intent, in relation to strict
10:01 5 liability, that do not necessarily fit within
10:02 6 a paradigm where we have extremely high-speed
10:02 7 traders in an interconnected marketplace.

10:02 8 What I argue in that paper is
10:02 9 that the lack of a proper fit of the liability
10:02 10 structure to a modern market structure can
10:02 11 create costs for different participants in the
10:02 12 market, as well as for the structural
10:02 13 integrity of the marketplace as a whole.

10:02 14 In addition, looking at why
10:02 15 the -- looking at inefficiencies in the
10:02 16 algorithmic trading market, I have written a
10:02 17 paper in the Vanderbilt Law Review on how
10:02 18 algorithmic trading undermines efficiency in
10:02 19 capital markets.

10:02 20 Again, that paper examines
10:02 21 innovations in market structure; notably
10:02 22 high-speed trading, to think about ways in
10:02 23 which the disclosure paradigm that we have
10:02 24 doesn't exactly fit in a market in which time
10:03 25 horizons tend to be pretty short term in

10:03 1 nature, and to try to think of ways in which
10:03 2 we might incorporate a more long-term vision
10:03 3 into incorporating fundamental information
10:03 4 into our disclosure regimes.

10:03 5 Similarly, in the oversight
10:03 6 failure in securities markets, I examine
10:03 7 innovations in relation to platforms and
10:03 8 platform design.

10:03 9 So here I look at competition in
10:03 10 the marketplace to bring in insights about
10:03 11 dark pools, particularly as they're
10:03 12 colloquially known, alternative trading
10:03 13 systems, and to think about ways in which
10:03 14 exchanges and dark pools can exercise
10:03 15 oversight across the marketplace as a whole
10:03 16 that is innovating rapidly to include
10:03 17 competition and innovation in platform design.

10:03 18 In addition, more recently, I've
10:03 19 been working on projects in relation to the US
10:03 20 treasury markets, US treasury market
10:03 21 microstructure, which has seen tremendous
10:04 22 innovation over the last ten years, and where
10:04 23 regulation has not kept pace at all to meet
10:04 24 the structure of this marketplace.

10:04 25 There I have written two papers,

10:04 1 one is my own and one is coauthored, that
10:04 2 examine the ways in which US treasury market
10:04 3 microstructure, as well as the Ripple market
10:04 4 microstructure and their regulation, do not
10:04 5 fit together given the evolving paradigms
10:04 6 within our marketplace today.

10:04 7 In the broken bond market, again,
10:04 8 I examine the ways in which our regulation is
10:04 9 not -- is insufficient to provide a way for
10:04 10 the bond market to offer efficiency in the
10:04 11 marketplace.

10:04 12 And, again, this paper provides
10:04 13 ways in which to think about -- think about
10:04 14 innovations within private governance that we
10:04 15 could bring in that could help make the bond
10:04 16 market a more amenable one for efficiency.

10:04 17 So, you know, thinking through
10:04 18 this, sort of, line of projects, I have also
10:05 19 papers on Fintech and the Innovation Trilemma,
10:05 20 which you already mentioned, as well as one
10:05 21 looking at international Fintech that examines
10:05 22 the challenges that regulators face when
10:05 23 dealing with Fintech Innovations.

10:05 24 What we do in that paper is that
10:05 25 we look at the ways in which Fintech is

10:05 1 different from past iterations of financial
10:05 2 innovation. We examine the use of algorithms.
10:05 3 We examine the use of big data. We examine
10:05 4 the entry of smaller nontraditional firms into
10:05 5 the financial ecosystem, and think about the
10:05 6 ways in which that poses special and new
10:05 7 challenges for regulators.

10:05 8 In addition, I have a few papers,
10:05 9 as I've referenced in my CV, in relation to
10:05 10 cryptocurrency exchanges. And here, I think
10:05 11 about ways or I'm proposing to think about
10:05 12 ways that cryptocurrency exchanges are
10:05 13 evolving and to help make their evolution as
10:05 14 something that can be a positive for the
10:06 15 regulatory oversight of the market as a whole.

10:06 16 So it's very hard for me to
10:06 17 provide a, sort of -- you know, without going
10:06 18 through individual papers to provide a, sort
10:06 19 of, overarching description, as it were.

10:06 20 But my goal here, as you can see,
10:06 21 is to think about innovations in the financial
10:06 22 marketplace and to think about ways in which
10:06 23 our regulatory paradigms that we rely on
10:06 24 currently may not be a great fit.

10:06 25 Q. Professor, how would you describe

10:06 1 your area of expertise?

10:06 2 A. I would describe my area of
10:06 3 expertise as market microstructure and
10:06 4 innovation.

10:06 5 MS. STEWART: Can we go off the
10:06 6 record, please.

10:07 7 A. I would also add --

10:07 8 MS. ZORNBERG: Wait, wait, wait,
10:07 9 hold on.

10:07 10 Are we off or are we on?

10:07 11 MS. STEWART: Can we go off,
10:07 12 please.

10:07 13 MS. ZORNBERG: Was there
10:07 14 something that you needed to finish to
10:07 15 answer the last question?

10:07 16 A. Yes, I wanted to add financial
10:07 17 markets -- financial markets and their
10:07 18 regulation to my area of expertise as well.

10:07 19 MS. STEWART: Okay. Thank you.
10:07 20 That's helpful.

10:07 21 Now can we go off the record.

10:07 22 MS. ZORNBERG: Yes.

10:07 23 THE VIDEOGRAPHER: The time is
10:07 24 10:07 a.m. This concludes Media 1. Off
10:07 25 the record.

10:25 1 (Recess taken from 10:07 a.m. to
10:25 2 10:25 a.m.)

10:25 3 THE VIDEOGRAPHER: The time now
10:25 4 is 10:25 a.m. This begins Media 2. On
10:25 5 the record.

10:25 6 BY MS. STEWART:

10:25 7 Q. Professor Yadav, before we went
10:25 8 off the record, we were talking about your
10:25 9 area of expertise. Do you recall that?

10:25 10 A. I do, yes.

10:25 11 Q. Does your area of expertise
10:25 12 include Fintech?

10:25 13 A. It does, yes.

10:25 14 Q. And just so the record is clear,
10:25 15 what is Fintech?

10:25 16 A. There is no standard definition
10:25 17 of Fintech. Broadly speaking, it refers to
10:25 18 the use of digital technologies in the area of
10:25 19 financial markets.

10:26 20 In my article, I define, it
10:26 21 alongside my coauthor, as entailing the use of
10:26 22 algorithms, big data, as well as including
10:26 23 smaller, less traditional players in the
10:26 24 financial marketplace.

10:26 25 Q. And what is your expertise with

10:26 1 respect to Fintech?

10:26 2 MS. ZORNBERG: Object to form.

10:26 3 A. So I have a great deal of
10:26 4 expertise in relation to the role of new
10:26 5 technologies that are entering the financial
10:26 6 marketplace.

10:26 7 And that has come from my
10:26 8 personal professional experience that grew out
10:26 9 of my time in legal practice that examined
10:26 10 innovations in financial market design, at
10:26 11 that time focusing on financial markets'
10:26 12 contracts, financial markets' engineering,
10:27 13 looking, for example, at derivatives
10:27 14 contracts, at innovations in banking, and in
10:27 15 payment technologies.

10:27 16 And working through my research
10:27 17 in relation to the expertise that I have today
10:27 18 in relation to various aspects of Fintech,
10:27 19 including cryptocurrencies, cryptocurrency
10:27 20 exchanges, looking at also various types of
10:27 21 online advising in relation to financial
10:27 22 products, investment advice, thinking broadly
10:27 23 in relation to blockchains, looking at the
10:27 24 aspect of financial markets products that are
10:27 25 entering the marketplace such as online

10:27 1 lending that are important in the market
10:27 2 today.

10:27 3 So that is that is, in a
10:27 4 nutshell, some of the expertise that is
10:27 5 encapsulated in the word "Fintech."

10:27 6 Q. You mentioned in your last answer
10:28 7 cryptocurrency exchanges. Do you consider
10:28 8 yourself an expert with respect to the
10:28 9 functioning of cryptocurrency exchanges?

10:28 10 A. I do consider myself to be
10:28 11 knowledgeable and expert in the area of
10:28 12 cryptocurrency exchanges.

10:28 13 Q. And can you expand on how you're
10:28 14 knowledgeable and expert in that area?

10:28 15 A. Sure. The expertise that I have
10:28 16 in the area of cryptocurrency exchanges has
10:28 17 developed out of a career that has focused
10:28 18 intensively on market structure, market
10:28 19 structure platforms, platform design,
10:28 20 clearing, and settlement.

10:28 21 I began this expertise in my a
10:28 22 career at Clifford Chance where I specialized
10:28 23 as a lawyer that worked in market structure,
10:28 24 in exchange design, in clearing, settlement,
10:29 25 and risk management.

10:29 1 At that time, I worked heavily in
10:29 2 relation to advising various aspect -- on
10:29 3 various aspects of exchange design, clearing,
10:29 4 and settlement and risk management.

10:29 5 In addition, as part of this
10:29 6 overall expertise into market structure and
10:29 7 platforms, I worked as a key person, a key --
10:29 8 one of the two key lawyers that advised the
10:29 9 European payments council.

10:29 10 That was a council that was a,
10:29 11 sort of, Pan -- Pan-European effort to create
10:29 12 a harmonized payments environment for the
10:29 13 European economic area and Switzerland.

10:29 14 In that capacity, I was one of
10:29 15 the key drafters of the rules that undergirded
10:29 16 various payment schemes that included various
10:29 17 innovative forms of payments.

10:29 18 And I worked as a key resource
10:29 19 person that provided the rulemaking for those
10:29 20 schemes, as well as engaged heavily with
10:29 21 respect to the technical and operational
10:30 22 standards that were driving those payments
10:30 23 schemes.

10:30 24 Further to that work, I have
10:30 25 worked at the World Bank on various aspects of

10:30 1 cross-border finance. That is important in
10:30 2 the area of cryptocurrency exchanges as well.

10:30 3 I have worked in -- in various
10:30 4 aspects of looking at firm design, looking at
10:30 5 insolvency aspects, looking at the
10:30 6 cross-border flow of transactions and data,
10:30 7 also as part of my World Bank work into the
10:30 8 study and implementation of international
10:30 9 cross-border standards.

10:30 10 Following my time in research, I
10:30 11 have worked extremely intensively looking at
10:30 12 aspects of exchanges, clearing and settlement,
10:30 13 looking at innovations in exchange technology,
10:30 14 as I discussed with you as part of my earlier
10:30 15 answer, looking at high-frequency trading
10:30 16 platforms, for example, looking at dark pools
10:30 17 as I noted before.

10:30 18 And so the work in
10:31 19 cryptocurrencies that I am doing today is very
10:31 20 much a natural extension of that expertise and
10:31 21 knowledge and research and background that
10:31 22 have developed throughout my career in legal
10:31 23 practice, in policy, as well as today as part
10:31 24 of my research.

10:31 25 In addition, I should mention

10:31 1 that I am constantly in conversation with
10:31 2 policymakers, with thinkers, with other
10:31 3 academics, in relation to various aspects of
10:31 4 exchange design, thinking about aspects of
10:31 5 market innovation, and certainly building --
10:31 6 building a platform, a foundation for
10:31 7 developing expertise in relation to
10:31 8 cryptocurrencies and cryptocurrency exchanges.

10:31 9 Q. Which policymakers are you
10:31 10 constantly in conversations with with respect
10:31 11 to exchange design?

10:31 12 A. So I have had conversations
10:31 13 certainly as part of my work with the CFTC. I
10:32 14 was a member -- I've been a member since 2018
10:32 15 of the technology advisory committee. That
10:32 16 committee is currently, I believe it's waiting
10:32 17 for a commission sponsorship at present, so
10:32 18 it's not presently active.

10:32 19 But that was a committee in which
10:32 20 the conversations on exchange design, platform
10:32 21 design, market design, clearing, and
10:32 22 settlement were ongoing really on a very, very
10:32 23 regular basis.

10:32 24 In addition, I have also had
10:32 25 conversations with the SEC in relation to

10:32 1 aspects of treasury market structure and
10:32 2 platforms.

10:32 3 I have had conversations with
10:32 4 respect to European policymakers, the EU, the
10:32 5 EU commission. I have spoken to them about
10:32 6 aspects of treasury market platforms and
10:32 7 treasury market risks.

10:32 8 And so, you know, this is very
10:32 9 much a part of my work to engage in
10:32 10 conversations with policymakers, with leading
10:33 11 thinkers in order to be able to forward my
10:33 12 ideas for reform.

10:33 13 Q. Who at the SEC have you had
10:33 14 conversations with with respect to treasury
10:33 15 market structure and platform?

10:33 16 A. I had a conversation with Gary
10:33 17 Gensler's office, with his chief of staff, I
10:33 18 believe.

10:33 19 Q. And when was this conversation?

10:33 20 A. This conversation was, I would
10:33 21 say, just prior to Thanksgiving, if I recall
10:33 22 correctly.

10:33 23 Q. Was it a phone conversation?

10:33 24 MS. ZORNBERG: Excuse me. Can
10:33 25 you repeat that. I didn't hear it.

10:33 1 Q. Was is it a phone conversation?

10:33 2 A. It was a conversation over Zoom,
10:34 3 I think. It was a conversation on Zoom.

10:34 4 Q. Okay.

10:34 5 A. Or WebEx or one of them, yeah.

10:34 6 Q. Before your retention as an
10:34 7 expert in this matter, were you aware that XRP
10:34 8 was traded on cryptocurrency exchanges?

10:34 9 A. I was generally aware. I was
10:34 10 generally aware, I think.

10:34 11 Q. Now, professor, I want to go
10:34 12 through your report. So if you can get that
10:34 13 binder that has Exhibit YY-1 back in front of
10:34 14 you, please.

10:35 15 Do you have your report in front
10:35 16 of you?

10:35 17 A. I do, yes.

10:35 18 Q. Okay. Taking a look at paragraph
10:35 19 2, sort of, the middle of the paragraph where
10:35 20 you speak about your research, including
10:35 21 Fintech and cryptocurrencies.

10:35 22 Do you see that?

10:35 23 A. Yes, I do.

10:35 24 Q. I think you've spoken a little
10:35 25 bit about this in general, but I just want to

10:35 1 make sure we have it in the record.

10:35 2 Can you explain what research
10:35 3 you've conducted with respect to
10:35 4 cryptocurrency?

10:35 5 A. Yes.

10:35 6 MS. ZORNBERG: Object to form.

10:35 7 A. Could you be a little bit more
10:35 8 specific about what you're looking for here?

10:35 9 Q. Sure. I would like to understand
10:36 10 better the research that you're referring to
10:36 11 in this paragraph as it relates to
10:36 12 cryptocurrencies.

10:36 13 A. Sure.

10:36 14 MS. ZORNBERG: Objection. I'm
10:36 15 sorry. Can you -- are you talking about
10:36 16 a specific part of the paragraph?

10:36 17 MS. STEWART: Yeah. We're -- I'm
10:36 18 asking, Lisa, about this sentence that
10:36 19 begins with "This research spans equity
10:36 20 markets," and ends with, "and Fintech
10:36 21 including cryptocurrencies."

10:36 22 So I just want to understand the
10:36 23 portion that refers to cryptocurrencies
10:36 24 and the research that the professor has
10:36 25 conducted with respect to

10:36 1 cryptocurrencies. I'm not sure what's
10:36 2 unclear about that.

10:36 3 MS. ZORNBERG: Thank you.

10:36 4 A. The research that I'm currently
10:36 5 undertaking on cryptocurrencies spans at
10:36 6 present, I believe, four projects. So I will
10:36 7 speak on each of them in turn.

10:36 8 So with respect to cryptocurrency
10:36 9 exchanges, I'm currently working on an article
10:36 10 that examines the ability of cryptocurrency
10:37 11 exchanges to perform the role of
10:37 12 self-regulatory organizations as traditional
10:37 13 exchanges currently do under the Securities
10:37 14 and Exchange Act.

10:37 15 So what my article seeks to do is
10:37 16 examine the pros and the cons, the rationales,
10:37 17 the theoretical payoffs that might come from
10:37 18 cryptocurrency exchanges, exercising private
10:37 19 oversight and discipline of the marketplace as
10:37 20 traditional exchanges currently do.

10:37 21 What this paper seeks to argue is
10:37 22 that cryptocurrency exchanges on the positive
10:37 23 side can bring a great deal of expertise, of
10:37 24 industry experience, and also disciplinary
10:37 25 power arising from their very important,

10:37 1 indeed, central role within the cryptocurrency
10:37 2 ecosystem.

10:37 3 However, the paper also points to
10:38 4 potential drawbacks of cryptocurrency
10:38 5 exchanges performing this oversight role. For
10:38 6 example, it details various potential for
10:38 7 conflicts of interest that may arise where
10:38 8 cryptocurrency exchanges that provide
10:38 9 oftentimes a variety of products to their
10:38 10 users are exercising discipline over those
10:38 11 that they are currently in business with in a
10:38 12 very deep way.

10:38 13 However, these are not concerns
10:38 14 that are particularly new to the
10:38 15 cryptocurrency marketplace. They have been
10:38 16 dealt with.

10:38 17 Also, in the context of
10:38 18 traditional exchanges like the New York Stock
10:38 19 Exchange and NASDAQ, there is extensive
10:38 20 literature, for example, on the conflicts of
10:38 21 interest that may apply in the case of the
10:38 22 NASDAQ and the New York Stock Exchange
10:38 23 exercising discipline over the folks that they
10:38 24 supervise.

10:38 25 And so what this paper goes on to

10:38 1 do is to propose and to think about potential
10:39 2 ways in which to make cryptocurrency exchanges
10:39 3 positive actors that can exercise discipline
10:39 4 and oversight and bring safety and integrity
10:39 5 to the marketplace as a whole, and provides a
10:39 6 series of ideas that can -- that might work to
10:39 7 enhance that going forward. So that is one
10:39 8 paper here.

10:39 9 In addition, I would -- I'm
10:39 10 looking at the application of international
10:39 11 standards as promulgated by the committee on
10:39 12 payment and settlement systems, the Basel
10:39 13 committee, looking at IOSCO, and seeing how
10:39 14 well these standards might apply in the
10:39 15 context of clearing and settlement exchanges,
10:39 16 as well as also the clearing and settlement
10:39 17 mechanisms that these exchanges deployed.

10:39 18 So in particular, what that
10:39 19 research will seek to examine is the ability
10:39 20 of clearing and settlement standards, for
10:39 21 example, to apply in the context of
10:40 22 cryptocurrency exchanges that internalize much
10:40 23 of the role of clearing and settlement within
10:40 24 their firm.

10:40 25 As you know in the traditional

10:40 1 context -- and this is detailed in this report
10:40 2 as well -- traditional exchanges tend to rely
10:40 3 on clearinghouses to perform -- and custodians
10:40 4 to perform a variety of risk management
10:40 5 functions.

10:40 6 In the context of clearing --
10:40 7 central clearing in the context of
10:40 8 cryptocurrency exchanges on the other hand,
10:40 9 many of these functions are internalized
10:40 10 generally by the cryptocurrency exchanges
10:40 11 themselves.

10:40 12 And what this paper and research
10:40 13 seeks to look at is whether the international
10:40 14 standards that we have existing in place for
10:40 15 cryptocurrency risk management for -- sorry.
10:40 16 I take that back.

10:40 17 The existing standards we have in
10:40 18 place for traditional service providers can
10:40 19 apply with equal force to cryptocurrency
10:40 20 clearing and settlement mechanisms. And I
10:40 21 argue, as I will argue in this paper, there
10:40 22 are some issues to think about that are
10:40 23 different and interesting.

10:41 24 In particular, the role of
10:41 25 storage and private keys is something to think

10:41 1 about that is new to the cryptocurrency
10:41 2 marketplace. How to safeguard those keys, how
10:41 3 to think about those keys, that's something
10:41 4 that is particularly important.

10:41 5 Data management, risk management,
10:41 6 collateral, cryptocurrency exchanges, and how
10:41 7 they should calibrate their levels of capital,
10:41 8 for example, to safeguard and maintain
10:41 9 credential safety for the marketplace as a
10:41 10 whole. So that is one project that is also
10:41 11 underway.

10:41 12 In addition, I have a couple of
10:41 13 projects that are looking at CBDCs. That's a
10:41 14 slightly different take here. I am looking at
10:41 15 Central Bank digital currencies, and
10:41 16 specifically on the role of privacy in the
10:41 17 context of Central Bank digital currencies.

10:41 18 That will be a coauthored
10:41 19 project, and that will examine how
10:41 20 programmable Central Bank digital currencies
10:41 21 operate within a privacy framework that we
10:41 22 have today, and how to potentially enhance the
10:41 23 privacy safeguards that we will have
10:42 24 potentially in the context of a CBDC.

10:42 25 Finally, a project that I am --

10:42 1 that I am planning to do that I am currently
10:42 2 researching the material for looks at how to
10:42 3 think about code in the context of a Central
10:42 4 Bank digital currency.

10:42 5 In particular, when we do have a
10:42 6 Central Bank digital currency that is
10:42 7 promulgated by our government, how should the
10:42 8 code underlying that currency be regulated?
10:42 9 What is the difference between a Central Bank
10:42 10 digital currency and the digital mechanisms
10:42 11 for payments that we deploy today?

10:42 12 If our government is providing a
10:42 13 programmable digital currency as might be
10:42 14 proposed, in that context, how should the
10:42 15 underlying code for that currency be thought
10:42 16 about?

10:42 17 What kind of safeguards should be
10:42 18 put in? What kind of potential fragilities
10:42 19 exist within a market space? For example, in
10:43 20 relation to cyber risks where much of our
10:43 21 monetary system is subject to an underlying
10:43 22 code.

10:43 23 So that gives you some flavor of
10:43 24 the current projects that I'm doing. And just
10:43 25 last week I was speaking to federal judges

10:43 1 from the fifth circuit bankruptcy -- from the
10:43 2 fifth circuit.

10:43 3 And I was discussing a potential
10:43 4 project in relation to the insolvency of
10:43 5 cryptocurrency exchanges and what kind of
10:43 6 procedures that might have to be put in place
10:43 7 to deal with the resolution of an exchange
10:43 8 where assets like cold storage of keys, for
10:43 9 example, may be very difficult to locate, take
10:43 10 possession of, and distribute within the
10:43 11 communities that judges are used to dealing
10:43 12 with. So, you know, that hopefully gives you
10:43 13 some idea of the current research that is
10:43 14 underway.

10:43 15 BY MS. STEWART:

10:43 16 Q. Thank you. That's helpful. Was
10:43 17 any of this current research that you spoke
10:43 18 about in your last answer underway at the time
10:44 19 you were retained as an expert in this case?

10:44 20 A. I had been working on a paper in
10:44 21 relation to the cryptocurrencies as SROs work.
10:44 22 In addition, I had had several conversations
10:44 23 as well as planned out my projects with
10:44 24 respect to Central Bank digital currencies.

10:44 25 Q. And that paper that you referred

10:44 1 to with respect to cryptocurrencies -- crypto
10:44 2 exchanges as SROs, do you know when that paper
10:44 3 will be published?

10:44 4 A. As an academic, I can't give you
10:44 5 a clear answer on that. I am working on it at
10:44 6 present.

10:44 7 Q. So in that same paragraph in your
10:45 8 report, paragraph 2, toward the end, you
10:45 9 state:

10:45 10 "My work also engages with
10:45 11 international developments in market
10:45 12 design to explore how foreign
10:45 13 jurisdictions organize their trading
10:45 14 markets, oversee innovation," et cetera.

10:45 15 Do you see that sentence?

10:45 16 A. I do, yes.

10:45 17 Q. What work are you referring to in
10:45 18 that sentence?

10:45 19 A. So, for example, I am -- I have
10:45 20 been a financial regulatory lawyer throughout
10:45 21 my career, essentially, in international
10:45 22 financial market standards.

10:45 23 That began at Clifford Chance
10:45 24 where I engaged very, very frequently with
10:45 25 international standards, for example, in

10:45 1 relation to banking, regulation in the Basel
10:45 2 standards, as well as numerous other
10:45 3 standards, for example, in relation to
10:45 4 clearing and settlement systems.

10:46 5 I was advising heavily at that
10:46 6 time in relation to these standards. And this
10:46 7 work obviously became much more directly
10:46 8 involved in financial standard setting from
10:46 9 the policy side when I joined the World Bank.

10:46 10 At the World Bank, much of my
10:46 11 work at the bank was focused on the
10:46 12 implementation of the Financial Stability
10:46 13 Board's international standards, notably in
10:46 14 relation to insolvency and creditor rights.

10:46 15 But as detailed in the CV, the
10:46 16 engagement at the bank also included thinking
10:46 17 about and discussing and engaging with the
10:46 18 other standards that the financial stability
10:46 19 board has promulgated.

10:46 20 So this was really the work that
10:46 21 I have grown up in. This is the work that I
10:46 22 have deep expertise in, in relation to the --
10:46 23 in relation to the crafting and implementation
10:46 24 and operationalizing of global international
10:46 25 standards within domestic spaces.

10:47 1 In terms of my research work,
10:47 2 this work has been reflected in a number of
10:47 3 papers as well as in my policy work. So, for
10:47 4 example, in the extraterritorial regulation of
10:47 5 clearinghouses, I explore the international
10:47 6 regulation of clearinghouses, how divergent
10:47 7 standards post Dodd-Frank have been dealt with
10:47 8 in the context of clearinghouses.

10:47 9 I have a paper in the Vanderbilt
10:47 10 Journal of Transnational -- in the Vanderbilt
10:47 11 Transnational Law Journal that speaks to the
10:47 12 international regulation of Fintech in the
10:47 13 context of our global financial stability
10:47 14 board standards.

10:47 15 In addition, I have engaged with
10:47 16 policy work that -- that is directly concerned
10:47 17 with the implementation of the G20's
10:47 18 Pittsburgh agenda into financial market
10:47 19 systems, and that was with the Atlanta council
10:47 20 where I focused on chapters in relation to
10:48 21 derivatives and clearinghouses.

10:48 22 And in addition, obviously, I
10:48 23 have worked with the -- I have been an
10:48 24 honorary advisor to the Indian Financial
10:48 25 Services Law Reform Commission, where I was

10:48 1 advising on the implementation of
10:48 2 international financial regulatory standards
10:48 3 into the domestic framework for the Indian
10:48 4 financial market and for their proposed
10:48 5 reforms that were underway at that time.

10:48 6 In addition, this international
10:48 7 standard setting work that you referenced is
10:48 8 something that has come up also in the context
10:48 9 of my policy work with the CFTC.

10:48 10 There in meetings with the CFTC,
10:48 11 I have discussed aspects of international
10:48 12 financial standards in the context of
10:48 13 discussions that were underway at the
10:48 14 technology advisory committee meetings that
10:48 15 were ongoing at that time.

10:48 16 Q. Turning now to paragraph 3 of
10:48 17 your report, and I want to look at the last
10:49 18 sentence of that paragraph where you say, sort
10:49 19 of, starting in the middle of the sentence:

10:49 20 "My research has focused on how
10:49 21 effectively international standards can
10:49 22 apply in this area and the implications
10:49 23 of divergent jurisdictional approaches
10:49 24 to the supervision of highly mobile and
10:49 25 geographically dispersed cross-border

10:49 1 technologies (e.g., cryptocurrencies)."

10:49 2 Do you see that?

10:49 3 A. I do, yes.

10:49 4 Q. Am I understanding correctly
10:49 5 that, based on the example you provide in that
10:49 6 sentence, that you believe that
10:49 7 cryptocurrencies are highly mobile and
10:49 8 geographically dispersed cross-border
10:49 9 technologies?

10:49 10 A. Cryptocurrencies can be mobile
10:49 11 and geographically dispersed technologies.

10:50 12 Q. And as you use it in your report,
10:50 13 what does the term "highly mobile" mean?

10:50 14 A. Cryptocurrencies can be traded on
10:50 15 a cross-border basis. They can be traded by
10:50 16 people who are moving between jurisdictions.
10:50 17 They can be traded on various blockchains that
10:50 18 are global in nature and whose nodes are
10:50 19 global in nature.

10:50 20 Q. And as you use it in your report,
10:50 21 what does "geographically dispersed" mean?

10:50 22 A. "Geographically dispersed" means
10:50 23 not confined necessarily to one country.

10:50 24 Q. And as you use it in your report,
10:50 25 what does "cross-border" mean?

10:50 1 A. Again, not confined to one
10:51 2 country but going between different countries.

10:51 3 Q. Turning to paragraph 4 of your
10:51 4 report, in the middle of the paragraph, you
10:51 5 say:

10:51 6 "My focus lies in determining
10:51 7 whether unique aspects about the design
10:51 8 and structure of cryptocurrency
10:51 9 exchanges will impact their capacity to
10:51 10 deliver robust oversight of the
10:51 11 marketplace and users."

10:51 12 Do you see that?

10:51 13 A. I do, yes.

10:51 14 Q. What "unique aspect" are you
10:51 15 referring to in that sentence?

10:51 16 A. So, for example, one unique
10:51 17 aspect of cryptocurrency design, exchange
10:51 18 design, is the fact that they tend to engage
10:52 19 in their own clearing and settlement and
10:52 20 custody of the assets being traded.

10:52 21 That is different and divergent
10:52 22 from current practices that traditional
10:52 23 exchanges deploy, and that has been referenced
10:52 24 in my report as well.

10:52 25 So current traditional exchanges

10:52 1 tend to rely on specialized clearinghouses,
10:52 2 for example, like Depository Trust and
10:52 3 Clearing Corporation or CME. The Chicago CME
10:52 4 clearing, Chicago Mercantile Exchange
10:52 5 Clearing, ICE clearing as well, they rely on
10:52 6 specialist clearinghouses to provide clearing
10:52 7 services as well as custody services for
10:52 8 assets.

10:52 9 Now, looking at cryptocurrency
10:52 10 exchanges by contrast, they tend to clear
10:52 11 in-house, meaning that they tend to -- they
10:52 12 tend to modify the books and records of their
10:53 13 exchange itself and modify user records to
10:53 14 reflect the trading and the gains of different
10:53 15 users on the exchange using an internal -- an
10:53 16 internal system of clearing -- pardon me, of
10:53 17 clearing in this regard.

10:53 18 That has several implications for
10:53 19 the ability of cryptocurrency exchanges to
10:53 20 deliver private oversight. Most notably, in
10:53 21 my paper, I argue that it can be a real
10:53 22 incentive for cryptocurrency exchanges to do a
10:53 23 good job in delivering cryptocurrency exchange
10:53 24 oversight.

10:53 25 And the reason for that is that

10:53 1 cryptocurrency exchanges are more centralized
10:53 2 than traditional marketplaces are, because
10:53 3 they are centralizing and internalizing this
10:53 4 clearing and settlement function.

10:53 5 So to just give you one example
10:53 6 that is a unique aspect of cryptocurrency
10:53 7 exchange design that is different from
10:53 8 traditional exchanges.

10:53 9 Nevertheless, as I've detailed
10:53 10 throughout this paper, opinion, as well as
10:54 11 discussed in my research paper, cryptocurrency
10:54 12 exchanges also harness a lot of similarities
10:54 13 with traditional exchanges like the New York
10:54 14 Stock Exchange, NASDAQ, CME, and others,
10:54 15 meaning that we really have to think deeply
10:54 16 about distinguishing features of
10:54 17 cryptocurrency exchanges to think about
10:54 18 potential ways in which they may be subject to
10:54 19 certain risks that are different from the
10:54 20 traditional risks that are -- that they're
10:54 21 subject to common to other types of exchanges
10:54 22 and marketplaces.

10:54 23 Q. Okay. Turning to paragraph 5 of
10:54 24 your report, and looking at the last sentence
10:54 25 where you say:

10:54 1 "For example, in discussing
10:54 2 cryptocurrencies, I seek to provide
10:54 3 students with an overview of the
10:54 4 computational principles that are
10:55 5 utilized in the creation of
10:55 6 cryptocurrencies like Bitcoin (e.g., to
10:55 7 explain the need for mining within its
10:55 8 decentralized blockchain)."

10:55 9 Do you see that?

10:55 10 A. I do, yes.

10:55 11 Q. And when you refer in this
10:55 12 sentence to "decentralized blockchain," what
10:55 13 do you mean by that?

10:55 14 A. I refer to traditional
10:55 15 blockchains in the context of Bitcoin and
10:55 16 Ethereum in particular. Those are the ones
10:55 17 that I focus on in my course.

10:55 18 Q. And what does the term
10:55 19 "decentralization" mean as applied to
10:55 20 blockchains?

10:55 21 A. So just in a general level, how I
10:55 22 teach it really references the use of multiple
10:55 23 different nodes within -- multiple different
10:55 24 nodes within the blockchain that don't
10:55 25 necessarily know each other.

10:56 1 Q. Are you offering an opinion in
10:56 2 this case about whether or not the bitcoin
10:56 3 blockchain is decentralized?

10:56 4 A. I am not.

10:56 5 Q. Do you have an opinion on whether
10:56 6 or not the bitcoin blockchain is
10:56 7 decentralized?

10:56 8 A. I do not.

10:56 9 Q. Are you offering an opinion about
10:56 10 whether or not the XRP ledger is
10:56 11 decentralized?

10:56 12 A. I am not.

10:56 13 Q. Do you have an opinion about
10:56 14 whether or not the XRP ledger is
10:56 15 decentralized?

10:56 16 A. I do not.

10:56 17 Q. Turning to paragraph 9 of your
10:57 18 report, you say:

10:57 19 "For example, in "The Broken Bond
10:57 20 Market" (with Professor Jonathan
10:57 21 Brogaard), I studied over-the-counter
10:57 22 bond market microstructure to develop an
10:57 23 understanding of why bond markets appear
10:57 24 to lack attributes like liquidity and
10:57 25 transparency."

10:57 1 Do you see that?

10:57 2 A. I do, yes.

10:57 3 Q. What is "liquidity" as you use it
10:57 4 in your report?

10:57 5 A. As I use it in my report or as I
10:57 6 use it in this paper?

10:57 7 Q. Well, as you use it in your
10:57 8 reference to this paper in your report.

10:57 9 A. Ah, okay. The liquidity that I'm
10:57 10 referencing in the broken bond market refers
10:57 11 to the ability of bonds to be able to trade in
10:57 12 a smooth manner where the trading is cheap,
10:58 13 where the trading is -- where there's
10:58 14 plentiful ability of market makers to enter
10:58 15 and exit and provide opportunities for
10:58 16 trading, and for the trading not to impact the
10:58 17 prices when investors potentially undertake a
10:58 18 large order.

10:58 19 So the liquidity that is detailed
10:58 20 and discussed in this paper is referencing the
10:58 21 inability of the bond market to create a
10:58 22 marketplace where investors can enter and exit
10:58 23 the bond market with ease, do so cheaply, and
10:58 24 do so in a way where their actions do not
10:58 25 necessarily impact prices in the market.

10:58 1 I should add that one of the
10:58 2 aspects that is important here is also the
10:58 3 ability of prices to be informative. So that
10:58 4 is a corollary of the liquidity that is
10:58 5 discussed in this paper.

10:59 6 Q. When you say "that is a corollary
10:59 7 of the liquidity discussed in this paper," can
10:59 8 you explain to me what you mean by that?

10:59 9 A. Certainly. What that means is
10:59 10 that the liquidity would encourage a broad
10:59 11 swath of traders to enter the market, would
10:59 12 afford informed, uniformed, other traders to
10:59 13 be part of the market. This is discussed as
10:59 14 part of my work in this opinion as well.

10:59 15 And it offers a way for
10:59 16 that -- the information that is contained in
10:59 17 that trading to then be reflected in the
10:59 18 prices at which the assets are being traded.

10:59 19 Q. And as you use it in your report
10:59 20 with respect to the paper that you're
10:59 21 referring to in paragraph 9, what does the
10:59 22 term "transparency" mean?

10:59 23 A. Part of the transparency that is
10:59 24 discussed here is in relation to pretrade
11:00 25 transparency in the bond market.

11:00 1 One of the unique features of our
11:00 2 bond market today, which is surprising, is
11:00 3 that it lacks, for the most part, pretrade
11:00 4 transparency, which means that the
11:00 5 infrastructure for trading in the market does
11:00 6 not advertise systematically the prices at
11:00 7 which the bonds are being offered by the
11:00 8 different dealers.

11:00 9 Dealers have a lot of discretion
11:00 10 in the prices that they quote in the
11:00 11 over-the-counter market for bond trading, and
11:00 12 what that means, essentially, is that there is
11:00 13 a lack of pretrade transparency in the bond
11:00 14 market that implies that investors entering
11:00 15 the market do not always know the prices at
11:00 16 which they are likely to execute the
11:00 17 transactions they are looking to get into.

11:00 18 Q. Are liquidity and transparency
11:01 19 important in cryptocurrency markets?

11:01 20 MS. ZORNBERG: Object to form.

11:01 21 A. That is a broad question.
11:01 22 Liquidity and transparency are aspects that
11:01 23 are arguably quite contentious, even in the
11:01 24 traditional market.

11:01 25 So in the context of the

11:01 1 traditional market, for example, transparency
11:01 2 is something that is not always provided by
11:01 3 the market, sometimes deliberately not
11:01 4 provided by the market.

11:01 5 So, for example, when one looks
11:01 6 at transparency, there is a lack of
11:01 7 transparency even in the equity market, which
11:01 8 is supposedly one of the most transparent
11:01 9 markets in our system today.

11:01 10 If one takes a look at dark
11:01 11 pools, for example, which are a part of our
11:01 12 equity market structure trading system, there
11:01 13 is a lack of pretrade transparency even on
11:01 14 those dark pools.

11:01 15 However, policy considers some of
11:02 16 this lack of transparency to be desirable in
11:02 17 order to afford investors a choice about how
11:02 18 they wish to execute their trades.

11:02 19 In addition, as we just
11:02 20 discussed, the treasury market lacks
11:02 21 transparency on multiple different measures,
11:02 22 and oftentimes that is by design, in order to
11:02 23 prevent potential systemic damage arising from
11:02 24 the trading of treasury.

11:02 25 So in asking about cryptocurrency

11:02 1 market, it's a very, very difficult question.
11:02 2 There is a lack of empirical study about the
11:02 3 trading structure in this market that could
11:02 4 give credible responses about some of the
11:02 5 aspects of transparency and liquidity that you
11:02 6 were discussing.

11:03 7 Q. As part of your work for the CFTC
11:03 8 technology advisory committee that you
11:03 9 referenced today, did you participate in any
11:03 10 discussions regarding Ripple or XRP?

11:03 11 A. Not that I can recall, no.

11:03 12 Q. As part of your work on that
11:03 13 committee, did you conduct any research or
11:03 14 analysis of Ripple or XRP?

11:03 15 A. Not that I can recall.

11:03 16 Q. Looking at paragraph 18 of your
11:03 17 report, you say: "I am being compensated at
11:03 18 my ordinary hourly rate of \$800 per hour."

11:03 19 Do you see that?

11:03 20 A. I do, yes.

11:03 21 Q. What do you mean by "ordinary
11:03 22 hourly rate"?

11:03 23 A. Just the normal rate.

11:03 24 Q. Okay. Have you charged that rate
11:04 25 for other engagements?

11:04 1 A. I have not, no.

11:04 2 Q. So what makes it ordinary?

11:04 3 MS. ZORNBERG: Objection. Object
11:04 4 to form.

11:04 5 A. It's just that -- it's just the
11:04 6 normal rate for me.

11:04 7 Q. Have you charged a different rate
11:04 8 for other engagements?

11:04 9 A. I have not had other engagements.

11:04 10 Q. Turning now to paragraph 19 of
11:04 11 your report, you say:

11:04 12 "I have been asked by counsel for
11:04 13 Ripple to offer an opinion on how offers
11:04 14 to buy and sell, and trades of,
11:04 15 cryptocurrencies are made on
11:04 16 cryptocurrency exchanges, the location
11:04 17 of those offers and trades, and the
11:04 18 location of various cryptocurrency
11:04 19 exchanges."

11:04 20 Do you see that?

11:04 21 A. I do, yes.

11:05 22 Q. Is this an accurate description
11:05 23 of the scope of your assignment in this
11:05 24 matter?

11:05 25 A. Yes, it is.

11:05 1 Q. As you use the terms in this
11:05 2 sentence and in your report, what are "offers
11:05 3 to buy and sell cryptocurrencies made on
11:05 4 cryptocurrency exchanges"?

11:05 5 A. I'm not sure -- I don't
11:05 6 understand the question.

11:05 7 Q. Can you explain to me what you
11:05 8 mean when you say "offers to buy and sell
11:05 9 cryptocurrencies on cryptocurrency exchanges"?

11:05 10 A. What I generally mean by that are
11:05 11 offers that are submitted into cryptocurrency
11:05 12 exchanges in order to buy and sell
11:06 13 cryptocurrencies on that exchange that are
11:06 14 then matched by the exchange and made final on
11:06 15 those exchanges.

11:06 16 Q. And as you use it in this
11:06 17 sentence we just read in paragraph 19 and
11:06 18 throughout your report, what are "trades of
11:06 19 cryptocurrencies made on cryptocurrency
11:06 20 exchanges"?

11:06 21 A. "Trades" references transactions
11:06 22 that are consummated. In other words, once an
11:06 23 offer to trade, meaning an offer to buy or
11:06 24 sell a cryptocurrency, is matched by the
11:06 25 exchange in accordance with its rules and

11:06 1 processes, that then becomes a consummated
11:06 2 transaction, in other words, a trade.

11:06 3 Q. As you use the term in your
11:06 4 report, does "offer" refer to a trade order?

11:07 5 A. An "offer" refers to an offer to
11:07 6 buy or sell a cryptocurrency.

11:07 7 Q. So as you use it in your report,
11:07 8 an "offer" does not refer to a trade order?

11:07 9 A. I don't know what you mean by
11:07 10 "trade order."

11:07 11 Q. You don't understand what the
11:07 12 term "trade order" means generally?

11:07 13 MS. ZORNBERG: Objection.

11:07 14 You can answer.

11:07 15 A. An order to trade? Yes. "Trade
11:07 16 order," that's not a term I'm -- that comes up
11:07 17 very often.

11:07 18 Q. What is an order to trade?

11:07 19 A. Meaning an order to buy or sell a
11:07 20 cryptocurrency on an exchange that is made in
11:07 21 accordance with the exchange's specific rules
11:07 22 and processes for submitting an order into
11:07 23 that exchange.

11:07 24 Q. So as you just defined the term
11:07 25 "order of trade," is that what you're

11:07 1 referring to when you use the word "offer" in
11:08 2 your report?

11:08 3 A. That's really broad. The -- you
11:08 4 know, I'd have to go through my whole report
11:08 5 for various uses here. Certainly in the
11:08 6 scope, the order that I'm referring is the
11:08 7 order to buy and sell a cryptocurrency.

11:08 8 Q. As you use it in paragraph 19,
11:08 9 would it be accurate to say that "the offer to
11:08 10 buy and sell a cryptocurrency" refers to an
11:08 11 order of trade to buy or sell a
11:08 12 cryptocurrency?

11:08 13 A. Refers to an order to buy and
11:08 14 sell a cryptocurrency on an exchange made in
11:08 15 accordance with the rules and processes of
11:08 16 that exchange.

11:08 17 Q. Is your opinion in this case
11:08 18 limited to offers and trades of
11:09 19 cryptocurrencies on cryptocurrency exchanges?

11:09 20 MS. ZORNBERG: Object to form.

11:09 21 You can answer.

11:09 22 A. Yes, it is.

11:09 23 Q. In your opinion, is it possible
11:09 24 for an offer for a cryptocurrency on an
11:09 25 exchange to occur at a different place than

11:09 1 the trade for that cryptocurrency?

11:09 2 A. Could you repeat the question,
11:09 3 please.

11:09 4 Q. In your opinion, is it possible
11:09 5 for an offer for a cryptocurrency on an
11:09 6 exchange to occur at a different place than
11:09 7 the trade for that cryptocurrency?

11:09 8 A. No. In my opinion, an offer that
11:09 9 is made to trade a cryptocurrency, in other
11:09 10 words, an offer that is made to buy or sell a
11:09 11 cryptocurrency is made on that exchange in
11:09 12 accordance with the rules and processes of
11:09 13 that exchange.

11:09 14 It is then matched by that
11:10 15 exchange in accordance with its rules and
11:10 16 processes, and it becomes final on that
11:10 17 exchange in accordance with its rules and
11:10 18 processes.

11:10 19 Q. So would you agree that an offer
11:10 20 for a cryptocurrency on an exchange is
11:10 21 transmitted to the exchange from the place the
11:10 22 person making the offer is located?

11:10 23 MS. ZORNBERG: Object to form.

11:10 24 A. No. The exchange receives the
11:10 25 order in accordance with its own order

11:10 1 submission mechanisms. How that is
11:10 2 transmitted is not particularly relevant or
11:10 3 germane or always known to the exchange.

11:10 4 Q. Putting aside whether it's
11:10 5 relevant or germane or known to the exchange,
11:11 6 is it fair to say that an offer for
11:11 7 cryptocurrency is transmitted to the exchange
11:11 8 from the place that the person making that
11:11 9 offer is located at the time he or she makes
11:11 10 that offer?

11:11 11 MS. ZORNBERG: Object to form.

11:11 12 A. It's very broad. The offer to
11:11 13 buy or sell a cryptocurrency is made in
11:11 14 accordance with the exchange's own order
11:11 15 submission system.

11:11 16 Q. So you can't answer my question
11:11 17 about whether an offer is transmitted from the
11:11 18 place of the person transmitting the offer is
11:11 19 located?

11:11 20 A. The order takes on a form only
11:11 21 under the rules and processes of the exchange
11:11 22 itself. In other words, an order becomes an
11:11 23 order only when it enters the submission
11:11 24 system that the exchange deploys in order to
11:11 25 vet incoming instructions, to take those

11:11 1 instructions, to make them into viable orders
11:12 2 to buy and sell a cryptocurrency. That order
11:12 3 only becomes an order in accordance with the
11:12 4 rules and processes of the exchange itself.

11:12 5 Q. Looking at paragraph 20 of your
11:12 6 report, you say:

11:12 7 "I also requested, reviewed, and
11:12 8 considered additional materials,
11:12 9 information, and documents."

11:12 10 Do you see that sentence?

11:12 11 A. I do, yeah.

11:12 12 Q. Is all of the material that you
11:12 13 requested, reviewed, and considered reflected
11:12 14 either in Exhibit B to your report or in the
11:12 15 footnotes to your report?

11:12 16 A. Yes. Although, as you can see,
11:13 17 I've also relied on my, sort of, general
11:13 18 academic knowledge as well as my own
11:13 19 professional experience and judgment.

11:13 20 Q. Who did you request materials
11:13 21 from?

11:13 22 MS. ZORNBERG: Objection. Asked
11:13 23 and answered.

11:13 24 You can answer again but without
11:13 25 disclosing the substance of

11:13 1 communications with counsel.

11:13 2 A. I requested material from
11:13 3 counsel.

11:13 4 Q. Anyone other than counsel?

11:13 5 A. No.

11:13 6 Q. Without getting into the
11:13 7 specifics, did counsel supply any facts that
11:13 8 you considered in forming your opinions?

11:13 9 A. No.

11:13 10 Q. Did counsel supply any data that
11:13 11 you considered in forming your opinion?

11:14 12 MS. ZORNBERG: Object to form.

11:14 13 A. The only thing I received from
11:14 14 counsel was in relation to the Table A
11:14 15 exchanges and that's it.

11:14 16 Q. Did counsel supply any
11:14 17 assumptions that you relied on in forming your
11:14 18 opinions?

11:14 19 A. No, they did not.

11:14 20 Q. So I want to turn now to Exhibit
11:14 21 B of your report.

11:14 22 MS. ZORNBERG: I don't know,
11:14 23 Ms. Stewart, if -- we're coming up on
11:14 24 another hour. Just at some point, I'd
11:14 25 be interested in taking a five-minute

11:14 1 break.

11:14 2 MS. STEWART: Sure. Now is fine.

11:14 3 THE VIDEOGRAPHER: The time now
11:14 4 is 11:14 a.m. This concludes Media 2.
11:14 5 Off the record.

11:41 6 (Recess taken from 11:14 a.m. to
11:41 7 11:40 a.m.)

11:41 8 THE VIDEOGRAPHER: The time now
11:41 9 is 11:40 a.m. This begins Media 3. On
11:41 10 the record.

11:41 11 EXAMINATION BY

11:41 12 MR. SYLVESTER:

11:41 13 Q. Professor, you testified earlier
11:41 14 today that you were generally aware that XRP
11:41 15 was traded on digital asset platforms prior to
11:41 16 your retention as an expert witness in this
11:41 17 case. Correct?

11:41 18 A. That's correct.

11:41 19 Q. Okay. Again, prior to your
11:41 20 retention as an expert witness, what, if
11:41 21 anything, was your understanding about any
11:41 22 link between XRP's role in facilitating
11:41 23 international payment transactions and its
11:41 24 trading on digital asset platforms?

11:41 25 A. I didn't have any particular

11:41 1 knowledge in that regard.

11:41 2 Q. Did you know whether the trading
11:41 3 and the facilitation of international payment
11:41 4 transactions were linked in any way?

11:41 5 A. I'm sorry, could you repeat the
11:41 6 question.

11:41 7 Q. Sure. Did you know whether XRP's
11:41 8 trading on digit asset trading platforms and
11:41 9 its use in facilitating international payment
11:42 10 transactions were linked in any way?

11:42 11 A. No, I --

11:42 12 MS. ZORNBERG: Object to form.

11:42 13 A. I had no real knowledge in that
11:42 14 regard.

11:42 15 Q. Okay. Can we turn to Table A of
11:42 16 your report, please.

11:42 17 A. Sure.

11:42 18 Q. It's on page 59. Earlier today
11:42 19 we discussed that you asked counsel to do
11:42 20 research into certain digital asset trading
11:42 21 platforms. Is that correct?

11:42 22 A. I asked counsel to help me do
11:42 23 research on the exchanges set out in Table A.

11:42 24 Q. Okay. And are the results of
11:42 25 counsel's research reflected in Table A?

11:42 1 MS. ZORNBERG: Objection.

11:42 2 First of all, I think it's -- I
11:43 3 think you're asking about -- I'm
11:43 4 going --

11:43 5 Professor Yadav, you can answer
11:43 6 without disclosing conversations with
11:43 7 counsel.

11:43 8 I also just object to the form.

11:43 9 A. Counsel helped me do research.
11:43 10 The research that is reflected in Table A
11:43 11 reflects counsel's help as well as, obviously,
11:43 12 my research and my review and consideration of
11:43 13 the work provided to me by counsel.

11:43 14 Q. After receiving the research that
11:43 15 counsel conducted related to what is presently
11:43 16 displayed in Table A, what changes, if any,
11:43 17 did you make to that information that you
11:43 18 received from counsel?

11:43 19 MS. ZORNBERG: Objection.

11:43 20 Assumes facts not in evidence. Lack of
11:44 21 foundation.

11:44 22 Q. You can answer if you can.

11:44 23 A. Could you repeat the question.

11:44 24 MR. SYLVESTER: Could you read
11:44 25 her that back, madam court reporter.

11:44 1 (Record read by the certified
2 stenographer as follows:
3 "QUESTION: After receiving the
4 research that counsel conducted related
5 to what is presently displayed in Table
6 A, what changes, if any, did you make to
7 that information that you received from
11:44 8 counsel?")
11:44 9 MS. ZORNBERG: Same objection.
11:44 10 You can answer.
11:44 11 A. It's very hard to recall specific
11:44 12 changes here.
11:44 13 Q. Sitting here today, can you
11:44 14 recall whether you made any changes?
11:44 15 A. I would imagine I did, yes.
11:44 16 Sitting here today, I would imagine so.
11:44 17 Q. To make sure I understand your
11:44 18 answer, drawing a distinction between having a
11:45 19 recollection and assuming you might have, do
11:45 20 you have a recollection that you made changes?
11:45 21 A. I have a recollection that I made
11:45 22 changes.
11:45 23 Q. Okay.
11:45 24 A. I can't say which ones.
11:45 25 Q. Let's take a look at Exhibit B to

11:45 1 your report.

11:45 2 With respect to the Bates-stamped
11:45 3 materials beginning on page 3, did you request
11:45 4 any of these documents from counsel?

11:45 5 A. I'm sorry, which materials are
11:45 6 you referring to?

11:45 7 Q. There's a subheading on page 3 of
11:45 8 Exhibit B that's entitled "Bates-stamped
11:45 9 materials."

11:45 10 Do you see that?

11:45 11 A. "Bates-stamped materials"?

11:46 12 Q. Yes. So my question was whether
11:46 13 you requested from counsel any of the
11:46 14 documents that are listed under the subheading
11:46 15 "Bates-stamped materials."

11:46 16 A. I requested "Terms of Use"
11:46 17 certainly, yes.

11:46 18 Q. How about the documents ending
11:46 19 with the Bates-stamped digits and prior to the
11:46 20 digits RFA that are listed on page 6?

11:46 21 A. I'm sorry. I don't --

11:46 22 MS. ZORNBERG: Object to form.

11:46 23 A. I'm so sorry. I can't find the
11:47 24 material you're referencing on page 6.

11:47 25 Q. So do you see on the top of page

11:47 1 6, there's a number of bullets?

11:47 2 A. Yes.

11:47 3 Q. Okay. And do you see how the --
11:47 4 my understanding is that after each bullet is
11:47 5 a reference to a document by Bates stamp. Is
11:47 6 that correct?

11:47 7 MS. ZORNBERG: Object to form.

11:47 8 Q. Do you need me to clarify?

11:47 9 A. Yes, please. Because I'm not
11:47 10 sure I'm looking at the same thing.

11:47 11 Q. I'm on Exhibit B, "Materials
11:47 12 Considered and Relied Upon," and page 6 of
11:47 13 Exhibit B.

11:47 14 A. I'm on page 6.

11:47 15 Q. Okay. And at the top of page 6,
11:47 16 are you looking at a series of approximately
11:47 17 ten bullets?

11:48 18 A. 11.

11:48 19 Q. Okay. And do each of those
11:48 20 bullets end with a digit?

11:48 21 A. They do.

11:48 22 Q. And at the prior -- strike that.
11:48 23 Prior to the digits, do you see
11:48 24 the letters RFA for each of those bullets?

11:48 25 A. I do.

11:48 1 Q. Okay. Do you understand each of
11:48 2 those bullets to be a reference to a document?

11:48 3 A. I do.

11:48 4 Q. Okay. Did you request the
11:48 5 documents referenced by those bullets at the
11:48 6 top of page 6?

11:48 7 A. I really --

11:48 8 MS. ZORNBERG: Objection.

11:48 9 A. I can't recall. I'm sorry.

11:48 10 Q. Did you review each of the
11:48 11 documents that are listed in Exhibit B?

11:48 12 A. As far as I can recall, I
11:48 13 reviewed the documents listed in Exhibit B.

11:48 14 Q. Turning to page 8 of your Exhibit
11:49 15 B, do you see where it says "Statutes and
11:49 16 Regulations"?

11:49 17 A. Yes, I do.

11:49 18 Q. And under Statutes and
11:49 19 Regulations, there is one statute and one
11:49 20 regulation listed. Do you see that?

11:49 21 A. Yes, I do.

11:49 22 Q. How did those -- strike that.
11:49 23 How did that statute and that
11:49 24 regulation inform your opinions in this case?

11:49 25 A. This was, I believe, a general

11:49 1 reference to the role played by traditional
11:49 2 exchanges as overseers of marketplaces in the
11:49 3 report.

11:49 4 Q. Did you consider Section 5 of the
11:49 5 Securities Act of 1933 as part of your
11:49 6 opinion?

11:49 7 A. I did not. I'm not here to give
11:49 8 a legal opinion. I'm here as a market
11:49 9 structure expert.

11:49 10 Q. Are you offering any opinion
11:49 11 regarding whether or not defendants violated
11:49 12 Section 5 as part of the conduct at issue in
11:50 13 this matter?

11:50 14 A. I am not.

11:50 15 Q. Did you consider any case law as
11:50 16 part of your opinion?

11:50 17 A. I don't believe I did.

11:50 18 Q. Are you familiar with the United
11:50 19 States Supreme Court's United States versus
11:50 20 Morrison decision?

11:50 21 A. I'm not here as a legal expert.
11:50 22 I am here as a expert in market structure and
11:50 23 would prefer to talk about market structure.

11:50 24 Q. Be that as it may, are you
11:50 25 familiar with that decision?

11:50 1 A. I am, yes.

11:50 2 Q. Are you offering an opinion on
11:50 3 whether the supreme court's holding in United
11:50 4 States versus Morrison applies to the conduct
11:50 5 at issue in this case?

11:50 6 A. I'm not offering an opinion.

11:50 7 Q. Okay. Does the opinion in United
11:50 8 States versus Morrison inform your opinion at
11:50 9 all in this case?

11:50 10 MS. ZORNBERG: Objection.

11:50 11 A. No, it does not.

11:50 12 Q. Are you offering an opinion as to
11:50 13 whether the supreme court's holding in United
11:50 14 States versus Morrison extends to Section 5 of
11:50 15 the Securities Act?

11:50 16 A. I'm not offering that opinion.

11:51 17 Q. Are you offering any opinion on
11:51 18 the efficiency of the XRP market?

11:51 19 A. No.

11:51 20 MS. ZORNBERG: Object to form.

11:51 21 A. No.

11:51 22 Q. Do you understand the question
11:51 23 that I just asked?

11:51 24 A. I believe so.

11:51 25 Q. Okay. Let's turn to paragraph 32

11:51 1 of your report, please. That's on page 17.

11:51 2 The second sentence says:

11:51 3 "To operationalize trading,
11:51 4 cryptocurrency exchanges utilize key
11:51 5 conventions that have long been relied
11:51 6 on by traditional venues to enable order
11:51 7 submission, matching, trade execution,
11:51 8 and information dissemination."

11:52 9 Do you see that?

11:52 10 MS. ZORNBERG: Mark, if you could
11:52 11 just slow down a little in your
11:52 12 questioning, I'd appreciate it.

11:52 13 MR. SYLVESTER: Sure.

11:52 14 A. I'm sorry. Which paragraph are
11:52 15 you referring to?

11:52 16 Q. It's paragraph 32 and I just read
11:52 17 into the record the second sentence.

11:52 18 A. Paragraph 32. Okay. Sorry.

11:52 19 Q. My question is: Which key
11:53 20 conventions are you referring to in that
11:53 21 sentence?

11:53 22 A. As described in detail in the
11:53 23 report, there are a number. For example, in
11:53 24 relation to order submission, order matching,
11:53 25 the kind of central limit order book

11:53 1 convention that is deployed in cryptocurrency
11:53 2 exchanges to match transactions and conclude
11:53 3 them and finalize them, for example.

11:53 4 Q. How did you determine that crypto
11:53 5 exchanges utilized the key conventions you
11:53 6 just listed?

11:53 7 A. This was based off of my own
11:53 8 research as well as through the review of the
11:53 9 terms of service of the exchanges, 24 of the
11:53 10 exchanges set out in Table A.

11:53 11 Q. When you say your "own research,"
11:54 12 are you referring to research you conducted in
11:54 13 preparing your expert opinion or different
11:54 14 research?

11:54 15 A. My general research into market
11:54 16 structure as well as the general research I do
11:54 17 into cryptocurrency markets as part of my
11:54 18 work.

11:54 19 Q. Is the research that you just
11:54 20 described research that you conducted separate
11:54 21 from forming your opinion in this case?

11:54 22 A. The research that I have relied
11:54 23 on is set out in the footnotes to this
11:54 24 opinion.

11:54 25 Q. Turning to paragraph 33, about

11:54 1 midway through the paragraph, you write:

11:54 2 "Instead, the exchange's 'floor'
11:54 3 is more accurately seen as a function of
11:54 4 its internal computerized matching
11:54 5 engines."

11:54 6 Do you see that?

11:54 7 A. I do, yes.

11:54 8 Q. Why is it -- strike that.

11:54 9 What properties of a trading
11:54 10 floor are now reflected with respect to
11:55 11 cryptocurrency exchanges in internalized
11:55 12 computerized matching engines?

11:55 13 MS. ZORNBERG: Object to form.

11:55 14 A. This paragraph references
11:55 15 traditional financial markets, as in
11:55 16 traditional financial exchanges and not
11:55 17 necessarily crypto exchanges.

11:55 18 However, the "floor," as it's
11:55 19 referenced here, means the order submission,
11:55 20 order matching, and finalizing is done in an
11:55 21 electronic and dematerialized way.

11:55 22 Q. And is the description of the
11:55 23 floor that you just gave with respect to
11:55 24 traditional exchanges also true of
11:55 25 cryptocurrency exchanges?

11:55 1 A. As set out in my opinion,
11:55 2 cryptocurrency exchanges deeply borrow the
11:55 3 order submission, matching, finalizing
11:55 4 conventions from traditional marketplaces,
11:55 5 yes.

11:55 6 Q. What is an internal computerized
11:56 7 matching engine?

11:56 8 A. An internal computerized matching
11:56 9 engine references the matching protocols used
11:56 10 by the exchange that take incoming orders and
11:56 11 match them in accordance with preset rules to
11:56 12 finalize a trade on the exchange.

11:56 13 Q. Can you explain what you mean by
11:56 14 the word "protocols"?

11:56 15 A. A protocol references the
11:56 16 algorithms, essentially, that are programmed
11:56 17 to deploy a certain matching convention. For
11:56 18 example, many central limit order books that
11:56 19 matching engines use, use a price-time
11:56 20 priority convention, which is referenced and
11:56 21 detailed in the report.

11:56 22 Q. When you say "algorithms," are
11:56 23 you referencing a computer software?

11:56 24 MS. ZORNBERG: Object to form.

11:56 25 A. It's a broad question. I'm not

11:56 1 an computer expert. Based off my own
11:57 2 knowledge and research into the area, what I'm
11:57 3 referencing are essentially preprogrammed
11:57 4 computerized sequences that reflect a certain
11:57 5 protocol to match incoming orders.

11:57 6 Q. I guess what I'm getting at is:
11:57 7 This matching is done by a computer, not by a
11:57 8 person receiving the order. Is that fair?

11:57 9 A. In electronic exchanges, the
11:57 10 matching is done automatically by algorithms
11:57 11 that receive the orders.

11:57 12 Q. Computerized algorithms?

11:57 13 A. Algorithms are computerized, yes.

11:57 14 Q. The very last sentence of
11:57 15 paragraph 33, you state:

11:57 16 "In this way, the 'floor' or
11:57 17 'pit' is now very much electronic and
11:57 18 essentially dematerialized."

11:58 19 Do you see that?

11:58 20 A. I do, yes.

11:58 21 Q. What does "essentially
11:58 22 dematerialized" mean?

11:58 23 A. Means it's essentially
11:58 24 electronic.

11:58 25 Q. Going back to an internal

11:58 1 computerized matching engine, where is an
11:58 2 exchange's computerized matching engine
11:58 3 typically located?

11:58 4 A. Depends on the exchange.

11:58 5 Q. Can you give me one example?

11:58 6 A. It's very hard to describe
11:58 7 exactly and answer the question exactly as you
11:58 8 state it. The matching engines of an exchange
11:58 9 reflect a number of its roles and processes
11:58 10 which can't necessarily be confined to a
11:58 11 computer.

11:58 12 Q. Can you say more about how they
11:59 13 can't be confined to a computer?

11:59 14 A. For example, when you have the
11:59 15 central limit order book of an exchange, it
11:59 16 reflects the various rules and processes that
11:59 17 an exchange puts in place to make sure that
11:59 18 that central limit order book has actual
11:59 19 meaning. In other words, when trades come in,
11:59 20 they become binding.

11:59 21 Q. And in your view, are those
11:59 22 various rules and processes in a different
11:59 23 location than the internal computerized
11:59 24 matching engine?

11:59 25 MS. ZORNBERG: Object to form.

11:59 1 You can answer.

11:59 2 A. Those rules and processes are a
11:59 3 function of the exchange itself, wherever that
11:59 4 exchange is located.

11:59 5 Q. Are the rules and processes
11:59 6 themselves computer programs?

11:59 7 A. Not necessarily, no.

11:59 8 Q. Okay. So I want to go back to
11:59 9 where an exchange's matching engine is
11:59 10 located.

12:00 11 In your view, is -- does that
12:00 12 matching take place on the exchange's servers?

12:00 13 A. Part of it may -- part of it will
12:00 14 take place -- there'll be a server involved
12:00 15 somewhere. However, the matching process is
12:00 16 much more than an interaction on a server.

12:00 17 It reflects the rules and
12:00 18 processes that give that order form, that give
12:00 19 that matching actual content, which means that
12:00 20 that bargain becomes binding and the exchange
12:00 21 moves forward to enforce that binding bargain
12:00 22 in accordance with its rules and processes.

12:00 23 Q. Okay. So part of the matching
12:00 24 takes place on a server. Is that right?

12:00 25 A. I'm not a computer expert. I'm

12:00 1 not here to provide a expert -- expertise in
12:00 2 relation to computer science. Some part of
12:00 3 that mechanical aspect of the matching may
12:00 4 take place on a server somewhere.

12:00 5 Q. The mechanical aspect is exactly
12:00 6 what I'm getting at, and you're free to draw
12:00 7 any lines around your expert opinion. But I
12:01 8 want to tease out what your opinions are about
12:01 9 that. So --

12:01 10 MS. BUNTING: Objection.

12:01 11 Q. So is the -- what part of the
12:01 12 matching process takes place on the server?

12:01 13 A. Again, I'm --

12:01 14 MS. ZORNBERG: Objection.

12:01 15 Just -- objection. Asked and answered.
12:01 16 You can answer again.

12:01 17 A. I would dispute the contention
12:01 18 that the matching that takes place is anything
12:01 19 other than the interaction of one byte,
12:01 20 b-y-t-e, as it were, with another.

12:01 21 The actual matching, as it were,
12:01 22 is undertaken in accordance with the
12:01 23 exchange's preset rules, the central limit
12:01 24 order book, as well as its system of
12:01 25 governance that gives that matching form and

12:01 1 binding quality.

12:01 2 Q. Does that interaction between two
12:01 3 bytes take place in any particular geographic
12:01 4 location, in your view?

12:01 5 MS. ZORNBERG: Object to the
12:01 6 form.

12:01 7 A. I have really no response to
12:02 8 that. I don't know.

12:02 9 Q. Is that interaction of bytes that
12:02 10 you just described necessary in order to
12:02 11 complete a trade on a cryptocurrency exchange?

12:02 12 A. It is necessary but not
12:02 13 sufficient.

12:02 14 Q. What else is needed?

12:02 15 A. What else -- as detailed in the
12:02 16 report and as set out in my prior answer, what
12:02 17 is needed here is the rules and processes of
12:02 18 an exchange that ensure that matching has
12:02 19 formed, that ensure that the matching follows
12:02 20 a certain convention such as a price-time
12:02 21 priority model, that the exchange then honors
12:02 22 that bargain and forces that bargain as
12:02 23 between the parties concerned.

12:02 24 Q. Geographically, where are the
12:02 25 rules and processes of an exchange located?

12:02 1 A. On the exchange.

12:03 2 Q. When you say "on the exchange,"
12:03 3 can you be more specific?

12:03 4 MS. ZORNBERG: Objection.

12:03 5 A. In my opinion, those rules and
12:03 6 processes are located where the exchange is
12:03 7 located.

12:03 8 Q. And when we're discussing rules
12:03 9 and processes, are we thinking about a paper
12:03 10 document, are we thinking about a computer
12:03 11 program? Can you tell me how the rules and
12:03 12 processes are embodied in the world?

12:03 13 MS. ZORNBERG: Objection.

12:03 14 A. The way I understand it, those
12:03 15 rules and processes are embodied as part of
12:03 16 the exchange's institution and its governance
12:03 17 processes, its internal governance, its rule
12:03 18 book that sets out the rules for parties to
12:03 19 follow.

12:03 20 And that ensures those rules
12:03 21 become binding in accordance with the party's
12:03 22 agreement to those rules, which includes the
12:03 23 order submission, order binding, and order
12:04 24 finalization processes.

12:04 25 Q. Is that rule book a material,

12:04 1 physical rule book, like, a physical book? Or
12:04 2 is it something else?

12:04 3 A. That's very broad. It depends on
12:04 4 the exchange.

12:04 5 Q. Sitting here today, do you know
12:04 6 of any exchanges where the rule book takes the
12:04 7 form of an actual physical book?

12:04 8 A. I really can't speak to every
12:04 9 particular exchange and how they document
12:04 10 their rule book. The way in which that rule
12:04 11 book is documented can vary.

12:04 12 Q. Understanding that, I'm just
12:04 13 asking if you can think of any example within
12:04 14 your knowledge where the rule book that you
12:04 15 referenced in your earlier testimony takes the
12:04 16 form of an actual physical book.

12:04 17 A. I'm sure there's a physical book
12:04 18 for most exchanges. For example, the CME, as
12:04 19 detailed here, has a rule book. That rule
12:04 20 book is very thick, deep. You can find it
12:05 21 online. And I imagine the CME keeps a hard
12:05 22 copy for those members that need it.

12:05 23 Q. Now, focusing just on
12:05 24 cryptocurrency exchanges, are you aware of any
12:05 25 cryptocurrency exchanges where the rule book

12:05 1 that you referenced in your earlier testimony
12:05 2 is also actually a physical book?

12:05 3 A. You know, cryptocurrency
12:05 4 exchanges, as set out in this report,
12:05 5 stipulate various terms and conditions with
12:05 6 their members, which are highlighted here,
12:05 7 that require consent by those trading on the
12:05 8 exchange to consent to the rules of the
12:05 9 exchange.

12:05 10 If that's done in paper form,
12:05 11 perhaps that's the case. I don't know.

12:05 12 Q. And sitting here today, you're
12:05 13 not sure one way or the other whether those
12:05 14 rule books that you just described are or are
12:05 15 not in paper form. Is that right?

12:05 16 MS. ZORNBERG: Object to form.

12:05 17 A. I really don't understand the
12:05 18 thrust of the question. In other words, it's
12:05 19 perfectly possible to print a document and put
12:06 20 it in paper form.

12:06 21 Q. Right. I'm trying to understand
12:06 22 in your view where physically in the world all
12:06 23 components of a trade take place. And one --

12:06 24 MS. ZORNBERG: Objection. Sorry.

12:06 25 Q. -- one of the items you listed

12:06 1 that's necessary for completion of a trade is
12:06 2 a rule book. Is that right?

12:06 3 MS. ZORNBERG: Object to form.

12:06 4 A. One of them, yes.

12:06 5 Q. And so the reason why I'm asking
12:06 6 is -- is it in physical form is because if it
12:06 7 was in physical form, we could determine its
12:06 8 physical location in the world. Right?

12:06 9 MS. ZORNBERG: Objection.

12:06 10 A. Perhaps, yeah.

12:06 11 Q. So are you aware of
12:06 12 cryptocurrency exchanges keeping a rule book
12:06 13 in a physical form?

12:06 14 A. I imagine they might.

12:06 15 Q. Setting aside whether they might,
12:06 16 are you aware that they do?

12:06 17 MS. ZORNBERG: Object to form.

12:06 18 A. I really can't speak to whether
12:06 19 they do or not. I've not examined the -- I've
12:06 20 not -- gone into a cryptocurrency exchange to
12:07 21 examine whether they keep their paper rule
12:07 22 book or not.

12:07 23 Q. Once a trade has happened on a
12:07 24 cryptocurrency exchange, is it recorded
12:07 25 somewhere?

12:07 1 A. Yes.

12:07 2 Q. Where?

12:07 3 A. On the internal books and records
12:07 4 of the exchange.

12:07 5 Q. Where are those located for
12:07 6 cryptocurrency exchanges?

12:07 7 A. In my opinion, they are located
12:07 8 at the exchange.

12:07 9 Q. Are the internal books and
12:07 10 records of the -- of cryptocurrency exchanges
12:07 11 kept in paper format typically?

12:07 12 A. I don't know. I imagine there's
12:07 13 a digital and paper record potentially.

12:07 14 Q. Setting aside what you imagine
12:07 15 and just focusing on what you know for sure,
12:07 16 do cryptocurrency exchanges keep their books
12:08 17 and records on which they record trades in
12:08 18 physical paper format?

12:08 19 MS. ZORNBERG: Object to form.

12:08 20 A. I would imagine it would be very
12:08 21 useful for cryptocurrency exchanges to keep
12:08 22 books and records in paper form.

12:08 23 Q. And I just want to follow up
12:08 24 because you've used the word "imagine" twice
12:08 25 now. And I appreciate your answer, but I want

12:08 1 to just --

12:08 2 A. Sure.

12:08 3 Q. -- carve out what you imagine and
12:08 4 focus just on what you know.

12:08 5 So do you know one way or the
12:08 6 other whether cryptocurrency exchanges keep
12:08 7 the records of completed trades in paper form?

12:08 8 MS. BUNTING: Objection.

12:08 9 A. I think for exchanges it is
12:08 10 extremely advisable, like it is for
12:08 11 traditional exchanges, to keep books and
12:08 12 records in paper form. And some --

12:08 13 Q. Go ahead. I'm sorry. Please
12:08 14 finish.

12:08 15 A. No, that's it.

12:08 16 Q. So you've said it's advisable,
12:08 17 but that doesn't tell me whether or not they
12:09 18 actually do it.

12:09 19 So could you let me know whether
12:09 20 or not you know whether cryptocurrency
12:09 21 exchanges keep their records of trades in
12:09 22 paper form?

12:09 23 MS. ZORNBERG: Object to form.

12:09 24 Asked and answered.

12:09 25 You can answer.

12:09 1 A. For example, in the case of
12:09 2 traditional exchanges, rules pertaining to
12:09 3 that exchange itself require the keeping of
12:09 4 paper records in order to maintain the
12:09 5 integrity of paper records. And that's set
12:09 6 out in my report.

12:09 7 I would imagine that
12:09 8 cryptocurrency exchanges may be subject or
12:09 9 would think it would be advisable to do a
12:09 10 similar thing.

12:09 11 Q. Are you aware of any such rules
12:09 12 governing cryptocurrency exchanges?

12:09 13 MS. BUNTING: Objection.

12:09 14 A. As I sit here today, I'm not
12:09 15 aware of any rules, however there certainly
12:09 16 may be, as the regulatory rules here are
12:09 17 developing.

12:09 18 Q. And setting aside what any rules
12:09 19 governing cryptocurrency exchanges might
12:09 20 require, are you aware of any cryptocurrency
12:10 21 exchanges that keep their trading records in
12:10 22 paper form?

12:10 23 MS. ZORNBERG: Object to form.

12:10 24 A. In my opinion, it would be
12:10 25 important for cryptocurrency exchanges to keep

12:10 1 records in paper form, owing to potential
12:10 2 disruptions, damage, that may occur to digital
12:10 3 formats.

12:10 4 Q. Professor, with all due respect,
12:10 5 I understand your opinion that it would be
12:10 6 important for them to do so. But I'm trying
12:10 7 to focus on what it is that you know as to
12:10 8 what they actually do.

12:10 9 So do you know one way or the
12:10 10 other whether cryptocurrency exchanges keep
12:10 11 their trading records in paper form?

12:10 12 MS. ZORNBERG: Objection. Asked
12:10 13 and answered.

12:10 14 You can answer.

12:10 15 A. I can't speak to every
12:10 16 cryptocurrency exchange as to how they keep
12:10 17 their books and records.

12:10 18 Q. Are you aware of any
12:10 19 cryptocurrency exchange that keeps its records
12:10 20 in paper form?

12:10 21 A. I would be shocked if there
12:10 22 wasn't one.

12:10 23 Q. Sitting here today, are you aware
12:11 24 of any?

12:11 25 A. I'm not aware of one. But again,

12:11 1 like I said, I would be shocked if there
12:11 2 wasn't one or many, in fact.

12:11 3 Q. If a cryptocurrency exchange did
12:11 4 not keep their trading records in paper form,
12:11 5 how do they keep them?

12:11 6 MS. ZORNBERG: Objection.

12:11 7 A. Presumably, they would keep them
12:11 8 in some kind of digital storage.

12:11 9 Q. And where would that digital --
12:11 10 strike that.

12:11 11 Where is that digital storage
12:11 12 located?

12:11 13 MS. ZORNBERG: Objection. Lack
12:11 14 of foundation.

12:11 15 A. I have no idea.

12:11 16 Q. Okay. Let's turn to paragraph
12:11 17 37, please. The second sentence of paragraph
12:11 18 37 says:

12:12 19 "Here, there is significant
12:12 20 convergence on the key principles among
12:12 21 exchanges."

12:12 22 Do you see that?

12:12 23 A. I do.

12:12 24 Q. Okay. Can you tell me what you
12:12 25 mean by "significant convergence"?

12:12 1 A. What I mean by that is that there
12:12 2 is significant commonality in the practice of
12:12 3 the fact that when orders match, they become
12:12 4 final.

12:12 5 Q. Significant commonality between
12:12 6 what and what?

12:12 7 A. Between traditional marketplaces
12:12 8 and the -- the fact that exchanges essentially
12:12 9 cue to the principle that when orders match,
12:12 10 they become final.

12:12 11 Q. Are you aware of any traditional
12:12 12 financial exchanges where a buyer or a
12:12 13 seller's order becomes binding as soon as the
12:12 14 order is placed but before it is matched?

12:12 15 MS. ZORNBERG: Object to form.

12:13 16 You can answer.

12:13 17 A. I'm sorry, are you asking -- can
12:13 18 you repeat that question, please.

12:13 19 Q. Of course. Are you aware of any
12:13 20 traditional financial exchanges where an order
12:13 21 becomes binding as soon as the order is placed
12:13 22 but before it is matched?

12:13 23 MS. ZORNBERG: Same objection.

12:13 24 A. Not that I can think of.

12:13 25 Q. Are you aware of any

12:13 1 cryptocurrency exchanges where an order
12:13 2 becomes binding as soon as the order is placed
12:13 3 but before it is matched?

12:13 4 A. No.

12:14 5 Q. Let's look at paragraph 41,
12:14 6 please. The second sentence states:

12:14 7 "Orders may be submitted from
12:14 8 around the world, while still executing
12:14 9 within the order books of an exchange
12:14 10 and within its home jurisdiction."

12:14 11 Do you see that?

12:14 12 A. Yes, I do.

12:14 13 Q. Okay. Where is an exchange's
12:14 14 order book located?

12:14 15 A. In my opinion, an exchange's
12:14 16 order book is located at the exchange.

12:14 17 Q. When you say "in your opinion,
12:14 18 the order book is located at the exchange" --
12:14 19 strike that.

12:15 20 Is the order book that's being
12:15 21 referenced -- strike that.

12:15 22 Is the order book that you
12:15 23 reference in paragraph 41 a physical book?

12:15 24 A. The -- it may be. Order books
12:15 25 tend to be digital in electronic markets.

12:15 1 Q. Are you aware of any
12:15 2 cryptocurrency exchange whose order book is a
12:15 3 physical book?

12:15 4 A. Not that I can think of.

12:15 5 Q. You testified order books tend to
12:15 6 be digital in electronic markets. Is that
12:15 7 right?

12:15 8 MS. ZORNBERG: Objection. Asked
12:15 9 and answered.

12:15 10 Q. Is that correct?

12:15 11 A. Yes.

12:15 12 Q. Where are digital order books
12:15 13 kept?

12:15 14 A. Again, that's a very broad
12:16 15 question.

12:16 16 Q. If a record book is digital,
12:16 17 where in the world does it exist?

12:16 18 A. In my opinion, the --

12:16 19 MS. BUNTING: Objection.

12:16 20 A. Sorry. In my book -- in my
12:16 21 opinion, that order book exists at the
12:16 22 exchange.

12:16 23 Q. What does the -- where are the
12:16 24 digital records of an order book maintained
12:16 25 physically?

12:16 1 MS. ZORNBERG: Objection.

12:16 2 MS. BUNTING: Objection.

12:16 3 A. The digital order book of the
12:16 4 exchange references the orders that are coming
12:16 5 into the exchange and going into its central
12:16 6 limit order book.

12:16 7 That is a function of what the
12:16 8 exchange does and is determined, as before, by
12:16 9 the various rules and processes of the
12:16 10 exchange that ensure those order books have
12:17 11 form and that protocols applied to those order
12:17 12 books to match the orders as they come in.

12:17 13 Q. And as a practical matter, is the
12:17 14 process that you just described executed by a
12:17 15 computer program?

12:17 16 MS. ZORNBERG: Objection.

12:17 17 A. Some part of it.

12:17 18 Q. Which part is not?

12:17 19 MS. ZORNBERG: Objection.

12:17 20 A. As detailed in this opinion as
12:17 21 well as in our answers in our conversation
12:17 22 already, that matching process has multiple
12:17 23 parts to it. Orders match mechanically. That
12:17 24 matching has form and content based on the
12:17 25 governance and rules and processes of that

12:17 1 exchange.

12:17 2 Q. When you say "orders match
12:17 3 mechanically," is that a reference to orders
12:17 4 matching through a computer program?

12:17 5 A. Some part of it will match, the
12:17 6 b-y-t-e will match on a computer at some point
12:18 7 at some level, yes.

12:18 8 Q. Can you describe to me what
12:18 9 portions of the order book are not executed by
12:18 10 a computer program?

12:18 11 MS. ZORNBERG: Object to form.

12:18 12 A. Sure. The order book exists to
12:18 13 collect the orders, match those orders, make
12:18 14 them final. Then the exchange has to enforce
12:18 15 that bargain.

12:18 16 In some cases, that enforcement
12:18 17 takes place using actual human beings that are
12:18 18 responsible for verifying the orders, making
12:18 19 sure that the order book has integrity in real
12:18 20 time, as well as finally, potentially, dealing
12:18 21 with any disputes that may arise with respect
12:18 22 to any orders that are concluded.

12:18 23 Q. You say in some cases human
12:18 24 beings are involved. Is that typical?

12:19 25 MS. ZORNBERG: Object to form.

12:19 1 A. Human beings are involved even in
12:19 2 the highly digital matching process because
12:19 3 human beings have to check the constant
12:19 4 integrity of the programs that are running.
12:19 5 Where there's a problem, human beings have to
12:19 6 get involved to fix that problem.

12:19 7 Q. Is the exchange's digital order
12:19 8 book located on a server or elsewhere?

12:19 9 MS. ZORNBERG: Object to form.

12:19 10 A. Again, some part of it may be,
12:19 11 but that order book has a far larger and more
12:19 12 institutional existence than the simple
12:19 13 mechanical matching of one byte with another.

12:19 14 Q. Is the institutional existence
12:19 15 that you just referenced -- strike that.

12:19 16 Can you tell me what you mean by
12:19 17 "institutional existence"?

12:19 18 A. The institutional existence that
12:19 19 I referenced means the fact that the exchange
12:20 20 has to develop a protocol for ensuring the
12:20 21 order book has real form, for ensuring that
12:20 22 binding bargains are enforced, for dealing
12:20 23 with any problems that may arise, either in
12:20 24 the context of a digital order book operating
12:20 25 in real time, or in the context of potential

12:20 1 disputes that may arise in relation to
12:20 2 concluded orders.

12:20 3 Q. Is the word "protocol," as you
12:20 4 just used it, a reference to a computer
12:20 5 program?

12:20 6 MS. ZORNBERG: Object to form.
12:20 7 And I don't think her last answer used
12:20 8 the word "protocol."

12:20 9 CERTIFIED STENOGRAPHER: Yes, it
12:20 10 did. It didn't translate properly.

12:20 11 A. It doesn't have to. I mean, a
12:20 12 computerized -- it doesn't have to be
12:20 13 computerized. A protocol may be written
12:20 14 outside of the computer and then potentially
12:21 15 instrumentalized through a computer.

12:21 16 But a protocol is a general word
12:21 17 referencing a set of conventions in relation
12:21 18 to a particular exchange practice.

12:21 19 Q. Are all trades on cryptocurrency
12:21 20 exchanges instrumentalized, at least in some
12:21 21 part, through a computer program?

12:21 22 A. At some point, a computer may be
12:21 23 involved. A computer -- certainly a computer
12:21 24 is involved. However, the order matching,
12:21 25 order submission, order conclusion, the

12:21 1 governance, making sure that disputes are
12:21 2 dealt with, that is all a part of the larger
12:21 3 institutional existence of the exchange. And
12:21 4 no order can exist outside of it.

12:21 5 Q. The portion that takes place via
12:21 6 a computer program, where in the world,
12:21 7 geographically, does that take place?

12:21 8 MS. ZORNBERG: Objection.

12:21 9 A. I have no idea.

12:21 10 Q. Is it your view that locating
12:22 11 computer servers around the world facilitates
12:22 12 rapid trading?

12:22 13 A. It does facilitate rapid trading.
12:22 14 It can facilitate rapid trading.

12:22 15 Q. In what way does locating
12:22 16 computer servers around the world facilitate
12:22 17 rapid trading?

12:22 18 A. For any number of reasons. I'm
12:22 19 not a computer expert. So ...

12:22 20 Q. In that case, what's the basis
12:22 21 for your belief that computer servers --
12:22 22 strike that.

12:22 23 What's the basis for your belief
12:22 24 that locating computer servers around the
12:23 25 world facilitate rapid trading?

12:23 1 A. I know a lot about the topic
12:23 2 based off my own research, in general, into
12:23 3 high frequency markets.

12:23 4 Q. So if I understand your
12:23 5 testimony, you understand that that statement
12:23 6 is true. But from a mechanical perspective,
12:23 7 you're not sure why. Is that fair?

12:23 8 A. I mean, it helps to ease
12:23 9 communication between jurisdictions.

12:23 10 Q. Why is that?

12:23 11 A. It reduces the physical distance
12:23 12 that communication has to travel.

12:23 13 Q. So if the physical distance
12:23 14 between two servers is shorter, in general,
12:23 15 the communication between those servers is
12:23 16 faster. Is that right?

12:23 17 MS. ZORNBERG: Object to form.

12:23 18 A. Again, I'm not a computer expert.
12:23 19 But just based off my own knowledge and
12:23 20 research, that tends to be the case.

12:23 21 Q. Do any cryptocurrency exchanges
12:23 22 that are based outside the United States have
12:24 23 computer servers located in the United States?

12:24 24 A. I have no idea.

12:24 25 Q. Is it the case that the closer

12:24 1 one is physically to an exchange's server, the
12:24 2 faster one can obtain price information and
12:24 3 place trade orders?

12:24 4 MS. ZORNBERG: Objection.

12:24 5 Outside the scope.

12:24 6 A. It depends.

12:25 7 Q. What does it depend on?

12:25 8 A. It depends on any number of
12:25 9 things. For example, even if you place a
12:25 10 server closer to that of the exchange, it may
12:25 11 not necessarily get that information faster,
12:25 12 because you may not pay for a faster service.

12:25 13 Q. In your experience, do
12:25 14 professional traders typically want to be
12:25 15 located close to servers to obtain an
12:25 16 advantage of speed of execution?

12:25 17 MS. ZORNBERG: Objection.

12:25 18 A. It depends on the trader.

12:25 19 Q. Is it typical within the
12:25 20 professional trading industry for traders to
12:25 21 want to be located close to servers for speed
12:25 22 reasons?

12:25 23 MS. ZORNBERG: Objection.

12:25 24 A. It depends on the trader.

12:25 25 Q. And why do you say "it depends on

12:26 1 the trader"?

12:26 2 A. Some traders pursue strategies
12:26 3 that depend on speed. Others don't.

12:26 4 Q. That's a very fair point. If the
12:26 5 trader is concerned -- strike that.

12:26 6 If a trader is pursuing a
12:26 7 strategy that depends on speed, is it typical
12:26 8 for that trader to want to be physically
12:26 9 located closer to a server?

12:26 10 MS. ZORNBERG: Object to form.

12:26 11 A. They may want to do that.

12:26 12 Q. Is it typical?

12:26 13 MS. ZORNBERG: Objection.

12:26 14 A. It is typical if their strategy
12:26 15 is focused purely on speed to try and do that.
12:26 16 Nevertheless, there are many contingencies
12:26 17 that can still apply.

12:26 18 MS. ZORNBERG: Just, we're almost
12:26 19 at 12:30. Just, I think, whenever you
12:27 20 finish this line, maybe we can break.

12:27 21 MR. SYLVESTER: That sounds good.
12:27 22 I think I have, like, a couple more
12:27 23 questions.

12:27 24 MS. ZORNBERG: Okay.

12:27 25 Q. If a trader is typically

12:27 1 focused -- strike that.

12:27 2 If a trader's strategy is
12:27 3 typically focused on speed of transaction, why
12:27 4 is it that that trader might want to be
12:27 5 located closer to a server?

12:27 6 A. Whose server? Sorry.

12:27 7 Q. The exchange's server.

12:27 8 MS. ZORNBERG: Object to form.

12:27 9 A. In general, a trader that is
12:27 10 pursuing a speed-based strategy may want to
12:27 11 co-locate alongside the servers of an exchange
12:27 12 in order to try and get data faster and to be
12:27 13 able to send orders quicker into the order
12:27 14 submission system.

12:27 15 Q. Can you explain what you mean by
12:27 16 "co-locate"?

12:27 17 A. Locate next to -- locate their
12:28 18 servers next to the servers of the exchange.

12:28 19 MR. SYLVESTER: Okay. I think
12:28 20 that's a good place to stop. Let's go
12:28 21 off the record.

12:28 22 THE VIDEOGRAPHER: The time now
12:28 23 is 12:28 p.m. This concludes Media 3.
12:28 24 Off the record.

12:45 25 (Recess taken from 12:28 p.m. to

12:45 1 12:45 p.m.)

12:45 2 THE VIDEOGRAPHER: The time now
12:45 3 is 12:45 p.m. This begins Media 4. On
12:45 4 the record.

12:45 5 BY MR. SYLVESTER:

12:45 6 Q. Professor, why would co-locating
12:45 7 a trader's server next to the servers of an
12:45 8 exchange allow the trader to send his order
12:45 9 quicker into the order submission system?

12:45 10 A. In general, co-location helps
12:45 11 reduce the time it takes to send an order by
12:45 12 reducing the distance that has to be traveled.

12:46 13 Q. When you reference distance in
12:46 14 your answer, do you mean the distance between
12:46 15 the trader's servers and the exchange's
12:46 16 servers?

12:46 17 A. I did, yes.

12:46 18 Q. Okay. Let's go back to paragraph
12:46 19 41, please. Professor, at the end of 41, do
12:46 20 you see a discussion of the London Stock
12:46 21 Exchange?

12:46 22 A. I do, yes.

12:46 23 Q. Where are the London Stock
12:46 24 Exchange's order books?

12:46 25 A. In my opinion, in London.

12:46 1 Q. What is the basis for your
12:47 2 opinion that the London Stock Exchange's order
12:47 3 books are in London?

12:47 4 A. In my mind, in my opinion, the
12:47 5 exchange's order books reflect the exchange's
12:47 6 institutionalized processes for determining
12:47 7 how orders match, what happens when they
12:47 8 match, and for ensuring that the order becomes
12:47 9 final and is enforced.

12:47 10 That system for doing so is
12:47 11 located at the exchange, in this case, in the
12:47 12 London Stock Exchange, where the stock
12:47 13 exchange operates its central limit order
12:47 14 book, orders go into that central limit order
12:47 15 book, are finalized in accordance with the
12:47 16 rules and processes of the London Stock
12:47 17 Exchange, and enforced under the rules of the
12:47 18 London Stock Exchange, as governed by the laws
12:47 19 of England and Wales.

12:47 20 Q. Is the London Stock Exchange's
12:47 21 central limit order book a physical book?

12:47 22 A. Some part of it might be.

12:48 23 Q. Is any part of it not a physical
12:48 24 book?

12:48 25 A. The central limit order book

12:48 1 references the system whereby orders are
12:48 2 collected, they're matched in accordance with
12:48 3 a certain convention, they become binding and
12:48 4 final based on that matching, and that central
12:48 5 limit order book is then enforced by the
12:48 6 exchange.

12:48 7 Q. Is any of what you just -- strike
12:48 8 that.

12:48 9 Does any of what you just
12:48 10 described take place via a computer program?

12:48 11 A. Some part of it will take place
12:48 12 using a computer at some point.

12:48 13 Q. And for the portion of what you
12:48 14 described that takes place via computer, is
12:48 15 the data processed by that computer program
12:48 16 located on the London Stock Exchange's
12:48 17 servers?

12:48 18 MS. ZORNBERG: Object to form.

12:48 19 A. I would imagine so somewhere.

12:49 20 Q. You cite in Footnote --
12:49 21 Footnote 73 and 75 the London Stock
12:49 22 Exchange's -- "A Guide to London Stock
12:49 23 Exchange Trading Service For Equity
12:49 24 Securities."

12:49 25 Do you see that?

12:49 1 A. I do.

12:49 2 Q. Does the guide referenced in
12:49 3 those footnotes say that orders are matched in
12:49 4 London?

12:49 5 A. I can't recall.

12:49 6 Q. The second to last sentence of
12:49 7 paragraph 41 reads:

12:49 8 "Nevertheless, even with these
12:49 9 operations, including in the United
12:49 10 States, it is clear that market
12:49 11 participants understand the London Stock
12:49 12 Exchange to be located in London, United
12:49 13 Kingdom."

12:49 14 Can you tell me what the basis is
12:49 15 for your statement that it is clear that the
12:49 16 market participants understand that the LSE is
12:50 17 located in London?

12:50 18 A. Yes, it's a common understanding
12:50 19 that the London Stock Exchange is located in
12:50 20 London. A part of that process involves
12:50 21 market participants having to become a part of
12:50 22 the London Stock Exchange in some form in
12:50 23 order to be able to trade on it.

12:50 24 Q. So in order for a trader to trade
12:50 25 in the London Stock Exchange, that trader has

12:50 1 to become a part of the London Stock Exchange
12:50 2 in some way?

12:50 3 A. Has to be connected to the London
12:50 4 Stock Exchange in some way, yes.

12:50 5 Q. Can you explain what you mean by
12:50 6 "connected" in that context?

12:50 7 A. So, for example, you may have to
12:50 8 use a particular broker that is a member of
12:50 9 the London Stock Exchange in order to be able
12:50 10 to trade.

12:50 11 Q. Are there any cryptocurrency
12:50 12 exchanges that have similar requirements?

12:50 13 MS. ZORNBERG: Object to form.

12:51 14 A. Cryptocurrency -- cryptocurrency
12:51 15 exchanges, as detailed in the report, require,
12:51 16 for the most part, in the terms of service
12:51 17 that I have reviewed, to have users download a
12:51 18 particular wallet that is particular to that
12:51 19 exchange itself.

12:51 20 Q. Is the -- strike that.

12:51 21 Is your answer the only
12:51 22 similarity you can think of between the London
12:51 23 Stock Exchange's requirement that a specific
12:51 24 broker has to be affiliated with the exchange
12:51 25 to trade on the exchange and cryptocurrency

12:51 1 exchanges?

12:51 2 MS. ZORNBERG: Objection.

12:51 3 Q. You can answer.

12:51 4 A. It's --

12:52 5 MS. ZORNBERG: Okay. You can
12:52 6 answer.

12:52 7 A. I'm sorry, could you repeat the
12:52 8 question.

12:52 9 Q. Can you tell me what it means to
12:52 10 be a member of the London Stock Exchange?

12:52 11 A. Sure. To be a member of the
12:52 12 London Stock Exchange means that you have
12:52 13 certain rights and privileges in order to be
12:52 14 able to trade on the London Stock Exchange,
12:52 15 and members subscribe for that privilege.

12:52 16 Q. How is it that one becomes a
12:52 17 member of the London Stock Exchange?

12:52 18 A. It's been a long time since I
12:52 19 read those rules. There's a process.

12:52 20 Q. Is anyone required to be a member
12:52 21 of a cryptocurrency exchange to trade on that
12:52 22 exchange?

12:52 23 A. Crypto- --

12:52 24 MS. ZORNBERG: Object to form.

12:52 25 A. Cryptocurrency exchanges require

12:52 1 their users, in general and as detailed in
12:53 2 this report, to submit to terms of service
12:53 3 that require them to provide various
12:53 4 representations as to who they are, get a
12:53 5 wallet that is particular to that exchange,
12:53 6 and ensure that they abide by the rules of the
12:53 7 exchange including with respect to the trading
12:53 8 process.

12:53 9 Q. Does taking the steps that you
12:53 10 just described make a trader a member of a
12:53 11 particular cryptocurrency exchange?

12:53 12 A. As far as I understand it, the
12:53 13 concept of membership is different in the
12:53 14 context of a cryptocurrency exchange. I don't
12:53 15 believe they follow that same member-based
12:53 16 structure that more traditional exchanges like
12:53 17 the New York Stock Exchange and the London
12:53 18 Stock Exchange follow.

12:53 19 Q. Returning to your statement about
12:53 20 "it is clear that market participants
12:54 21 understand that the LSE is located in London,"
12:54 22 did you speak to any market participants about
12:54 23 that topic?

12:54 24 A. Based on my own research and
12:54 25 understanding, the fact that I was a lawyer in

12:54 1 London, the London Stock Exchange, for all
12:54 2 intents and purposes, it would be absurd to
12:54 3 think otherwise.

12:54 4 Q. I appreciate that. But did you
12:54 5 speak to any market participants on the topic
12:54 6 of their understanding of where the London
12:54 7 Stock Exchange is located?

12:54 8 A. I haven't. It's such a basic
12:54 9 question, it would be weird to ask.

12:54 10 Q. The next sentence, the concluding
12:54 11 sentence of paragraph 41 says:

12:54 12 "As such, offers to buy and sell
12:54 13 on the London Stock Exchange are made in
12:54 14 London once they enter its order books,
12:54 15 and trades become final there once
12:54 16 offers match on its platform in
12:54 17 accordance with the Exchange's rules and
12:54 18 procedures."

12:54 19 Do you see that?

12:54 20 A. I do, yes.

12:54 21 Q. Is where the London Stock
12:55 22 Exchange's offers to buy and sell match
12:55 23 influenced, in your view, by where market
12:55 24 participants understand the London Stock
12:55 25 Exchange to be located?

12:55 1 MS. ZORNBERG: Object to form.

12:55 2 A. Could you repeat the question.

12:55 3 Q. Sure. What is the relevance, if
12:55 4 at all, to market participants' understanding
12:55 5 of where the London Stock Exchange is located
12:55 6 to where the London Stock Exchange's orders
12:55 7 match?

12:55 8 A. It's all part of the exchange.
12:55 9 It's all part of where the exchange -- the
12:55 10 institutional existence of the exchange.

12:55 11 Q. So in your view, a market
12:56 12 participant's understanding of where an
12:56 13 exchange is located has some relevance to the
12:56 14 question of where its orders to buy and sell
12:56 15 are matched?

12:56 16 A. Likely so.

12:56 17 Q. Can you explain the relevance?

12:56 18 A. The order submission process that
12:56 19 the customer thinks they're entering into,
12:56 20 they believe that it's happening in London.

12:56 21 If you take a look at the terms
12:56 22 of service of the London Stock Exchange, in
12:56 23 other words, its rule book, it sets out
12:56 24 dispute resolution processes, for example,
12:56 25 that need to be followed that consistently

12:56 1 reference the laws of England and Wales and
12:56 2 obviously the London Stock Exchange in London.

12:56 3 And so the fact that investors
12:56 4 are engaging in a direct way with the London
12:56 5 Stock Exchange with all of the paraphernalia
12:56 6 that references the London Stock Exchange as
12:56 7 being in London, I think that's -- influences
12:56 8 their judgment and certainly the -- that's
12:57 9 a -- shows what they -- how they understand
12:57 10 the order submission process there to
12:57 11 function.

12:57 12 Q. In your view, is it obvious that
12:57 13 the London Stock Exchange is located in
12:57 14 London?

12:57 15 A. To me? Yes.

12:57 16 Q. Why is that?

12:57 17 A. For many reasons. The first is
12:57 18 historical. The London Stock Exchange has
12:57 19 centuries-deep roots in London. It is
12:57 20 governed by the laws of England and Wales. It
12:57 21 is governed by a rule book that has organized
12:57 22 this marketplace for a very long time.

12:57 23 The London Stock Exchange also
12:57 24 offers a particular set of products that
12:57 25 reflect the fact that it is based in the

12:57 1 United Kingdom, and therefore, at a location
12:57 2 which is in the middle of the US, Europe, and
12:58 3 Asia.

12:58 4 And so the fact of being in
12:58 5 London is, in fact, very important for the
12:58 6 London Stock Exchange to actually have the
12:58 7 kind of products that it offers to the rest of
12:58 8 the global trading community.

12:58 9 Q. There are a number of
12:58 10 cryptocurrency exchanges. Correct?

12:58 11 A. Yes.

12:58 12 MS. ZORNBERG: Object to form.

12:58 13 Q. What's the oldest?

12:58 14 A. Cryptocurrency exchanges?

12:58 15 Q. Yes.

12:58 16 A. Well, are you asking is it still
12:58 17 in existence or not?

12:58 18 Q. No, I apologize. Of all the
12:58 19 cryptocurrency exchanges that exist, which is
12:58 20 the oldest?

12:58 21 A. I'm not sure if it still exists
12:58 22 in some form, but my understanding is that the
12:58 23 first real big exchange was the Mt. Gox
12:58 24 exchange, which subsequently imploded.

12:58 25 Q. When was the Mt. Gox exchange

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founded?

A. I believe it was
around -- early -- maybe 2013-'14.

Q. Excluding Mt. Gox, what's the
second oldest cryptocurrency exchange?

MS. ZORNBERG: Objection.
Outside scope.

A. There -- you know, it's hard for
me to say.

Q. Because you don't know?

MS. ZORNBERG: Objection.

Q. Just for clarity.

A. I don't know exactly which
exchange was the second to come into existence
after Mt. Gox.

Q. Sure. Paragraph 42, the last
sentence reflects your view that it's:

"Clear that market participants
understand that the Chicago Mercantile
Exchange is located in Chicago" and the
Tokyo Stock Exchange is located in
Tokyo.

Do you see that?

A. I do, yes.

Q. Did you speak to any market

01:00 1 participants on the topic of their belief as
01:00 2 to where either of those exchanges are
01:00 3 located?

01:00 4 A. I did not.

01:00 5 Q. Okay. Did you review any
01:00 6 literature regarding market participants'
01:00 7 belief as to whether -- where either of those
01:00 8 exchanges were located?

01:00 9 A. I don't know what you mean by
01:00 10 "literature."

01:00 11 Q. I would include within literature
01:00 12 any papers, articles, media.

01:00 13 MS. ZORNBERG: I'm going to
01:00 14 object to form.

01:00 15 You can answer.

01:00 16 A. It's -- you know, there is a
01:00 17 lengthy literature in relation to the history
01:00 18 of the Chicago Mercantile Exchange, some of it
01:00 19 which is referenced here, that speaks to the
01:00 20 centrality of Chicago as the reason why the
01:00 21 Chicago Mercantile Exchange came into being
01:00 22 for the reasons it came into being.

01:01 23 There's an extensive literature
01:01 24 detailing the importance of Chicago as one of
01:01 25 the key players in the commodities

01:01 1 marketplace.

01:01 2 And so I imagine that is an
01:01 3 important structural connection point between
01:01 4 the minds of market participants and the
01:01 5 trade -- trading hub itself.

01:01 6 The fact that Chicago is so
01:01 7 essential to the economic history of the US,
01:01 8 and in particular, the economic history of the
01:01 9 commodities trading marketplace.

01:01 10 Q. Did any of the literature that
01:01 11 you just described discuss the specific point
01:01 12 of market participants' understanding of the
01:01 13 location of the Chicago Mercantile Exchange?

01:01 14 MS. ZORNBERG: Object to form.

01:01 15 A. I don't actually know what that
01:01 16 question really means.

01:01 17 I mean, I think the historical
01:01 18 record in some of the articles speaks to folks
01:02 19 meeting in Chicago in the earliest days to try
01:02 20 and create a grain market, for example. So I
01:02 21 don't know if that counts.

01:02 22 Q. Where are the Chicago Mercantile
01:02 23 Exchange's order books located?

01:02 24 A. In Chicago.

01:02 25 Q. How do you know that?

01:02 1 A. Well, the Chicago Mercantile
01:02 2 Exchange is the Chicago Mercantile Exchange.
01:02 3 Going back to my earlier answers, there's an
01:02 4 institutional existence for the order book
01:02 5 that encompasses the rule book of the exchange
01:02 6 that encompasses the fact that the exchange
01:02 7 has a presence in Chicago, the governance
01:02 8 processes of the Chicago Mercantile Exchange,
01:02 9 its rules and processes that give effect to
01:02 10 the order book.

01:02 11 Q. Where does the Chicago Mercantile
01:02 12 Exchange match its orders?

01:02 13 A. The matching process, as detailed
01:02 14 in my earlier answers, references the
01:03 15 mechanical matching process that may exist on
01:03 16 a b-y-t-e, byte-to-byte level as well as the
01:03 17 larger rules and processes that give that
01:03 18 matching form, that ensure that orders that
01:03 19 match become a trade that is binding and that
01:03 20 ensure the enforceability of that bargaining.

01:03 21 Q. At the byte level, where
01:03 22 do -- where does the Chicago Mercantile
01:03 23 Exchange match its orders?

01:03 24 MS. ZORNBERG: Objection.

01:03 25 A. Depends on orders. It's hard to

01:03 1 say.

01:03 2 Q. When you say "it depends on
01:03 3 orders," can you say what it depends on?

01:03 4 A. I mean, the Chicago Mercantile
01:03 5 Exchange may have computers anywhere. I'm not
01:03 6 sure.

01:03 7 Q. Globally?

01:03 8 A. Presumably.

01:03 9 Q. When you say "presumably," why
01:03 10 presumably?

01:03 11 A. I don't know the exact location,
01:03 12 if it's various operations around the world.

01:04 13 Q. When you say "presumably," do you
01:04 14 suggest that it's probably the case that they
01:04 15 have global servers?

01:04 16 MS. BUNTING: Objection.

01:04 17 A. I would be extremely shocked if
01:04 18 they didn't have -- well, they -- I believe
01:04 19 they will have servers at locations around the
01:04 20 globe.

01:04 21 Q. Okay. Where is the Tokyo Stock
01:04 22 Exchange's order books located?

01:04 23 A. I'm guessing in Tokyo, given my
01:04 24 earlier answers that the Tokyo Stock Exchange,
01:04 25 like the Chicago Mercantile Exchange,

01:04 1 encompasses an institutional presence that
01:04 2 ensures that orders matching are matched,
01:04 3 become final trades, and are enforced as
01:04 4 bargains by the Tokyo Stock Exchange.

01:04 5 Q. Where does the Tokyo Stock
01:04 6 Exchange match its orders?

01:04 7 A. The Tokyo Stock Exchange's
01:04 8 matching includes the, b-y-t-e, byte-to-byte
01:04 9 matching that may exist, as well as ensuring
01:05 10 that the matching process, which is
01:05 11 mechanical, has actual meaning in accordance
01:05 12 with the rules and conventions of the central
01:05 13 limit order book and the governance processes
01:05 14 of the Chicago -- of the Tokyo Stock Exchange.

01:05 15 Q. Focusing just on the byte-to-byte
01:05 16 matching process, where does the Tokyo Stock
01:05 17 Exchange match its orders?

01:05 18 MS. ZORNBERG: Objection.

01:05 19 MS. BUNTING: Objection.

01:05 20 A. I don't know.

01:05 21 Q. Are you offering any opinion in
01:05 22 this case that XRP is a currency?

01:05 23 A. I am not.

01:05 24 Q. Are you offering any opinion in
01:05 25 this case as to whether or not XRP has the

01:05 1 attributes of a currency?

01:05 2 A. I am not.

01:05 3 Q. Let's look at the last sentence
01:06 4 of paragraph 49, please. You write:

01:06 5 "The XRP cryptocurrency, for
01:06 6 example, has been used as a digital
01:06 7 settlement asset to overcome the speed
01:06 8 and costly frictions entailed in making
01:06 9 cross-border payments between different
01:06 10 currencies."

01:06 11 Do you see that?

01:06 12 A. I'm sorry, I must be on the wrong
01:06 13 page.

01:06 14 Q. I'm on page -- I'm starting at
01:06 15 the bottom of page 26.

01:06 16 A. (Document review.)

01:06 17 Yes.

01:06 18 Q. What is your basis for that
01:07 19 statement?

01:07 20 A. I've cited a source at source 86
01:07 21 as an example --

01:07 22 Q. Sorry. Is there any other basis
01:07 23 for the statement that I just read aloud other
01:07 24 than the source cited in Note 86?

01:07 25 A. Based off my general background

01:07 1 understanding.

01:07 2 Q. What is that general background
01:07 3 understanding?

01:07 4 A. That XRP offers a settlement --
01:07 5 payment settlement asset for international
01:07 6 payments.

01:07 7 Q. And remind me how you learned
01:07 8 that.

01:07 9 MS. ZORNBERG: Object to form.

01:07 10 A. It's part of my general research
01:07 11 into the marketplace.

01:07 12 Q. Prior to your retention in this
01:07 13 case?

01:07 14 A. Yes.

01:07 15 Q. When you say "the marketplace" in
01:07 16 that answer, what marketplace?

01:08 17 A. The financial markets.

01:08 18 Q. And how was it that you came
01:08 19 across XRP's use as a -- strike that.

01:08 20 How is it that you came across
01:08 21 the use of XRP in making cross-border payments
01:08 22 in your research into the financial markets?

01:08 23 A. I can't recall exactly. However,
01:08 24 I imagine -- I think it may have been as part
01:08 25 of conversations I have with academics,

01:08 1 discussions at conferences, for example, in
01:08 2 relation to innovations in payments
01:08 3 technology.

01:08 4 Q. Is cross-border payments
01:08 5 something that you study?

01:08 6 A. Cross-border payments has been an
01:08 7 area in which I developed extensive expertise
01:08 8 and practice and as part of my overall
01:08 9 research.

01:08 10 Q. Are you aware of any disruptions
01:08 11 or halts on the XRP ledger?

01:08 12 A. None specifically at present.

01:09 13 Q. Let's look at paragraph 59,
01:09 14 please. That is on page 32. The third
01:09 15 sentence in that paragraph is:

01:09 16 "Many cryptocurrency exchanges,
01:09 17 including several on which I understand
18 XRP to have been transacted,
19 contractually stipulate
20 rules-of-the-road for order submission,
21 matching, trade execution, and
22 settlement that are consistent with this
23 understanding."

01:09 24 And I believe "this
01:09 25 understanding" refers to the previous sentence

01:09 1 where you say:

01:09 2 "Market participants understand
01:09 3 that their trades will be executed and
01:09 4 then immediately settled within the
01:09 5 confines of the exchange."

01:10 6 Is that correct?

01:10 7 A. Are you on page 32?

01:10 8 Q. I am.

01:10 9 A. Okay.

01:10 10 Q. Paragraph 59.

01:10 11 MS. ZORNBERG: Object to form.
01:10 12 Are you just asking her if that's
01:10 13 correctly -- you read it correctly?

01:10 14 MR. SYLVESTER: No. I'm asking
01:10 15 whether or not the phrase "this
01:10 16 understanding" referenced the
01:10 17 understanding of market participants
01:10 18 described in the previous sentence.

01:11 19 A. (Document review.)

01:11 20 I'm sorry. What's the question?

01:11 21 Q. Do you see the reference in the
01:11 22 third sentence of paragraph 59, at the end,
01:11 23 "this understanding"?

01:11 24 A. Third sentence of paragraph 59.
01:11 25 Are you referring to "market participants'

01:11 1 understand that their trades will be executed
01:11 2 and then immediately settled"?

01:11 3 Q. That's what I'm asking, is
01:11 4 whether or not this phrase "this
01:11 5 understanding" used in the third sentence is
01:11 6 referring back to your description of market
01:11 7 participants' understanding in the second
01:11 8 sentence of the paragraph.

01:11 9 A. I believe it's referencing market
01:11 10 participants' understanding that their trades
01:11 11 will be executed and then settled within the
01:11 12 exchange.

01:12 13 Q. Okay. So you say that many
01:12 14 cryptocurrency exchanges, including several on
01:12 15 which you understand XRP to have been
01:12 16 contracted -- transacted, have contractual
01:12 17 rules of the road that reflects the
01:12 18 understanding that trades will be executed and
01:12 19 then immediately settled within the confines
01:12 20 of the exchange. Is that right?

01:12 21 MS. ZORNBERG: Object to form.

01:12 22 You can answer.

01:12 23 A. Right.

01:12 24 Q. Let me ask a better question.

01:12 25 You say many -- the third

01:12 1 sentence seems to be about the
01:12 2 rules of the road for many cryptocurrency
01:12 3 exchanges.

01:12 4 I'm trying to get at: What is it
01:12 5 that they contain?

01:12 6 A. Okay.

01:12 7 Q. In your third sentence, what are
01:12 8 you describing?

01:12 9 A. That's a broad question. The
01:12 10 rules of the road for cryptocurrency exchanges
01:12 11 are set out in the terms of service that are
01:13 12 discussed in this report.

01:13 13 I reviewed 24 of them for
01:13 14 exchanges set out in Table A, and many of
01:13 15 those terms of service set out the processes
01:13 16 that exchanges use for order submission, what
01:13 17 makes orders binding, for dispute resolution,
01:13 18 for ensuring that users comply with a certain
01:13 19 standard of behavior when they're on the
01:13 20 exchange, as well as rules with respect to how
01:13 21 they maintain their solvency on the exchange,
01:13 22 for example.

01:13 23 Q. Are there any rules of the road
01:13 24 that you reviewed that do not include any of
01:13 25 the information you just described?

01:14 1 MS. ZORNBERG: Object to form.

01:14 2 A. There may be a couple of -- there
01:14 3 may have been -- there were, rather, I should
01:14 4 say, some terms of service that were much more
01:14 5 basic than others.

01:14 6 Q. When you say they were "much more
01:14 7 basic," does that mean they did not include
01:14 8 the information that you just described?

01:14 9 A. They may have included some of
01:14 10 it, but the detail was varied in the depth
01:14 11 depending on the terms of service.

01:14 12 Q. Were there any rules of the road
01:14 13 that you read that did not set forth what
01:14 14 makes an order binding?

01:14 15 MS. ZORNBERG: Object to form.

01:14 16 A. You know, I think there may have
01:14 17 been one user agreement or a couple user
01:14 18 agreements that perhaps weren't as clear on
01:15 19 that. But in general, the user agreements
01:15 20 were very categorical about the fact that
01:15 21 orders become binding when they are matched by
01:15 22 the exchange, partially-filled orders become
01:15 23 binding to the part that is filled when
01:15 24 matched by the exchange.

01:15 25 Q. Which were those one or two that

01:15 1 you just described?

01:15 2 A. I can't exactly recall. I'd have
01:15 3 to go through the user agreements to fish them
01:15 4 out.

01:15 5 Q. Is there anywhere in your report
01:15 6 that reflects that those one or two do not set
01:15 7 forth information about what makes orders
01:15 8 binding on those exchanges?

01:15 9 A. In the report, I focus on the
01:15 10 general. I did -- may -- I don't think I
01:15 11 noted the one or two that did not include that
01:15 12 information specifically.

01:15 13 Q. Okay. The third to last sentence
01:16 14 in paragraph 59 says:

01:16 15 "As with traditional exchanges
01:16 16 that enter into contracts with users,
01:16 17 thereby creating a unique trading
01:16 18 environment, cryptocurrency exchanges
01:16 19 tend to similarly establish a core set
01:16 20 of rules and standards for their
01:16 21 particular market."

01:16 22 Do you see that?

01:16 23 A. I'm so sorry, which paragraph?

01:16 24 Q. 59 again.

01:16 25 A. Sorry.

01:16 1 Q. It's okay.

01:16 2 A. (Document review.)

01:16 3 Yes.

01:16 4 Q. Are there any exchange rules that
01:16 5 you reviewed that do not set forth the core
01:16 6 set of rules and standards that you describe
01:16 7 in that sentence?

01:16 8 MS. ZORNBERG: Objection.

01:16 9 A. Again, referencing back to my
01:16 10 previous answer, there were some
01:17 11 exchange -- there were a couple of exchanges,
01:17 12 some user agreements that were much more basic
01:17 13 than others. Yeah.

01:17 14 Q. For the exchanges with user
01:17 15 agreements that were much more basic than
01:17 16 others, as you describe it, was XRP traded on
01:17 17 those exchanges?

01:17 18 MS. ZORNBERG: Objection to form.

01:17 19 A. I believe so. I can't say for
01:17 20 sure.

01:17 21 Q. Is it your understanding that all
01:17 22 of the -- strike that.

01:17 23 Is it your understanding that XRP
01:17 24 was traded on all the exchanges that are
01:17 25 listed in your Table A?

01:17 1 A. I believe so.

01:17 2 Q. Did you confirm that in any way
01:17 3 before putting Table A in your report?

01:17 4 A. I think I did -- I did -- I think
01:17 5 I did confirm it.

01:17 6 Q. How did you do that?

01:17 7 A. Discuss broadly with counsel.

01:18 8 Q. And did you personally review all
01:18 9 of the user agreements for each of the
01:18 10 exchanges on which XRP traded?

01:18 11 A. I did not review -- with respect
01:18 12 to the exchanges listed in Table A, I reviewed
01:18 13 all of the user agreements minus that of
01:18 14 Bitlish.

01:18 15 Q. Why didn't you review Bitlish?

01:18 16 A. It was not available.

01:18 17 Q. Is it your understanding that
01:18 18 Table A contains all of the cryptocurrency
01:18 19 exchanges on which XRP has ever been traded?

01:18 20 A. I have no idea. Sorry. I
01:18 21 don't --

01:18 22 Q. Let's go to paragraph 63 on the
01:18 23 next page, page 33.

01:18 24 A. Yup.

01:18 25 Q. The first sentence says:

01:18 1 "Based on my review of their user
01:19 2 agreements, exchanges mostly use a
01:19 3 trading model that closely resembles a
01:19 4 central order book that matches buy and
01:19 5 sell orders in accordance with a set
01:19 6 matching algorithm."

01:19 7 Do you see that?

01:19 8 A. I do.

01:19 9 Q. I'm focusing just in on the word
01:19 10 "mostly." Which are the exchanges that do not
01:19 11 use a trading model that closely resembles a
01:19 12 central order book, as you describe in
01:19 13 paragraph 63?

01:19 14 A. The reason I use the word
01:19 15 "mostly" there is because, as I said, some
01:19 16 user agreements are much more basic and don't
01:19 17 provide a detail description of their order
01:19 18 matching system.

01:19 19 I will say that the central limit
01:19 20 order book is the dominant form that has
01:19 21 appeared in the user agreements.

01:19 22 Q. Of the user agreements that you
01:19 23 reviewed, how many of them don't provide that
01:20 24 detailed description of their order matching
01:20 25 system?

01:20 1 A. I would have to go through them
01:20 2 all to fish out the ones that are more basic
01:20 3 and don't stipulate exactly what their order
01:20 4 matching mechanisms look like.

01:20 5 Q. For the ones that don't stipulate
01:20 6 exactly what their order matching mechanisms
01:20 7 look like, do you know how those exchanges
01:20 8 match their orders?

01:20 9 MS. ZORNBERG: Object to form.

01:20 10 A. I do not, no.

01:20 11 Q. The next sentence says -- of
01:20 12 paragraph 63 -- says:

01:20 13 "Offers to buy or sell are made
01:20 14 on the exchange and appear on the
01:20 15 central order book within the confines
01:20 16 of the exchange."

01:20 17 Do you see that?

01:20 18 A. That's right.

01:20 19 Q. Can you tell me what you mean by
01:20 20 the phrase "within the confines of the
01:21 21 exchange"?

01:21 22 A. What I mean by that phrase is
01:21 23 within the order submission ecosystem of that
01:21 24 exchange that sets up an order submission
01:21 25 system, order matching system, and then the

01:21 1 clearing and settlement system for regulating
01:21 2 the accounts of the different users.

01:21 3 Q. Is the order submission ecosystem
01:21 4 consistent -- strike that.

01:21 5 Does the order submission
01:21 6 ecosystem consist of an order submission
01:21 7 system, an order matching system, and a
01:21 8 clearing and settlement system?

01:21 9 MS. ZORNBERG: Object to form.

01:21 10 A. Going back to my earlier answers,
01:21 11 the order matching system, the central limit
01:21 12 order book, consists of the order matching,
01:21 13 the binding quality that comes about when
01:21 14 orders match, the rules and processes that
01:21 15 ensure that binding bargain is then recognized
01:22 16 and enforced by the exchange.

01:22 17 Q. Is what you just described in
01:22 18 your answer what you would consider to be the
01:22 19 order submission ecosystem?

01:22 20 A. Broadly, yes.

01:22 21 Q. Okay. Let's go to paragraph 64,
01:22 22 the first sentence. It says:

01:22 23 "Orders, once matched, then
01:22 24 become automatically binding in the
01:22 25 exchange's trading system."

01:22 1 Do you see that?

01:22 2 A. I do, yes.

01:22 3 Q. Is that always true?

01:22 4 MS. ZORNBERG: Object to form.

01:23 5 A. In general, it is by far, by far,
01:23 6 the prevailing convention across exchanges,
01:23 7 traditional and cryptocurrency exchanges, that
01:23 8 orders, once matched, immediately become
01:23 9 binding in the exchange's trading system.

01:23 10 Q. Focusing just on cryptocurrency
01:23 11 exchanges, what are the exceptions?

01:23 12 A. Going back to my earlier answer,
01:23 13 there were some terms of service that were
01:23 14 more basic, and so I cannot give a conclusive
01:23 15 answer with respect to those exchanges.

01:24 16 Q. The first complete sentence of
01:24 17 paragraph 64 that appears on page 34 begins:

01:24 18 "The terms of service of most of
01:24 19 the exchanges that I reviewed refer to
01:24 20 specific in-house order matching systems
01:24 21 that result in orders becoming binding
01:24 22 as soon as a sell and buy order match."

01:24 23 Do you see that?

01:24 24 A. I do, yes.

01:24 25 Q. Were there any terms of service

01:24 1 that you read where that statement was not
01:24 2 true?

01:24 3 A. Which part of it was not true?

01:24 4 Q. Did you review any terms of
01:24 5 service where the in-house order matching
01:24 6 systems did not result in orders becoming
01:24 7 binding as soon as a sell and buy order
01:24 8 matched?

01:24 9 A. You know, as I sit here today and
01:25 10 think back to the terms of service I reviewed,
01:25 11 where they mention order submission, whenever
01:25 12 they do mention it, that mention states that
01:25 13 whenever orders match, they become binding.

01:25 14 Q. Near the end of paragraph 64,
01:25 15 second to last sentence says:

01:25 16 "Once offers entering the
01:25 17 exchange are matched by the exchange and
01:25 18 become final, reversal can occur only on
01:25 19 narrow grounds (as described below) and
01:25 20 per my review of several user
01:25 21 agreements, only at the discretion of
01:25 22 the exchange."

01:25 23 Do you see that?

01:25 24 A. I do, yes.

01:25 25 Q. Which are the "several user

01:25 1 agreements" you're referring to?

01:25 2 A. I can give you some examples.

01:25 3 Q. Sure. Go ahead.

01:25 4 A. So, for example, when one looks
01:26 5 at the Coinbase exchange, Coinbase Singapore
01:26 6 sets out in its terms of service that trades
01:26 7 may be reversed by the exchange only on
01:26 8 extremely narrow grounds, like a clearly
01:26 9 erroneous trade.

01:26 10 Similarly, if one looks at
01:26 11 BitMax, as I recall, trades may be reversed
01:26 12 for clearly erroneous transactions that take
01:26 13 place on an exchange but, again, only at the
01:26 14 absolute discretion of the exchange itself.

01:26 15 Q. Were there any user agreements
01:26 16 you reviewed where reversal was not only at
01:26 17 the discretion of the exchange?

01:26 18 A. There was only one where the user
01:26 19 could ask for help in helping reverse a trade,
01:27 20 but ultimately it would be up to the exchange,
01:27 21 as far as I can recall, to ensure that
01:27 22 reversal would happen.

01:27 23 That one exception, I cannot
01:27 24 remember exactly which one that was, had the
01:27 25 exchange offering to work with the market

01:27 1 participants.

01:27 2 However, it is a very fundamental
01:27 3 principle in exchange design that trades are
01:27 4 final as soon as they become binding on
01:27 5 exchanges and that where reversals happen,
01:27 6 these happen on extremely narrow grounds and
01:27 7 only at the discretion of the exchange itself.

01:27 8 Q. When you say "it's a principle of
01:27 9 exchange design," do you mean traditional
01:27 10 exchanges or crypto exchanges or both?

01:27 11 A. Let me start at the broadest
01:27 12 level. It is a fundamental principle of
01:27 13 exchange design that orders, when they match,
01:28 14 become final and binding on the exchange.

01:28 15 That is critical, as detailed in
01:28 16 this report, because without that finality,
01:28 17 market participants cannot rely on their
01:28 18 bargain and cannot then take on any kind of
01:28 19 reliance on that bargain.

01:28 20 And that principle is applied by
01:28 21 traditional exchanges, as cited here in this
01:28 22 report, as well as by cryptocurrency
01:28 23 exchanges, for the most part, as I detail in
01:28 24 this report.

01:28 25 Q. Did you review all of the user

01:28 1 agreements that are cited in your Appendix B?

01:28 2 MS. ZORNBERG: Objection. Asked

01:28 3 and answered.

01:28 4 You can answer again.

01:28 5 A. I reviewed all of the user

01:28 6 agreements for Table A exchanges minus

01:28 7 Bitlish.

01:29 8 Q. Let's turn to the first sentence

01:29 9 of paragraph 65 on page 34. You write:

01:29 10 "Per many of the terms of service

01:29 11 that I reviewed, cryptocurrency

01:29 12 exchanges appear to use the common order

01:29 13 matching conventions seen in traditional

01:29 14 financial exchanges to create binding

01:29 15 finality for offers entering an exchange

01:29 16 once they match on the exchange in

01:29 17 accordance with exchange rules."

01:29 18 Do you see that?

01:29 19 A. I do, yes.

01:29 20 Q. Can you tell me what you mean by

01:29 21 the phrase "appear to use"?

01:29 22 A. Yes, it's the fact that I'm

01:29 23 looking at the user agreements, and based off

01:29 24 the user agreements, that's what I understand

01:29 25 those order matching conventions to be.

01:30 1 Q. The first sentence of paragraph
01:30 2 66 on page 35. Do you see that? It says:
01:30 3 "This order matching process and
01:30 4 the finality of trades is further
01:30 5 corroborated by industry participants'
01:30 6 understanding of how trades are executed
01:30 7 on cryptocurrency exchanges."

01:30 8 Do you see that?

01:30 9 A. I do, yes.

01:30 10 Q. What's your basis for your
01:30 11 knowledge of what industry participants'
01:30 12 understanding is of how trades are executed on
01:30 13 cryptocurrency exchanges?

01:30 14 A. For example, as stated in the
01:30 15 report, I relied on the testimony of
01:30 16 [REDACTED] for his understanding as a
01:30 17 longtime market participant in the
01:30 18 cryptocurrency industry.

01:30 19 Q. Is there any other basis for your
01:30 20 knowledge other than [REDACTED] testimony?

01:30 21 A. The user agreements that are
01:30 22 being signed by the customers of
01:31 23 cryptocurrency exchanges presumably would
01:31 24 match and create an understanding on their
01:31 25 part as to what they expect the exchange to

01:31 1 deliver for them.

01:31 2 In addition, cryptocurrency
01:31 3 exchanges, as detailed in this report, are
01:31 4 conducting very high trade volumes. Without
01:31 5 those trade volumes having -- without trades
01:31 6 being binding, those volumes would be -- users
01:31 7 would not be attracted to those exchanges if
01:31 8 they did not -- if they could not rely on the
01:31 9 finality of their trades.

01:31 10 Q. Do you have any basis to believe
01:31 11 that traders on cryptocurrency exchanges
01:31 12 actually read the user agreements of those
01:31 13 exchanges?

01:31 14 MS. ZORNBERG: Object to form.

01:31 15 A. I'm sorry. I don't really
01:31 16 understand the question.

01:31 17 Q. I understood your last answer to
01:31 18 be based, in part, on traders' review of
01:32 19 cryptocurrency exchanges' user agreements.

01:32 20 So my question is whether or not
01:32 21 you have any -- strike that.

01:32 22 Do you have any basis to believe
01:32 23 that traders on cryptocurrency exchanges
01:32 24 actually read those user agreements of those
01:32 25 exchanges?

01:32 1 A. I mean, I can't say for sure. I
01:32 2 can't speak to every trader everywhere.
01:32 3 However, the user agreements certainly
01:32 4 stipulate some very clear requirements that
01:32 5 are demanded of users.

01:32 6 For example, in many of the user
01:32 7 agreements I reviewed here, it demands that a
01:32 8 user get a wallet that is particular to that
01:32 9 exchange, that that user then fill that wallet
01:32 10 with a certain amount of value.

01:32 11 So I would imagine that user
01:32 12 agreements would have to -- users would have
01:32 13 to reflect and think and read that agreement
01:32 14 in order to know what to do when they -- when
01:33 15 they naturalize themselves on a cryptocurrency
01:33 16 exchange.

01:33 17 Q. Do you have any basis to believe
01:33 18 that a trader on a cryptocurrency exchange
01:33 19 would read the entire user agreement of that
01:33 20 exchange?

01:33 21 MS. ZORNBERG: Objection.

01:33 22 A. I really can't speak to every
01:33 23 trader everywhere. It would be certainly in
01:33 24 the trader's interest to read those user
01:33 25 agreements because it sets out the obligations

01:33 1 of traders.

01:33 2 In addition, the user agreements
01:33 3 also sets out the kind of conduct that is
01:33 4 expected of traders and the punishment that
01:33 5 may arise if that conduct is not observed.

01:33 6 Moreover, these user agreements
01:33 7 are, for the most part, clearly written
01:33 8 generally. They're not particularly long
01:33 9 generally.

01:34 10 And so they do appear to be
01:34 11 amenable to being easily read by folks using
01:34 12 the exchange.

01:34 13 Q. Are you expressing an opinion
01:34 14 here that traders on cryptocurrency exchanges
01:34 15 actually do read those exchanges' user
01:34 16 agreements?

01:34 17 A. I'm not expressing that opinion.

01:34 18 Q. Okay. Paragraph 68 on page 37.
01:34 19 Near the bottom of the paragraph, you
01:34 20 reference trading on Bittrex.

01:34 21 Do you see that?

01:34 22 A. Which part? I'm sorry.

01:34 23 Q. Say, the bottom half of paragraph
01:34 24 68 discusses Bittrex?

01:34 25 A. Okay.

01:34 1 Q. And you reference that Bittrex
01:35 2 offers customers both on-chain and off-chain
01:35 3 settlement options. Is that correct?

01:35 4 A. Yes.

01:35 5 Q. Okay. Was XRP traded on Bittrex?

01:35 6 A. I believe so.

01:35 7 Q. Do you know whether any of the
01:35 8 XRP traded on Bittrex was traded using
01:35 9 on-chain settlement?

01:35 10 A. I don't know.

01:35 11 Q. Turning to page -- the next page,
01:35 12 page 38 and paragraph 69. The first sentence
01:35 13 is:

01:35 14 "The fact that transactions are
01:35 15 executed instantaneously and are final
01:35 16 following matching is supported by the
01:35 17 understanding of market participants."

01:35 18 Do you see that?

01:35 19 A. I do.

01:35 20 Q. And right after that sentence,
01:35 21 you again cite ██████████ testimony.

01:35 22 Do you see that?

01:35 23 A. I do.

01:35 24 Q. Do you have any basis for your
01:35 25 conclusion about the understanding of market

01:35 1 participants other than [REDACTED] testimony?

01:36 2 A. Going back to my earlier answer,
01:36 3 it is a core and fundamental principle of
01:36 4 exchange design that transactions become final
01:36 5 as soon as they're matched. Without that,
01:36 6 transaction functions would be extremely
01:36 7 diminished in quality.

01:36 8 Q. And focusing just on market
01:36 9 participants' understanding of that principle,
01:36 10 do you have any basis, other than [REDACTED]
01:36 11 testimony, for your belief that market
01:36 12 participants understand that?

01:36 13 MS. ZORNBERG: Objection. Asked
01:36 14 and answered.

01:36 15 You can answer again.

01:36 16 A. Again, it is a core principle of
01:36 17 exchange design that transactions become final
01:36 18 once they're matched and become binding.

01:36 19 As noted earlier, that is set out
01:36 20 in many user agreements and reflected in the
01:37 21 fact that users are assenting to these user
01:37 22 agreements.

01:37 23 Q. I'm sorry, I didn't hear that
01:37 24 word. Users are what?

01:37 25 A. Assenting.

01:37 1 Q. When you say "assenting," can you
01:37 2 tell me what --

01:37 3 A. Agreeing to.

01:37 4 Q. How do users reflect their
01:37 5 agreement -- their -- with the user
01:37 6 agreements?

01:37 7 A. I'm sorry?

01:37 8 Q. How, if at all, do users --
01:37 9 strike that.

01:37 10 How, if at all, do traders on
01:37 11 cryptocurrency exchanges reflect their
01:37 12 agreement with user agreements?

01:37 13 MS. ZORNBERG: Object to form.

01:37 14 A. It's my understanding that a user
01:37 15 agreement has to be completed by a user before
01:37 16 they're able to access exchange services on a
01:37 17 cryptocurrency exchange.

01:37 18 Q. Did you read the entirety of
01:37 19 ██████████ deposition testimony?

01:37 20 A. I did.

01:37 21 Q. Did ██████████ speak to the physical
01:37 22 location of matching agents on cryptocurrency
01:38 23 exchanges?

01:38 24 MS. ZORNBERG: Objection.

01:38 25 A. I can't recall. I'm sorry.

01:38 1 MR. SYLVESTER: I think this is
01:38 2 probably a good time for a break if that
01:38 3 works for you.

01:38 4 MS. ZORNBERG: Of course.

01:38 5 MR. SYLVESTER: Okay. Let's go
01:38 6 off the record.

01:38 7 THE VIDEOGRAPHER: The time now
01:38 8 is 1:38 p.m. This concludes Media 4.
01:38 9 Off the record.

01:38 10 (Lunch recess taken from
02:27 11 1:38 p.m. to 2:27 p.m.)

12 (Continued on the next page.)

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A F T E R N O O N S E S S I O N

- - -

(Time noted: 2:27 p.m.)

- - -

THE VIDEOGRAPHER: The time now is 2:27. This begins Media 5. On the record.

Y E S H A Y A D A V, resumed and testified further as follows:

CONTINUED EXAMINATION

BY MR. SYLVESTER:

Q. Professor, can we look at paragraph 71 of your report on page 39. The first sentence of paragraph 71 says:

"I have been asked to provide an opinion on whether offers to buy and sell cryptocurrencies like XRP, trading on an exchange, take place on the exchange itself or elsewhere."

My first question is: Is your opinion limited to offers to buy and sell XRP on an exchange?

MS. ZORNBERG: Objection. Asked and answered.

02:28 1 You can answer.

02:28 2 A. My opinion is limited to offers
02:28 3 to buy and sell cryptocurrencies trading on an
02:28 4 exchange.

02:28 5 Q. The last portion of that sentence
02:28 6 says "take place on the exchange itself or
02:29 7 elsewhere."

02:29 8 Do you see that?

02:29 9 A. I do.

02:29 10 Q. When you say "elsewhere," what do
02:29 11 you mean by that? Where else could offers or
02:29 12 trades on an exchange happen?

02:29 13 MS. ZORNBERG: Object to form.

02:29 14 A. Perhaps they might happen off
02:29 15 exchange.

02:29 16 Q. When you say "off exchange," can
02:29 17 you explain what you mean by that?

02:29 18 A. It can reference any number of
02:29 19 different market structure possibilities.

02:29 20 Q. Can you give me an example?

02:29 21 A. For example, over-the-counter
02:29 22 bilateral trades happen off exchange.

02:29 23 Q. Okay. The next sentence says:
02:29 24 "Based on my research and
02:29 25 experience, I conclude that offers to

02:30 1 buy and sell cryptocurrencies take place
02:30 2 on an exchange and become binding trades
02:30 3 as soon as they are matched within the
02:30 4 books and records of the exchange in
02:30 5 accordance with the rules of the
02:30 6 exchange."

02:30 7 Do you see that?

02:30 8 A. Yes.

02:30 9 Q. On what research is that
02:30 10 conclusion based?

02:30 11 A. That is based on my general body
02:30 12 of research, my work experience in
02:30 13 professional practice, as well as specific
02:30 14 research material that I reference in this
02:30 15 report.

02:30 16 Q. Okay. Is there a distinction
02:30 17 between research and experience in that
02:30 18 sentence?

02:30 19 A. For example, I have had
02:30 20 professional experience during which time I
02:31 21 was involved, as part of legal practice, in
02:31 22 advising on matters relating to exchanges,
02:31 23 clearinghouses, and other market
02:31 24 infrastructure providers.

02:31 25 Q. Is any of the experience that you

02:31 1 just discussed related to cryptocurrency
02:31 2 exchanges?

02:31 3 A. That experience happened in
02:31 4 the -- at a time when cryptocurrency exchanges
02:31 5 weren't around.

02:31 6 Q. Do you have any professional
02:31 7 experience relevant to -- strike that.

02:31 8 Do you have any professional
02:31 9 experience related to cryptocurrency exchanges
02:31 10 that's encompassed within your reference to
02:31 11 experience in paragraph 71?

02:31 12 A. So the --

02:31 13 MS. ZORNBERG: Object to form.

02:31 14 You can answer.

02:31 15 THE WITNESS: Sorry.

02:31 16 A. So the experience that I have in
02:31 17 professional practice included frequently
02:31 18 advising on and studying matters relating to
02:31 19 exchange design, transactions, payment
02:32 20 finality, and so forth.

02:32 21 In addition, the work that I was
02:32 22 doing as part of practice, as detailed in the
02:32 23 CV, also looked at payment services providers
02:32 24 and innovation in payment services.

02:32 25 Work in relation to

02:32 1 cryptocurrencies and cryptocurrency exchanges
02:32 2 is a very natural extension of the work that I
02:32 3 did in professional practice. That was
02:32 4 examining issues of exchange design, order
02:32 5 submission, settlement, finality, and risk
02:32 6 management.

02:32 7 As noted in this report, many
02:32 8 practices that are deployed by cryptocurrency
02:32 9 exchanges borrow heavily from existing
02:32 10 paradigms in traditional market design.

02:32 11 And that work I did extensively
02:32 12 throughout practice in my legal practice as
02:32 13 well as studied it as part of my research
02:32 14 thoroughly over this last decade.

02:32 15 Q. Just focusing on your legal
02:33 16 practice, did any of that touch on matters
02:33 17 related to cryptocurrency exchanges?

02:33 18 MS. ZORNBERG: Object to form.

02:33 19 A. That was at the time prior to
02:33 20 when cryptocurrencies were around, if one
02:33 21 takes Satoshi Nakamoto's 2008 paper as
02:33 22 potentially an origin point.

02:33 23 However, the experience that I
02:33 24 gleaned as part of that professional practice
02:33 25 provides a very natural foundation for

02:33 1 studying and analyzing the operations of
02:33 2 cryptocurrency exchanges.

02:33 3 Q. I think I follow what you're
02:33 4 saying, but I just want to make sure I
02:33 5 understand.

02:33 6 So none of your professional
02:33 7 experience had to do with cryptocurrency
02:33 8 exchanges, but it -- your professional
02:33 9 experience nevertheless informs your view in
02:33 10 the report?

02:33 11 A. It --

02:33 12 MS. ZORNBERG: Object to --
02:33 13 object to form.

02:33 14 Q. Is that fair?

02:33 15 A. My professional experience
02:33 16 informs my research and understanding of
02:33 17 cryptocurrency exchanges.

02:33 18 In addition, I would highlight my
02:34 19 policy experience that I've engaged in over
02:34 20 the last -- over a period of years, for
02:34 21 example, in relation to work with the CFTC,
02:34 22 where there has been discussion and
02:34 23 examination of various cryptocurrency-related
02:34 24 technologies.

02:34 25 Q. Other than your policy work, what

02:34 1 professional experience do you have strictly
02:34 2 related to cryptocurrency exchanges?

02:34 3 MS. ZORNBERG: I have a standing
02:34 4 objection to the word "professional,"
02:34 5 because I don't know if you mean law
02:34 6 firm or something broader.

02:34 7 Q. Do you have an understanding of
02:34 8 what I mean by "professional experience"?

02:34 9 A. My teaching and research
02:34 10 experience, if that -- I mean, I consider that
02:34 11 to be my professional experience as well.

02:34 12 And in that regard, in addition
02:34 13 to my practice work at Clifford Chance, which
02:34 14 provided a very granular understanding of
02:34 15 exchange design, I was advising very
02:35 16 frequently various market participants in
02:35 17 relation to issues pertaining to exchanges,
02:35 18 clearinghouses, finality, risk management, on
02:35 19 a cross-border basis.

02:35 20 I worked extensively, as noted
02:35 21 earlier, with the European Payments Council in
02:35 22 relation to developing rules and processes for
02:35 23 payment services on a Pan-European level.
02:35 24 Those -- that scheme, that governance
02:35 25 structure is still there today.

02:35 1 My professional experience in the
02:35 2 academic context includes extensive teaching.
02:35 3 I have taught -- I have taught
02:35 4 cryptocurrencies as part of my courses in
02:35 5 relation to financial markets innovation.
02:35 6 Currently I'm teaching a seminar on
02:35 7 cryptocurrencies that is focused exclusively
02:35 8 on cryptocurrencies.

02:35 9 In addition, of course, I'm
02:35 10 researching cryptocurrencies extensively as
02:35 11 part of my research agenda.

02:35 12 Q. When you were in private
02:35 13 practice, were any of your clients
02:35 14 cryptocurrency exchanges?

02:35 15 A. When I was in private practice?
02:36 16 At what time? When were you -- which practice
02:36 17 are you referring to?

02:36 18 Q. It doesn't matter for the scope
02:36 19 of my question. Any time you were in private
02:36 20 practice, were any of your clients
02:36 21 cryptocurrency exchanges?

02:36 22 MS. ZORNBERG: Object to form.

02:36 23 A. So when I was in private practice
02:36 24 in Clifford Chance in London, it would have
02:36 25 been impossible to have clients relating to

02:36 1 cryptocurrency exchanges, as that technology
02:36 2 did not exist as I understand it.

02:36 3 However, I did have, as noted,
02:36 4 plenty of clients that related to various
02:36 5 aspects of different exchange functions.
02:36 6 So -- and including clearing and settlement
02:36 7 systems, and obviously in relation to payment
02:36 8 systems as well.

02:36 9 Q. Okay. But you've never had a
02:36 10 client that actually was a cryptocurrency
02:36 11 exchange?

02:36 12 MS. ZORNBERG: Objection. Asked
02:36 13 and answered.

02:36 14 A. No, I haven't.

02:37 15 Q. Okay. The last sentence of
02:37 16 paragraph 71 says:

02:37 17 "Therefore, both offers and
02:37 18 trades occur on the exchange and at the
02:37 19 geographic location of the exchange."

02:37 20 Do you see that?

02:37 21 A. I do.

02:37 22 Q. Okay. What do you mean by "the
02:37 23 geographic location of the exchange"?

02:37 24 A. I mean where the exchange is
02:37 25 located.

02:37 1 Q. How does one make the
02:37 2 determination where an exchange is located?

02:37 3 A. In my opinion, I set out four
02:37 4 indicia that I considered to be the core
02:37 5 indicia for determining the location of a
02:37 6 cryptocurrency exchange.

02:37 7 Q. Did you create those core
02:37 8 indicia?

02:37 9 A. I did.

02:38 10 Q. Do you believe that those core
02:38 11 indicia are generally accepted in your field
02:38 12 as authoritative on determining the location
02:38 13 of a cryptocurrency exchange?

02:38 14 A. This is a new issue. The
02:38 15 criteria that I set out reflects what I
02:38 16 consider to be an informed understanding of
02:38 17 what I would imagine researchers in my field
02:38 18 would consider to be eminently reasonable and
02:38 19 correct as a way of identifying four core
02:38 20 criteria that would be dispositive in
02:38 21 determining the location of a cryptocurrency
02:38 22 exchange.

02:38 23 Q. Do you know one way or another
02:38 24 whether researchers in your field do consider
02:38 25 your criteria to be eminently reasonable and

02:38 1 correct?

02:38 2 MS. ZORNBERG: Object to form.

02:38 3 A. I've put forward these indicia in
02:38 4 this opinion. It's a new area. I have made
02:39 5 an attempt to put out four core indicia that I
02:39 6 consider to be very logical, very reasonable,
02:39 7 well-founded, that would govern and provide a
02:39 8 credible understanding of where an exchange is
02:39 9 located.

02:39 10 This is a new issue. I believe
02:39 11 if researchers in my field were to have a look
02:39 12 and consider this opinion, I imagine that they
02:39 13 would be very supportive of the reasoning and
02:39 14 the logic that is put forward in this opinion
02:39 15 with respect to these indicia.

02:39 16 Q. Did you consult with any of the
02:39 17 researchers in your field when forming your
02:39 18 indicia?

02:39 19 A. I did not. However, I have
02:39 20 relied on my extensive professional
02:39 21 experience, including legal practice, legal
02:39 22 research, and teaching as well in the area of
02:39 23 cross-border payments and cross-border
02:39 24 banking, to determine what I consider to be
02:39 25 four core indicia for determining the location

02:39 1 of a cryptocurrency exchange.

02:39 2 Q. To your knowledge, are any of the
02:40 3 researchers in your field aware of the four
02:40 4 indicia that you've selected to determine the
02:40 5 location of a cryptocurrency exchange?

02:40 6 MS. ZORNBERG: Object to form.

02:40 7 A. I do not believe so. This
02:40 8 opinion is confidential as far as I
02:40 9 understand.

02:40 10 Q. Have you ever read any academic
02:40 11 literature setting forth the four criteria
02:40 12 that you selected for determining the location
02:40 13 of a cryptocurrency exchange?

02:40 14 A. I have not but this is a new
02:40 15 issue. And my opinion provides an attempt to
02:40 16 set out four core indicia that I feel
02:40 17 is -- that I feel are logical, reasonable, and
02:40 18 well founded.

02:40 19 Q. Is it fair to say that because
02:40 20 this issue is so new, your four indicia could
02:40 21 not possibly be generally accepted in your
02:40 22 field yet?

02:40 23 MS. ZORNBERG: Object to form.

02:40 24 A. I disagree. I feel that the
02:40 25 indicia that I provided here is based on

02:40 1 extensive professional experience that comes
02:40 2 from a very close interaction with the
02:40 3 exchange industry, advising on issues with
02:41 4 respect to the cross-border migration of
02:41 5 value, capital, cash securities, assets
02:41 6 elsewhere, and dealing with where the location
02:41 7 of transactions may be and firms in that
02:41 8 context.

02:41 9 Furthermore, at the World Bank, I
02:41 10 was involved extensively in relation to
02:41 11 thinking about issues pertaining to
02:41 12 international insolvencies, thinking about
02:41 13 where assets might be located, where
02:41 14 jurisdiction might be established, for the
02:41 15 purposes of international insolvencies.

02:41 16 As far as my research is
02:41 17 concerned, I have worked extensively on issues
02:41 18 relating to cross-border finance,
02:41 19 international standard setting in that regard.

02:41 20 And so the indicia that I provide
02:41 21 here is based on an understanding of what four
02:41 22 core factors would be that would be supported
02:41 23 by that research and experience.

02:41 24 And so I believe that researchers
02:41 25 in my field would be supportive of the

02:42 1 conclusions I draw here.

02:42 2 Q. But there's no way to know for
02:42 3 sure because they're not aware of your
02:42 4 conclusions that you draw here. Correct?

02:42 5 MS. ZORNBERG: Objection. Asked
02:42 6 and answered.

02:42 7 A. I don't believe the opinion's
02:42 8 been seen. I believe it's a confidential
02:42 9 opinion.

02:42 10 Q. Okay. Can we go back to the end
02:42 11 of paragraph 33 which is on page 18. Can you
02:42 12 explain to me -- strike that.

02:43 13 Professor, do you see at the end
02:43 14 of paragraph 33 where you write:

02:43 15 "In this way, the 'floor' or
02:43 16 'pit' is now very much electronic and
02:43 17 essentially dematerialized."

02:43 18 Do you see that?

02:43 19 A. (Document review.)

02:43 20 Yes.

02:43 21 Q. Can you reconcile for me your
02:43 22 view that the trading function of an exchange
02:43 23 is essentially dematerialized with your
02:43 24 conclusion that an exchange has a geographical
02:43 25 location, as reflected at the end of paragraph

02:43 1 71?

02:43 2 MS. ZORNBERG: Object to form.

02:43 3 You can answer.

02:43 4 A. The opinion sets out four
02:43 5 criteria that are indicative of the location
02:44 6 of an exchange. Those four criteria provide
02:44 7 an understanding of what the institutional
02:44 8 existence of an exchange is. They provide and
02:44 9 link to the governance, the processes, the
02:44 10 rules of an exchange.

02:44 11 And so that is very much
02:44 12 consistent with the fact that an exchange runs
02:44 13 a electronic trading operation.

02:44 14 Q. And the electronic trading
02:44 15 operation is the part that's dematerialized in
02:44 16 your view. Is that correct?

02:44 17 A. The electronic trading operation,
02:44 18 parts of it may be very physical. They may
02:44 19 involve bricks and mortar, computers at the
02:44 20 exchange.

02:44 21 Q. Servers? Sorry.

02:44 22 A. So they may involve physical
02:45 23 aspects. "Dematerialized" refers to the fact
02:45 24 of electronic trading.

02:45 25 Q. And just to follow up, that

02:45 1 electronic trading operation would also
02:45 2 involve servers, too. Correct?

02:45 3 A. Coming back do my earlier answer,
02:45 4 a part of that operation, the matching of one
02:45 5 byte with another, b-y-t-e, with another, at
02:45 6 some point would likely involve the operation
02:45 7 of some server.

02:45 8 However, that trade process is
02:45 9 much bigger and deeper than the simple
02:45 10 mechanical matching of one byte, b-y-t-e, with
02:45 11 another.

02:45 12 Q. Is a trade final when -- strike
02:45 13 that.

02:45 14 Is a trade final upon the simple
02:45 15 mechanical matching of one byte with another
02:45 16 if the one byte on the one side is an offer to
02:45 17 buy and the other byte on the other side is an
02:45 18 offer to sell?

02:45 19 A. When trades match, they becoming
02:45 20 binding in accordance with the rules and
02:45 21 processes of an exchange.

02:46 22 Q. And I'm asking about when -- what
02:46 23 moment in time. So when the offer to buy byte
02:46 24 and the offer to sell byte meet somewhere, is
02:46 25 that the moment in which the trade is

02:46 1 finalized?

02:46 2 MS. BUNTING: Objection.

02:46 3 MS. ZORNBERG: Object to form.

02:46 4 Q. You can answer.

02:46 5 A. So that matches. However, that
02:46 6 also has to be recognized as matched by the
02:46 7 exchange. So the exchange has to validate
02:46 8 that matching.

02:46 9 It's not simply the case that one
02:46 10 electron interacts with another electron in
02:46 11 space. The exchange has to give it form. And
02:46 12 the exchange has to validate that interaction
02:46 13 with its own rules and processes to determine
02:46 14 whether that electron matching was done in a
02:46 15 valid way in accordance with the exchange's
02:46 16 rules and processes.

02:46 17 Q. So it's your view that the trade
02:46 18 is finalized at some moment in time past the
02:46 19 matching of the offer to buy byte and the
02:46 20 offer to sell byte?

02:46 21 MS. ZORNBERG: Objection.

02:46 22 A. The point I'm making is
02:46 23 conceptual. The conceptual point I'm making
02:47 24 here is that the electron matching of one
02:47 25 electron with another isn't sufficient.

02:47 1 The exchange has to be present in
02:47 2 its rules and processes to validate that
02:47 3 matching is providing a binding trade on the
02:47 4 platform of the exchange.

02:47 5 Q. Okay. Let me pose a
02:47 6 hypothetical. If I'm sitting at my computer
02:47 7 and I enter a keystroke in which I offer to
02:47 8 buy on a cryptocurrency exchange, in your
02:47 9 view, is the trade final?

02:47 10 MS. BUNTING: Objection.

02:47 11 A. No.

02:47 12 Q. Okay. What needs to happen next?

02:47 13 A. So once you've submitted an order
02:47 14 to buy, where has that -- where have you
02:47 15 submitted that order?

02:48 16 Q. Let's say Binance.

02:48 17 (Stenographer clarification.)

02:48 18 A. So once you've submitted that
02:48 19 order into the -- Binance's order submission
02:48 20 system, that order has to then -- that
02:48 21 instruction, rather, has then to be turned
02:48 22 into an order.

02:48 23 So the instruction that you gave
02:48 24 into the Binance order submission system then
02:48 25 has to be digested by that order submission

02:48 1 system, vetted, validated, and then it enters
02:48 2 the matching engine of Binance, whereupon it
02:48 3 may match with another corresponding offer.
02:48 4 And as and when that happens, a trade becomes
02:48 5 final.

02:48 6 Q. When after the matching of my
02:48 7 offer to buy with the offer to sell does the
02:48 8 trade become final?

02:48 9 A. Ideally, that process should
02:48 10 happen as soon as possible afterwards.

02:48 11 Q. Let me ask a better question.
02:48 12 What has to happen after my offer
02:49 13 to buy and the other person's offer to sell
02:49 14 match in order for the trade to become final?

02:49 15 A. As soon as it matches, the
02:49 16 exchange determines that it's final. But that
02:49 17 matching process is set up in such a way that
02:49 18 the orders that are coming into the exchange
02:49 19 are vetted and validated as orders recognized
02:49 20 by the exchange's order submission system.
02:49 21 Once that's done, those orders match and they
02:49 22 become final.

02:49 23 Q. So if the exchange's rules are
02:49 24 such that the trade becomes final on matching,
02:49 25 then the moment in time it becomes final is

02:49 1 when my offer to buy meets the other person's
02:49 2 offer to sell?

02:49 3 A. As soon as possible afterwards.

02:49 4 Q. Okay. Turning back to paragraph
02:50 5 71, you use the word "offer" in the -- strike
02:50 6 that.

02:50 7 You use the word "offer"
02:50 8 throughout paragraph 71.

02:50 9 In that paragraph, are you
02:50 10 offering any opinion on the meaning of the
02:50 11 term "offer" under the Securities Act of 1933?

02:50 12 A. I am not.

02:50 13 Q. Okay. And when you use the word
02:50 14 "offer," are you intending to use it
02:50 15 co-extensively with the meaning of the word
02:50 16 "offer" under the Securities Act of 1933?

02:50 17 MS. ZORNBERG: Objection. Asked
02:50 18 and answered.

02:50 19 Are you specific to paragraph 71
02:50 20 still?

02:50 21 MR. SYLVESTER: Yes.

02:50 22 A. I am not.

02:50 23 Q. Okay. Is there any place in your
02:50 24 report where you use the word "offer" and you
02:50 25 intend it to be co-extensive with the meaning

02:51 1 of the term "offer" in the Securities Act of
02:51 2 1933?

02:51 3 A. I do not.

02:51 4 Q. Okay. Is it your opinion that in
02:51 5 the case of each unit of XRP offered by
02:51 6 defendants, defendant's offer was limited to
02:51 7 the entry of a buy-or-sell order on a
02:51 8 cryptocurrency exchange?

02:51 9 MS. ZORNBERG: Objection.

02:51 10 A. I'm sorry. Can you repeat the
02:51 11 question.

02:51 12 Q. Sure. Is it your opinion that in
02:51 13 the case of each unit of XRP offered by
02:51 14 defendants, defendants' offer was limited to
02:51 15 the entry of a buy-or-sell order on a
02:51 16 cryptocurrency exchange?

02:51 17 MS. ZORNBERG: Objection.

02:51 18 A. My opinion here --

02:51 19 MS. ZORNBERG: Outside the scope.

02:51 20 THE WITNESS: Sorry.

02:51 21 A. My opinion here relates to the
02:51 22 question about how offers to buy and sell
02:51 23 cryptocurrencies in exchange are made and
02:51 24 become final and where the exchange is then
02:51 25 located.

02:52 1 Q. As part of your work on your --
02:52 2 strike that.

02:52 3 As part of forming your expert
02:52 4 opinion, did you consider the geographic
02:52 5 location where orders to buy or sell XRP were
02:52 6 placed?

02:52 7 MS. ZORNBERG: Object to form.

02:52 8 A. I'm sorry, could you repeat the
02:52 9 question.

02:52 10 Q. Sure. As part of your work
02:52 11 forming your opinion, did you consider the
02:52 12 geographic location where orders to buy or
02:52 13 sell XRP were placed?

02:52 14 MS. ZORNBERG: Object to form.

02:52 15 A. In forming my opinion, I
02:52 16 considered the microstructural processes for
02:52 17 submitting orders to an exchange in order to
02:52 18 determine how these microstructural processes
02:52 19 operate to make the offer to buy and sell a
02:53 20 cryptocurrency final on a cryptocurrency
02:53 21 exchange.

02:53 22 Q. Can you define "microstructural
02:53 23 processes" as you just used it in your answer?

02:53 24 A. Sure. There's no defined term as
02:53 25 such with respect to microstructure; however,

02:53 1 broadly speaking, this refers to the detailed
02:53 2 processes, operational processes by which
02:53 3 trades happen and value moves within an
02:53 4 exchange.

02:53 5 Q. As part of forming your opinions
02:53 6 set forth in your report, did you consider
02:53 7 where the -- a person submitting an offer to
02:53 8 buy or sell on an exchange was physically
02:53 9 located?

02:53 10 A. What I considered in my opinion
02:53 11 was how offers to buy and sell a
02:53 12 cryptocurrency are made in order for these
02:53 13 offers to be valid orders on an exchange that
02:53 14 become binding on that exchange.

02:54 15 As part of that process, I
02:54 16 detailed the order submission processes that
02:54 17 allow orders to be made and become valid and
02:54 18 binding for trades to take place on an
02:54 19 exchange.

02:54 20 Q. In your view and in your opinion,
02:54 21 is there any relevance to where an individual
02:54 22 trader is located in the world when he or she
02:54 23 places an order on an exchange?

02:54 24 A. What do you mean by "place an
02:54 25 order"?

02:54 1 Q. Let's go back to my example.
02:54 2 Let's go back to the hypothetical. I'm going
02:54 3 to place an order on Binance. Two
02:54 4 hypotheticals. In one, I'm sitting here in
02:54 5 New York City. Another one, I'm sitting in
02:54 6 London.

02:54 7 Does the difference between my
02:54 8 physical location in placing an offer to buy
02:54 9 on Binance have any relevance whatsoever to
02:54 10 your opinion about where an order takes place?

02:54 11 A. No.

02:54 12 MS. ZORNBERG: Objection -- I'm
02:54 13 going to object to the form, although
02:54 14 the witness answered.

02:55 15 Q. And as part of forming your
02:55 16 opinions in this case, did you consider the
02:55 17 geographic location that title passed in
02:55 18 transactions involving the purchase or sale of
02:55 19 XRP?

02:55 20 MS. ZORNBERG: Object to form.

02:55 21 A. Could you repeat the question.

02:55 22 Q. Sure. In forming your opinions
02:55 23 in this case, did you consider the geographic
02:55 24 location that title passed in transactions
02:55 25 involving the purchase or sale of XRP?

02:55 1 MS. ZORNBERG: Same objection.

02:55 2 A. The purchase and sale of XRP. In
02:55 3 what context are you discussing this?

02:55 4 Q. The purchase of XRP on
02:55 5 cryptocurrency exchanges.

02:55 6 A. Could you repeat the question
02:55 7 again.

02:55 8 Q. Sure.

02:55 9 MS. BUNTING: Could you slow it
02:55 10 down a bit, Mark. It's just a bit fast.

02:55 11 MR. SYLVESTER: Sure.

02:55 12 Q. In forming your opinions in this
02:55 13 case, did you consider the geographic location
02:55 14 that title passed in transactions involving
02:55 15 the purchase or sale of XRP on cryptocurrency
02:55 16 exchanges?

02:55 17 A. My --

02:55 18 MS. ZORNBERG: Objection.

02:55 19 A. -- opinion, I looked at how
02:55 20 offers to buy and sell cryptocurrencies are
02:55 21 made on an exchange, how they become final in
02:55 22 the exchange, final and binding on the
02:56 23 exchange, and where the exchange is located.

02:56 24 Q. Is it of any relevance to your
02:56 25 opinion where title is passed in a sale on a

02:56 1 cryptocurrency exchange?

02:56 2 MS. ZORNBERG: Objection.

02:56 3 A. Could you repeat the question
02:56 4 again.

02:56 5 Q. Sure. Is it of any relevance to
02:56 6 your opinion where title is passed for any
02:56 7 given sale on a cryptocurrency exchange?

02:56 8 A. No.

02:56 9 Q. Okay. Is it -- was it of any
02:56 10 relevance to your expert opinion the
02:56 11 geographic location in which payment was
02:56 12 exchanged for any transaction that occurred on
02:56 13 a cryptocurrency exchange?

02:56 14 MS. ZORNBERG: Object to form.

02:56 15 A. So in looking at the question of
02:56 16 how offers to buy and sell cryptocurrencies
02:57 17 are made on an exchange and become binding on
02:57 18 the exchange and its location, I -- it's not
02:57 19 relevant to my opinion regarding payment.

02:57 20 Q. Was it of any relevance to your
02:57 21 opinion -- strike that.

02:57 22 Was the geographic location of
02:57 23 any contracts for the purchase or sale of a
02:57 24 digital asset of any relevance to your opinion
02:57 25 in this case?

02:57 1 A. I'm not sure what you mean by
02:57 2 that.

02:57 3 Q. Under the user agreements you
02:57 4 reviewed, at some point, a trader on a
02:57 5 cryptocurrency exchange becomes bound
02:57 6 to -- strike that.

02:57 7 Is there a point in a
02:57 8 cryptocurrency transaction in which a trader
02:58 9 becomes bound to -- becomes bound to his offer
02:58 10 to buy or sell?

02:58 11 MS. ZORNBERG: On an exchange?

02:58 12 MR. SYLVESTER: On an exchange.

02:58 13 A. Well, yes. When the orders to
02:58 14 buy and sell match, that transaction becomes
02:58 15 binding on the participants that submit that
02:58 16 order.

02:58 17 Q. Was where the orders to buy and
02:58 18 sell match of any relevance to you in
02:58 19 determining where a cryptocurrency exchange
02:58 20 was located for purposes of your opinion?

02:58 21 MS. ZORNBERG: Object to form.

02:58 22 A. In my opinion, orders to buy and
02:58 23 sell are matched by the exchange and on the
02:58 24 exchange. And so they happen at the location
02:58 25 of the exchange, as set out in this opinion.

02:58 1 Q. In your opinion, is it possible
02:59 2 for parties to trade on an exchange and become
02:59 3 bound to the transaction at two separate times
02:59 4 or locations?

02:59 5 A. In my opinion, parties become
02:59 6 bound to the transaction once orders to buy
02:59 7 and sell the cryptocurrency are made on the
02:59 8 exchange and made binding by the exchange in
02:59 9 accordance with its rules and processes and at
02:59 10 the geographic location of the exchange.

02:59 11 Q. Did any of the user agreements
02:59 12 that you reviewed in connection with your work
02:59 13 on this case expressly state where trades of
02:59 14 digital assets occur?

02:59 15 A. I'm not sure what you mean by
02:59 16 that.

02:59 17 Q. Did any of the user agreements
02:59 18 that you reviewed in this case state, "The
02:59 19 trades on this exchange occur in," and then
02:59 20 name a jurisdiction?

03:00 21 A. Many of the user agreements that
03:00 22 I reviewed, most of them, had some kind of
03:00 23 governing law provision attached to it. And
03:00 24 that governing law provision would govern
03:00 25 presumably whatever rule book and terms of

03:00 1 services apply to the parties that are
03:00 2 transacting on the exchange.

03:00 3 Q. I'm asking something a little
03:00 4 narrower, though, just about your review of
03:00 5 the words that are in the user agreements.

03:00 6 Did any of those user agreements
03:00 7 expressly state, "The trades on our exchange
03:00 8 take place in X jurisdiction"?

03:00 9 A. I can't recall.

03:00 10 Q. If you had seen those words or
03:00 11 language similar to that in a user agreement,
03:00 12 do you think you would have put that in your
03:00 13 report?

03:00 14 MS. ZORNBERG: Objection.

03:00 15 A. Yes.

03:01 16 Q. Why?

03:01 17 A. May be a consideration to think
03:01 18 about.

03:01 19 Q. Let's look at paragraph 77,
03:01 20 please. I'm looking at the bottom of -- the
03:01 21 portion of 77 that's on page 42, starting with
03:01 22 "In other words, parties do not generally
03:01 23 know."

03:01 24 Do you see where I am? It's the
03:01 25 last, say, five lines of paragraph 77 on page

03:02 1 42.

03:02 2 A. (Document review.)

03:02 3 Okay.

03:02 4 Q. You write:

03:02 5 "In other words, parties do not
03:02 6 generally know in advance with whom they
03:02 7 are trading. They cannot submit an
03:02 8 offer with the express aim of trading
03:02 9 with a specific party on the other side.
03:02 10 It seems extremely unlikely that
03:02 11 cryptocurrency exchanges would depart
03:02 12 from this model."

03:02 13 Do you see that?

03:02 14 A. Yes.

03:02 15 Q. Do you know one way or another
03:02 16 whether or not cryptocurrency exchanges
03:02 17 actually do depart from this model?

03:03 18 A. Whether they do?

03:03 19 Q. Mm-hmm.

03:03 20 MS. ZORNBERG: Object to form.

03:03 21 A. Candidly, it would be unthinkable
03:03 22 and possibly create a venue that is rife with
03:03 23 manipulation if they did. So in my mind, any
03:03 24 exchange that did would be a completely
03:03 25 disreputable exchange.

03:03 1 Q. Be that as it may, sitting here
03:03 2 today, do you know whether or not any
03:03 3 cryptocurrency exchanges actually do depart
03:03 4 from this model?

03:03 5 A. I can't say for sure. I would be
03:03 6 shocked if they did. In the user agreements
03:03 7 that I looked at, there were at least two,
03:03 8 DigiFinex and BitMax, whose language made
03:03 9 clear that trading in these spaces is
03:03 10 anonymous.

03:03 11 It is a absolutely cardinal rule
03:03 12 of traditional marketplaces, modern electronic
03:04 13 marketplaces, that pretrade anonymity be
03:04 14 sacrosanct.

03:04 15 Given how deeply cryptocurrency
03:04 16 exchanges borrow from traditional rules and
03:04 17 processes of traditional exchanges, and
03:04 18 particularly given how important this
03:04 19 principle is, especially arguably in the
03:04 20 context of cryptocurrencies, I would be truly
03:04 21 shocked if an exchange, cryptocurrency
03:04 22 exchange, did not have pretrade anonymity as
03:04 23 part of its offering.

03:04 24 Q. Understood. But do you know one
03:04 25 way or the other?

03:04 1 MS. ZORNBERG: Objection.

03:04 2 A. With respect to BitMEX, with
03:04 3 respect to DigiFinex, their rules of service
03:04 4 certainly suggest that transactions are
03:04 5 safeguarding pretrade anonymity.

03:05 6 Furthermore, the order submission
03:05 7 processes that are described in the user
03:05 8 agreements that I've reviewed for most of the
03:05 9 exchanges in Table A certainly seem to suggest
03:05 10 that trading there is anonymous.

03:05 11 For example, the user -- the
03:05 12 order submission paragraphs do not require
03:05 13 that one specifies a particular party to
03:05 14 transact with. They simply refer to the
03:05 15 placing of a buying and selling order into the
03:05 16 order -- into the order submission system.

03:05 17 Q. Let's go to paragraph 83, please.
03:06 18 My question is: Is the question of the point
03:06 19 at which an offer to trade made on an exchange
03:06 20 becomes binding controlled by the contractual
03:06 21 provisions of an exchange's user agreement?

03:06 22 A. I'm so sorry. I was just reading
03:06 23 that paragraph.

03:06 24 Q. Sure. Did you want to continue?
03:06 25 I --

03:06 1 A. If you can give me just two
03:06 2 seconds.

03:06 3 Q. Of course. Go ahead.

03:06 4 A. Thank you.

03:06 5 (Document review.)

03:06 6 Q. So may question was: Is the
03:07 7 question of the point at which an offer to
03:07 8 trade made on an exchange becomes binding
03:07 9 controlled by the contractual provisions of
03:07 10 the user agreement of that exchange?

03:07 11 A. Those are -- those user
03:07 12 agreements stipulate the rules of the road as
03:07 13 between the exchange and the user. The
03:07 14 exchange establishes its order submission,
03:07 15 matching, and finality procedures, and users
03:07 16 agree to be subject to those submission,
03:07 17 matching, and finality procedures.

03:07 18 Q. So is it fair to say that those
03:07 19 user agreements govern the question of when an
03:07 20 offer to trade made on an exchange becomes
03:07 21 binding?

03:07 22 A. They govern the bargain reached
03:07 23 between the exchange and the user to determine
03:07 24 when orders to buy and sell a cryptocurrency
03:07 25 become binding and final on the exchange.

03:07 1 Q. Is there anything outside of the
03:08 2 user agreement that is relevant to the
03:08 3 question of when an offer to trade on an
03:08 4 exchange becomes binding?

03:08 5 MS. ZORNBERG: Object to form.

03:08 6 A. I'm not sure what you mean.

03:08 7 Q. We can move on. Looking at the
03:08 8 last two sentences of paragraph 83, you write:

03:08 9 "As per my review of various user
03:08 10 agreements, these rules establish, inter
03:09 11 alia, processes and procedures relating
03:09 12 to dispute resolution, governing law,
03:09 13 place of domicile, and incorporation.
03:09 14 In doing so, they also work to tie an
03:09 15 exchange more formally to a geographic
03:09 16 locale as a matter of its operation and,
03:09 17 arguably, also in the expectations of
03:09 18 those that use the venue."

03:09 19 Can you explain how the processes
03:09 20 and procedures relating to dispute resolution,
03:09 21 governing law, place of domicile, and
03:09 22 incorporation work to tie an exchange more
03:09 23 formally to a geographic locale as a matter of
03:09 24 its operation?

03:09 25 A. So here the terms of service

03:09 1 often include a governing law, as set out in
03:09 2 Table A, for the different exchanges. That
03:10 3 governing law can determine any number of
03:10 4 important issues, for example, in relation to
03:10 5 asset distribution, potentially, upon an
03:10 6 exchange's insolvency, for example.

03:10 7 And so in so doing, the terms of
03:10 8 service and the procedures that establish
03:10 9 where governing law -- what governing law
03:10 10 applies to that will tie the geographic
03:10 11 location of the exchange more closely to the
03:10 12 exchange's terms of service and its terms of
03:10 13 operation.

03:10 14 Q. In the last sentence of paragraph
03:10 15 83, can you explain what you mean by the
03:10 16 phrase "as a matter of its operation"?

03:10 17 A. Yes. What I mean in general is
03:11 18 the -- as a part of its institutional
03:11 19 existence.

03:11 20 Q. Is there a particular operational
03:11 21 component to its institutional existence that
03:11 22 you're referencing in the last sentence of
03:11 23 paragraph 83?

03:11 24 A. What I mean here is that these
03:11 25 user agreements tie the general workings and

03:11 1 institutional existence of an exchange more
03:11 2 closely to its geographic location.

03:11 3 Q. In your view, does the
03:11 4 understanding of market participants affect
03:11 5 the actual geographic location where trading
03:11 6 platforms match trades?

03:11 7 MS. ZORNBERG: Objection. Asked
03:11 8 and answered.

03:11 9 You can answer.

03:11 10 A. So as set out in Table A, and as
03:12 11 detailed in this opinion, I set out four core
03:12 12 indicia that I believe are credible and
03:12 13 informative in providing an analysis of where
03:12 14 an exchange is located.

03:12 15 And one of these criteria
03:12 16 includes the assessment of reasonable market
03:12 17 participants as to where they think an
03:12 18 exchange is located.

03:12 19 Q. And does your opinion -- strike
03:12 20 that.

03:12 21 Are you offering an opinion on
03:12 22 what reasonable market participants believe as
03:12 23 to the locations of all of the exchanges
03:12 24 listed in your Table A?

03:12 25 A. I'm not.

03:12 1 Q. To take, for example, Bitlish,
03:13 2 which appears to be incorporated in the United
03:13 3 Kingdom -- I'm looking at page 61.

03:13 4 Do you see that?

03:13 5 A. Yes.

03:13 6 Q. If, for some strange reason,
03:13 7 everyone who traded on Bitlish thought that
03:13 8 Bitlish was located in the United States,
03:13 9 would that have any bearing on where Bitlish
03:13 10 was actually located?

03:13 11 A. So the four criteria that I set
03:13 12 out here provide a guidepost for determining
03:13 13 the location of an exchange and in determining
03:13 14 whether we can exclude or include the US as a
03:13 15 place where these exchanges may be located.

03:13 16 If one of these criteria were to
03:13 17 refer to the US as a possible location, that
03:13 18 would be a part of thinking about whether the
03:13 19 US could be excluded as a possible location or
03:13 20 included.

03:13 21 Q. So if your average trader thought
03:14 22 Bitlish was located in the United States,
03:14 23 would you then have included Bitlish within
03:14 24 the four that have some indicia of US contact?

03:14 25 A. If market participants believed

03:14 1 that Bitlish was located in the United States,
03:14 2 then I could not exclude Bitlish as an
03:14 3 exchange that wasn't located in the United
03:14 4 States. In other words, that would be part of
03:14 5 the four exchanges that have indicia of
03:14 6 location in the US.

03:14 7 Q. Okay. And for all of the
03:14 8 exchanges that are listed in your Table A
03:14 9 what, if anything, did you do to determine
03:14 10 what actual market participants believe as to
03:14 11 where these exchanges are located?

03:14 12 A. In terms of trying to determine
03:14 13 or trying to gauge the perception of market
03:14 14 participants, I looked at credible news
03:15 15 sources to get a sense of where the general
03:15 16 perception of location is likely to be.

03:15 17 Q. What credible news sources did
03:15 18 you review?

03:15 19 A. They are set out here in the
03:15 20 footnotes.

03:15 21 Q. How did you locate these news
03:15 22 sources?

03:15 23 A. I --

03:15 24 Q. Strike that. Actually, I want to
03:15 25 clarify. When you say they're set out here in

03:15 1 the footnotes, are you referring to the
03:15 2 footnotes that appear under Table A?

03:15 3 A. That's right.

03:15 4 Q. Okay. Let me re-ask the
03:15 5 question.

03:15 6 How did you locate the news
03:15 7 sources listed on the footnotes under Table A?

03:15 8 A. Asked counsel for assistance in
03:15 9 helping collect reputable news articles that
03:15 10 would reference particular exchanges set out
03:15 11 in Table A.

03:15 12 I reviewed and checked and went
03:16 13 through these articles to determine if they
03:16 14 provided a credible gauge in my opinion, and
03:16 15 then I -- these were included as part of Table
03:16 16 A's indicia as to the perception of market
03:16 17 participants with respect to each exchange.

03:16 18 Q. What instructions, if any, did
03:16 19 you give counsel on how to locate materials
03:16 20 that supplied you with the views of market
03:16 21 participants as to where cryptocurrency
03:16 22 exchanges are located?

03:16 23 MS. ZORNBERG: Hold on just a
03:16 24 minute. I just want to consult on a
03:16 25 privilege question.

03:16 1 MR. SYLVESTER: Yes, of course.
03:16 2 Let's go off the record while you guys
03:16 3 consult, please.

03:16 4 THE VIDEOGRAPHER: The time is
5 3:16 p.m. This concludes Media 5. Off
6 the record.

7 (Recess taken from 3:16 p.m. to
8 3:25 p.m.)

9 THE VIDEOGRAPHER: The time now
10 is 3:25 p.m. This begins Media 6. On
11 the record.

03:25 12 MS. ZORNBERG: Okay. Thank you.
03:25 13 So Mr. Sylvester, we took a short break
03:25 14 in response to your last question
03:25 15 because of concerns so I could consult
03:25 16 with cocounsel about issues that touch
03:25 17 on privilege.

03:25 18 And I would just like to make a
03:25 19 proffer to see if it helps us move
03:25 20 forward. If not, we'll take it question
03:25 21 by question, of course.

03:25 22 But the proffer is that there was
03:25 23 dialogue by Professor Yadav with counsel
03:25 24 in relation to selecting sources that
03:25 25 she wished to use for her report.

03:25 1 Professor Yadav made the
03:25 2 determinations ultimately after viewing
03:26 3 materials about which sources she would
03:26 4 use, and she's testified to her process
03:26 5 for that.

03:26 6 The concern touching on privilege
03:26 7 and attorney work product is that the
03:26 8 nature of the dialogue was -- it's
03:26 9 intertwined in a way that I think makes
03:26 10 it difficult for her to answer the
03:26 11 questions -- your question more
03:26 12 specifically without getting into
03:26 13 communications with counsel.

03:26 14 So first, let me just ask
03:26 15 Professor Yadav if what I've said in
03:26 16 terms of the proffer about dialogue with
03:26 17 counsel is accurate to your knowledge?

03:26 18 THE WITNESS: To my knowledge,
03:26 19 yes.

03:26 20 MS. ZORNBERG: So that's the
03:26 21 proffer. I don't know if that helps
03:26 22 you, there was testimony this morning
03:26 23 under questioning by Ms. Stewart about
03:26 24 her process so we can -- beyond that, we
03:26 25 can take it one by one if you'd like.

03:26 1 MR. SYLVESTER: That sounds good.
03:26 2 And just for the record, I'm only
03:27 3 concerned with any instructions that the
03:27 4 professor gave to anyone, counsel or
03:27 5 otherwise, performing work on her behalf
03:27 6 to prepare her opinions in this report.
03:27 7 I'm not interested in work product
03:27 8 flowing from counsel to Professor Yadav.
03:27 9 Understanding --

03:27 10 MS. ZORNBERG: Yeah.

03:27 11 MR. SYLVESTER: I think what
03:27 12 you're saying is that it might be hard
03:27 13 to separate the two.

03:27 14 MS. ZORNBERG: That's the issue.

03:27 15 MR. SYLVESTER: But maybe I can
03:27 16 ask you the question and see if it's
03:27 17 possible for you to answer, strictly
03:27 18 your instructions to counsel, that
03:27 19 direction.

03:27 20 Which I think we both agree it
03:27 21 can't be work product.

03:27 22 MS. ZORNBERG: Well, I'm not sure
03:27 23 that it can't be work product. Let me
03:27 24 make the proffer a little bit more
03:27 25 specific. I'll ask professor Yadav to

03:27 1 confirm so you understand the nature.

03:27 2 MR. SYLVESTER: Okay.

03:27 3 MS. ZORNBERG: If the instruction
03:27 4 was a request for the research
03:27 5 assistants to identify and pull together
03:27 6 articles from reputable sources, and
03:28 7 then the dialogue with counsel that
03:28 8 followed was a dialogue surrounding
03:28 9 sources in relation to her request for
03:28 10 assistance, we don't think it's
03:28 11 appropriate for her to get into the back
03:28 12 and forth of that dialogue.

03:28 13 And ultimately what came out of
03:28 14 it was a set of materials that she
03:28 15 reviewed to decide what to include or
03:28 16 not include in her report.

03:28 17 Professor Yadav, is that a fair
03:28 18 statement?

03:28 19 THE WITNESS: That's fair.

03:28 20 MR. SYLVESTER: Okay. What I'm
03:28 21 struggling with is just, you know, if
03:28 22 she had asked a research assistant
03:28 23 instead of counsel, then I'd have a
03:28 24 perfect view of exactly the methodology
03:28 25 she conducted that's baked into Table A.

03:28 1 And if she asked counsel instead
03:28 2 of a research assistant, it seems like
03:28 3 there's little bit of a black box as to
03:28 4 the methodology. That's, sort of, what
03:28 5 I'm hearing.

03:28 6 MS. ZORNBERG: I disagree with
03:28 7 that in the sense that she has
03:28 8 already -- Professor Yadav has already
03:29 9 testified that she sought assistance of
03:29 10 counsel in locating media, public media
03:29 11 sources on the exchanges in Table A.

03:29 12 There's been a proffer that
03:29 13 Professor Yadav has confirmed that she
03:29 14 had a dialogue with counsel in relation
03:29 15 to her specific request that they assist
03:29 16 in pulling sources. She's provided
03:29 17 testimony that counsel did, in fact,
03:29 18 pull together a set of materials to give
03:29 19 her for consideration and review.

03:29 20 She's testified about her process
03:29 21 of reviewing them. She's testified that
03:29 22 she included it in her report the ones
03:29 23 she found to be credible, and the report
03:29 24 extensively identifies each one of those
03:29 25 media articles.

03:29 1 MR. SYLVESTER: Okay. I hear
03:29 2 you. I'm not sure that quite addresses
03:29 3 my concerns. But I think I have a
03:29 4 couple questions that I'll ask and just
03:29 5 see if you're able to answer them.

03:29 6 MR. SOLOMON: Hey Mark, if I can
03:29 7 just say it in a slightly different way,
03:29 8 maybe it will help. Probably saying the
03:29 9 same thing.

03:29 10 But, you know, she -- if she
03:29 11 relies on facts or assumptions that she
03:30 12 used to form her opinions about that,
03:30 13 that's fair game and you can ask about
03:30 14 that. You can ask about assumptions,
03:30 15 you can ask about facts. Those are not
03:30 16 privileged.

03:30 17 But other than facts or
03:30 18 assumptions that she considered or
03:30 19 relied on, we believe that
03:30 20 communications with counsel are
03:30 21 privileged. And those communications
03:30 22 could be compromised by her explaining
03:30 23 to you direction, express direction she
03:30 24 gave to lawyers for Mr. Garlinghouse,
03:30 25 Mr. Larsen, or Ripple in connection with

03:30 1 preparation of her report.

03:30 2 Now, you're fine asking her
03:30 3 obviously, you know, did you rely on
03:30 4 this? Why would you rely on it? Why
03:30 5 did you think that was credible?

03:30 6 But we're just trying to avoid a
03:30 7 situation where she's telling you what
03:30 8 she told lawyers. That would be what we
03:30 9 believe to be privileged communications,
03:30 10 outside of facts and assumptions that
03:30 11 she used in connection with her report.

03:30 12 That's our position. And I think
03:30 13 we're going to stick to that position.
03:30 14 So --

03:30 15 MR. SYLVESTER: I understand. I
03:30 16 think the use of lawyers in this
03:30 17 particular instance seems to insulate
03:31 18 some questioning from our perspective on
03:31 19 her methodology. That's my view. But
03:31 20 we can take it a couple at a time.

03:31 21 MS. ZORNBERG: We'll disagree on
03:31 22 that but ...

03:31 23 MR. SYLVESTER: Okay.

03:31 24 BY MR. SYLVESTER:

03:31 25 Q. So let me ask you this: If it's

03:31 1 possible to just isolate instructions you gave
03:31 2 counsel, perhaps at the beginning of the
03:31 3 process, what instructions, if any, did you
03:31 4 give to counsel on how to locate materials
03:31 5 that supplied you with views of market
03:31 6 participants as to where a cryptocurrency
03:31 7 exchange was located?

03:31 8 MS. ZORNBERG: Okay. So
03:31 9 Professor Yadav, I'm going to instruct
03:31 10 you to answer that question only if you
03:31 11 can do so in a way that is not
03:31 12 intertwined with substantive dialogue
03:31 13 and communications with counsel. In
03:31 14 other words, a back and forth.

03:31 15 A. At the very broadest level, I
03:31 16 requested assistance in identifying
03:31 17 information on various exchanges in Table A
03:31 18 from reputable news sources.

03:32 19 Q. Did you identify for counsel what
03:32 20 news sources you believed to be reputable?

03:32 21 MS. ZORNBERG: Hold it. You can
03:32 22 answer that -- again, I think the
03:32 23 instruction is that you can answer that
03:32 24 if there's a clear yes or no, or
03:32 25 something that you can say that does not

03:32 1 involve a dialogue between you and
03:32 2 counsel, sort of a back-and-forth
03:32 3 discussion.

03:32 4 A. Would you repeat the question,
03:32 5 please.

03:32 6 MR. SYLVESTER: Madam court
03:32 7 reporter, would you mind reading that
03:32 8 back, please.

03:32 9 (Record read by the certified
03:32 10 stenographer as follows:

03:32 11 "QUESTION: "Did you identify for
03:32 12 counsel what news sources you believed
03:33 13 to be reputable?"

03:33 14 A. On a general level, yes.

03:33 15 Q. How did you determine that the
03:33 16 sources in your report are reputable news
03:33 17 sources on the topic of what market
03:33 18 participants believe as to where
03:33 19 cryptocurrency exchanges are located?

03:33 20 A. So the methodology I used there
03:34 21 was based on my professional judgment, my
03:34 22 research into cryptocurrency markets
03:34 23 generally, my general reading and interest in
03:34 24 this market to consider and identify sources
03:34 25 that I believe to be credible and that are

03:34 1 doing well-sourced, thoughtful, nuanced
03:34 2 reporting on how cryptocurrency exchanges
03:34 3 operate and how users interact with these
03:34 4 exchanges.

03:34 5 Q. What criteria did you apply when
03:34 6 determining whether or not a particular news
03:34 7 source was credible?

03:34 8 MS. ZORNBERG: Object to form.

03:34 9 A. So in general, I relied on my own
03:34 10 experience with that news source, reading
03:34 11 about cryptocurrency exchanges in general as
03:34 12 part of my research -- as part of my research,
03:34 13 as part of my teaching.

03:34 14 This judgment as to which news
03:35 15 sources I believe to be credible came from
03:35 16 that reading and my experience with absorbing
03:35 17 news from particular sources that I considered
03:35 18 to be especially thoughtful, well resourced,
03:35 19 well sourced, and that appear to be well
03:35 20 connected with the overall conversation in
03:35 21 relation to the cryptocurrency ecosystem.

03:35 22 Q. Were there any sources that you
03:35 23 were presented with that you rejected as
03:35 24 unreliable?

03:35 25 A. I can't recall specifically.

03:35 1 Q. Okay. Of the exchanges whose
03:35 2 user agreements you reviewed, are there any
03:35 3 other than Bittrex that use on-chain
03:35 4 settlement?

03:35 5 A. I think there may have been one
03:35 6 that uses on-chain settlement, one other one.
03:35 7 I can't exactly remember which one. But if I
03:36 8 can recall, there was one that offers either
03:36 9 the option for on-chain or does settlement
03:36 10 on-chain.

03:36 11 Q. Do you know whether -- one way or
03:36 12 the other whether XRP was traded on the
03:36 13 exchange you just described?

03:36 14 A. I'm sorry. I have no idea. I
03:36 15 don't know.

03:36 16 Q. There are certain user agreements
03:36 17 that you reviewed that provided that, after
03:36 18 the offer and bid are matched, the trade
03:36 19 becomes irreversible. Is that right?

03:36 20 A. I'm sorry, could you repeat the
03:36 21 question?

03:36 22 Q. Sure.

03:36 23 A. Thank you.

03:36 24 Q. There are certain user agreements
03:36 25 you reviewed that provide that, after the

03:36 1 offer and bid are matched, the trade becomes
03:36 2 irreversible. Is that right?

03:36 3 A. That's correct.

03:36 4 Q. Were there any user agreements
03:36 5 you reviewed that were in conflict with that
03:36 6 position?

03:36 7 A. What the user agreement said, for
03:36 8 the most part, where information existed,
03:37 9 referring to our conversation earlier, where
03:37 10 orders for buying and selling a cryptocurrency
03:37 11 match, the trade becomes final.

03:37 12 In certain very, very limited
03:37 13 circumstances, trades may be reversed by the
03:37 14 exchange, in case of a clearly erroneous
03:37 15 transaction, for example, and this provision
03:37 16 was included, for example, in the case of the
03:37 17 Coinbase user agreement, Coinbase Singapore,
03:37 18 as well as the BitMax Singapore user
03:37 19 agreement --

03:37 20 Q. Were --

03:37 21 A. -- for example.

03:37 22 Q. Sorry.

03:37 23 Were there any user agreements
03:37 24 that you reviewed that did not specify when
03:37 25 the trade became irreversible?

03:37 1 MS. ZORNBERG: Objection.

03:37 2 A. Returning to our earlier
03:37 3 discussion, there were some user agreements
03:37 4 that were very basic and did not fully specify
03:37 5 the process involved.

03:37 6 Where the process was specified
03:37 7 and mentioned order handling, as far as I can
03:37 8 recall, it was very categorical in stating
03:38 9 that, as soon as orders to buy and sell a
03:38 10 cryptocurrency match, a trade becomes final
03:38 11 and binding and, as far as the customers are
03:38 12 concerned, entirely irreversible.

03:38 13 Q. When you say "there were some
03:38 14 user agreements that did not fully specify the
03:38 15 process involved," does that mean that there
03:38 16 were some user agreements that did not
03:38 17 expressly set forth when a trade becomes
03:38 18 irreversible?

03:38 19 MS. ZORNBERG: Objection. Asked
03:38 20 and answered.

03:38 21 Q. You can answer.

03:38 22 A. Okay. As detailed in my earlier
03:38 23 response, there were some user agreements that
03:39 24 were very basic and did not fully specify the
03:39 25 order handling, submission, and finality

03:39 1 provisions.

03:39 2 Q. Let's look at paragraph 92,
03:39 3 please, on page 50. The sentence I'm looking,
03:39 4 it's mid -- it's, sort of, towards the end of
03:39 5 the paragraph:

03:39 6 "As acknowledged by certain user
03:39 7 agreements (e.g., Korbit) transactions
03:39 8 on these exchanges are therefore
03:39 9 never/infrequently published to the
03:39 10 cryptocurrency blockchains."

03:40 11 Do you see that?

03:40 12 A. (Document review.)

03:40 13 That's right, thank you.

03:40 14 Q. My question is: Other than
03:40 15 Korbit, did you review any other user
03:40 16 agreements that stated that the transactions
03:40 17 on the exchange would not be published to
03:40 18 cryptocurrency blockchains?

03:40 19 A. It was implied in a number of the
03:40 20 user agreements I reviewed. In particular,
03:40 21 the user agreements stated that the
03:40 22 transaction would settle immediately.

03:41 23 This was the case, for example,
03:41 24 in the CoinOne exchange service that's
03:41 25 referenced here, in the case of Binance, in

03:41 1 the case of Coinbase user agreement, that
03:41 2 the -- for example, that the transaction would
03:41 3 settle immediately upon being matched, and
03:41 4 what this implied was that the clearing and
03:41 5 settlement happened immediately following the
03:41 6 transaction becoming final rather than having
03:41 7 any interaction with an underlying blockchain.

03:41 8 Q. What's the -- strike that.

03:41 9 How is it that you conclude
03:41 10 that -- strike that.

03:41 11 Is there ever a point at which a
03:41 12 cryptocurrency trade on, say, Coinbase is
03:41 13 recorded on the blockchain?

03:41 14 MS. ZORNBERG: Object to form.

03:42 15 A. As far as I can tell by Coinbase
03:42 16 itself, the settlement happens in-house.
03:42 17 Where interaction with an underlying
03:42 18 blockchain may happen is when a customer
03:42 19 transfers their holdings to an address on an
03:42 20 underlying blockchain.

03:42 21 A couple of the user agreements
03:42 22 explicitly allow for this and mention the fact
03:42 23 that they will charge a user for any fees that
03:42 24 arise in relation to a transaction to an
03:42 25 underlying blockchain to transfer value out

03:42 1 from an exchange wallet into a wallet on the
03:42 2 underlying blockchain.

03:42 3 Q. At the -- let's turn to paragraph
03:42 4 98, please. That's page 53. You
03:42 5 write -- this is the last sentence:

03:43 6 "By becoming final and binding
03:43 7 within an exchange and not requiring
03:43 8 settlement on a blockchain, it is my
03:43 9 opinion that transactions become binding
03:43 10 in the geographic location of the
03:43 11 exchange upon which the trades are
03:43 12 made."

03:43 13 My question is: What is the
03:43 14 relevance to not requiring settlement on a
03:43 15 blockchain to your opinion set forth that I
03:43 16 just read?

03:43 17 A. I'm sorry, what was your
03:43 18 question?

03:43 19 Q. What is the relevance of the fact
03:43 20 that settlement on the blockchain is not
03:43 21 required to your opinion set forth in the last
03:43 22 sentence of paragraph 98?

03:43 23 A. What I mean here is that the
03:44 24 transactions become valid and binding as soon
03:44 25 as the orders are matched and clearing and

03:44 1 settlement takes place by the exchange on the
03:44 2 exchange, and therefore, the location of the
03:44 3 exchange.

03:44 4 Q. If the trade required settlement
03:44 5 on a blockchain, how would that affect your
03:44 6 opinion about where the trade took place, if
03:44 7 it would?

03:44 8 A. It wouldn't. The trade becomes
03:44 9 binding and valid as soon as orders are
03:44 10 matched on the exchange.

03:44 11 Q. Okay. Let's move on to --

03:44 12 THE WITNESS: Is it possible to
03:44 13 take a break?

03:44 14 MR. SYLVESTER: Do you want to
03:44 15 take a break?

03:44 16 THE WITNESS: Would that be okay?

03:44 17 MR. SYLVESTER: Sure.

03:44 18 Absolutely. Let's go off the record.

03:44 19 THE VIDEOGRAPHER: The time now
03:44 20 is 3:43 p.m. This concludes Media 6.
03:44 21 Off the record.

04:04 22 (Recess taken from 3:43 p.m. to
04:04 23 4:04 p.m.)

04:04 24 THE VIDEOGRAPHER: The time is
04:04 25 4:04 p.m. This begins Media 7. On the

04:04 1 record.

04:04 2 BY MR. SYLVESTER:

04:04 3 Q. Professor, let's turn to
04:04 4 paragraph 99 of your report. That's on page
04:04 5 54. The second sentence starts:

04:04 6 "I conclude that for all but four
04:04 7 of the exchanges listed in Table A,
04:04 8 there is no indication that offers are
04:04 9 made on the exchanges in the US or that
04:05 10 trades on these exchanges become final
04:05 11 in the US."

04:05 12 Do you see that?

04:05 13 A. (Document review.)

04:05 14 Okay.

04:05 15 Q. Can you please describe the facts
04:06 16 that, in your view, support that conclusion?

04:06 17 A. In Table A I set out four indicia
04:06 18 of location that I believe provide a credible
04:06 19 and informative account of where that exchange
04:06 20 is located, and based on those four indicia, I
04:06 21 can exclude or include a particular exchange
04:06 22 from whether or not it is situated in or
04:06 23 outside the United States.

04:06 24 Q. Do you see the next sentence:

04:06 25 "While a small handful of the

04:06 1 exchanges" -- actually, strike that.

04:06 2 Are all the facts that underlie
04:06 3 your opinion that I just read in
04:06 4 paragraph 99 set forth in Table A?

04:06 5 MS. ZORNBERG: Objection.

04:06 6 A. The -- Table A sets out the
04:07 7 application of the four indicia to the
04:07 8 exchanges listed in Table A.

04:07 9 Q. And in the application of your
04:07 10 indicia, you concluded that certain facts were
04:07 11 relevant in forming your opinion. Is that
04:07 12 right?

04:07 13 A. I concluded that certain indicia,
04:07 14 the four indicia I mentioned, were the indicia
04:07 15 that I looked for in determining the location
04:07 16 of the different exchanges.

04:07 17 Q. And you applied those indicia to
04:07 18 each of the exchanges in your Table A. Right?

04:07 19 A. Yes.

04:07 20 Q. Okay. And the facts that are
04:07 21 relevant to the indicia that you applied to
04:07 22 the 24 exchanges are set forth in Table A.
04:07 23 Correct?

04:07 24 MS. ZORNBERG: Objection.

04:07 25 A. Table A --

04:07 1 Q. Go ahead.

04:07 2 A. Table A sets out references that
04:07 3 speak to where -- to what these indicia are
04:08 4 with respect to each of the exchanges listed
04:08 5 in Table A.

04:08 6 Q. Okay. Let's look at Table A.
04:08 7 Let's just start on page 59, please.

04:08 8 Do you see the first row on Table
04:08 9 A says "Binance"?

04:08 10 A. Yes.

04:08 11 Q. Okay. Are there any other facts
04:08 12 about Binance that are relevant to your
04:08 13 conclusions set forth in paragraph 99 that are
04:08 14 not listed in Table A?

04:08 15 A. Table A identifies and lists the
04:08 16 four key indicia that I conclude are essential
04:08 17 for establishing the location of a
04:08 18 cryptocurrency exchange. Table A, with
04:08 19 respect to Binance, sets out how these four
04:08 20 indicia applied in the case of Binance.

04:09 21 MS. ZORNBERG: I have a request
04:09 22 to go off the record just for a moment.

04:09 23 MR. SYLVESTER: Sure. Let's go
04:09 24 off the record.

04:09 25 MS. ZORNBERG: Okay.

04:09 1 THE VIDEOGRAPHER: The time is
04:09 2 4:09 p.m. This concludes Media 7. Off
04:09 3 the record.

04:10 4 (Recess taken from 4:09 p.m. to
04:10 5 4:10 p.m.)

04:10 6 THE VIDEOGRAPHER: The time is
04:10 7 4:10 p.m. This begins Media 8. On the
04:10 8 record.

04:10 9 A. I'd like to correct something I
04:10 10 said.

04:10 11 By MR. SYLVESTER:

04:10 12 Q. Please do.

04:10 13 A. Which is that Table A lists three
04:10 14 of the indicia that I discussed. In addition,
04:10 15 I also include observation of where regulators
04:10 16 believe an exchange is located. And that
04:10 17 information is not contained with respect to
04:10 18 the actual Table A references here.

04:10 19 Q. Okay. Maybe you can help me with
04:10 20 this. The Table A has six columns. Do you
04:10 21 see that?

04:10 22 A. That's right.

04:10 23 Q. And one column -- the first
04:10 24 column is "Exchange." Do you see that?

04:10 25 Can you explain which columns

04:10 1 correspond with which indicia?

04:10 2 A. Yes. "Place of
04:11 3 Incorporation/Domicile," "Place of Business,"
04:11 4 "Registered Office," that is one indicia. The
04:11 5 "Location That is Referenced in the Terms of
04:11 6 Service and Governing Laws," that is a second
04:11 7 indicia. The perception of market, reasonable
04:11 8 market participants, that is a third indicia
04:11 9 as set out in the "Notable Items in Public
04:11 10 Sources and Media."

04:11 11 Q. Why did you call the final column
04:11 12 "Notable Items in Public Sources and Media"?

04:11 13 A. It references the perception of
04:11 14 market participants in relation to where the
04:11 15 exchanges are believed to be located.

04:11 16 Q. Yes. So why not call it the
04:11 17 "Perception of Market Participants." Why call
04:11 18 it "Notable Items in Public Sources and
04:11 19 Media"?

04:11 20 MS. ZORNBERG: Object to form.

04:11 21 A. The reason I did that was because
04:12 22 I looked at the credible media sources in
04:12 23 order to identify and gauge what reasonable
04:12 24 market participants believe -- where they
04:12 25 believe an exchange to be located.

04:12 1 Q. I think I'm asking a much more
04:12 2 basic question, which is why did you select
04:12 3 the words "Notable Items in Public Sources and
04:12 4 Media" for your chart?

04:12 5 MS. ZORNBERG: Objection. Asked
04:12 6 and answered.

04:12 7 A. The fourth indicia also was in
04:12 8 relation to the regulators' perception.

04:12 9 Q. So the fourth column -- sorry --
04:12 10 the sixth column in Table A combines both --

04:12 11 MS. ZORNBERG: Object. There's a
04:12 12 misunderstanding going on.

04:12 13 MR. SYLVESTER: Okay.

04:12 14 MS. ZORNBERG: I don't think the
04:12 15 witness thought -- realized there was a
04:12 16 question pending, your last question.
04:12 17 So she had moved on to talk about where
04:12 18 the fourth indicia is reflected.

04:12 19 MR. SYLVESTER: I see.

04:13 20 Q. I see. Okay. Let me go back to
04:13 21 my original question, which I understand
04:13 22 your -- Ripple's counsel believes it is asked
04:13 23 and answered, but I don't think I've gotten an
04:13 24 answer.

04:13 25 I just want to know why is it

04:13 1 that you labeled the column "Notable Items in
04:13 2 Public Sources and Media"? Why select those
04:13 3 words?

04:13 4 A. I selected those words because
04:13 5 that's where I got the information.

04:13 6 Q. Okay. But sitting here today,
04:13 7 you're explaining that, in fact, that column
04:13 8 represents sources of information that are
04:13 9 relevant to the criteria of what, in your
04:13 10 view, market participants believed as to the
04:13 11 location of these exchanges?

04:13 12 A. That's how I gauged information
04:13 13 regarding the perception of market
04:13 14 participants and where they believed an
04:13 15 exchange to be located.

04:14 16 Q. Okay. Let's flip back to
04:14 17 paragraph 99, please. About midway through
04:14 18 the paragraph, you write:

04:14 19 "Given the possible presence of a
20 foreign arm on which a trade may have
21 occurred, it is not determinable in the
22 abstract whether, for any particular
23 trade, the transaction became final
24 within the US or outside the US through
25 a unit located in a foreign

1 jurisdiction."

04:14 2 My question is just: What does
04:14 3 the term "foreign arm" mean as used in that
04:14 4 sentence?

04:14 5 A. (Document review.)

04:14 6 An arm that is not a US arm.

04:15 7 Q. What does the word "arm" mean in
04:15 8 your answer?

04:15 9 A. An affiliate, a unit -- an
04:15 10 affiliate or unit of the exchange.

04:15 11 Q. Did you determine for all 24
04:15 12 exchanges whether or not there was a US
04:15 13 affiliate or unit associated with each of
04:15 14 those exchanges?

04:15 15 A. I looked at the list of exchanges
04:15 16 I received from counsel.

04:15 17 Q. Okay. After you received that
04:15 18 list, did you take any steps to determine
04:15 19 whether or not, for any of the exchanges
04:15 20 listed in Table A, all of -- any of the
04:15 21 exchanges had a US affiliate or unit?

04:15 22 A. I relied on the exchanges that I
04:15 23 received from counsel as set out in Table A.

04:15 24 Q. I understand that but I just want
04:15 25 to -- I want to see if, once you received the

04:15 1 information from counsel that's in Table A,
04:15 2 whether you took any additional steps.

04:15 3 So once you received that
04:15 4 information, did you take any steps to
04:15 5 determine that any of the exchanges listed in
04:15 6 Table A did or did not have a US affiliate or
04:16 7 unit?

04:16 8 A. My reliance here was in relation
04:16 9 to the exchanges set out in Table A. I did
04:16 10 not go through each and every exchange to
04:16 11 determine whether they were US units.

04:16 12 Q. Okay. Sitting here today and
04:16 13 excluding Bittrex, Poloniex, Coinbase, and
04:16 14 Kraken, do any of the remaining exchanges
04:16 15 listed in Table A have a US affiliate or unit?

04:16 16 MS. ZORNBERG: Object to the
04:16 17 form.

04:16 18 A. I did not do specific research
04:16 19 with respect to each and every exchange listed
04:16 20 in Table A. I did not -- based on my own
04:16 21 general understanding, for example, Binance
04:16 22 has a US affiliate.

04:16 23 Q. Okay. Does bitbank?

04:16 24 A. I can't say specifically.

04:16 25 Q. Is that because you don't know?

04:17 1 A. I can't recall.
04:17 2 MS. ZORNBERG: Objection.
04:17 3 A. I don't know.
04:17 4 Q. Does Bitfinex have a US
04:17 5 affiliate?
04:17 6 A. I believe it does.
04:17 7 Q. Does BitForex have a US
04:17 8 affiliate?
04:17 9 A. I don't know.
04:17 10 Q. Does Bithumb have a US affiliate?
04:17 11 A. I don't know.
04:17 12 Q. Does Bitlish have a US affiliate?
04:17 13 A. I don't know.
04:17 14 Q. Does BitMart have a US affiliate?
04:17 15 A. Does which one?
04:17 16 Q. BitMart?
04:17 17 A. I don't know.
04:17 18 Q. Does Bitmax have a US affiliate?
04:17 19 A. I believe it does.
04:17 20 Q. Does Bittrue have a US affiliate?
04:17 21 A. I don't know.
04:17 22 Q. Does Bitstamp have a US
04:17 23 affiliate?
04:17 24 A. Bitstamp, I believe it does.
04:17 25 Q. Does Bittrex have a US affiliate?

04:17 1 A. Yes.

04:17 2 Q. Does BW have a US affiliate?

04:18 3 A. I don't know.

04:18 4 Q. If you'd like, I'm reading from
04:18 5 page 62 of your report. It's not just --

04:18 6 A. Okay.

04:18 7 Q. You're free to follow along.
04:18 8 Does CoinBene, B-e-n-e, have a US
04:18 9 affiliate?

04:18 10 A. I don't know.

04:18 11 Q. Does CoinOne have a US affiliate?

04:18 12 A. I don't know.

04:18 13 Q. Does DigiFinex have a US
04:18 14 affiliate?

04:18 15 A. I don't know.

04:18 16 Q. Does HitBTC have a US affiliate?

04:18 17 A. I don't know.

04:18 18 Q. Does Huobi Global have a US
04:18 19 affiliate?

04:18 20 A. I believe it may have had one.

04:18 21 Q. In what time period?

04:18 22 A. Around summer 2018 for a period
04:19 23 of time.

04:19 24 Q. Does Korbit have a US affiliate?

04:19 25 A. I don't know.

04:19 1 Q. There's no way I'm going to be
04:19 2 able to pronounce this. Does the company
04:19 3 that's doing business as OKEx have a US
04:19 4 affiliate?

04:19 5 A. I don't know.

04:19 6 Q. Does Upbit have a US affiliate?

04:19 7 A. I don't know.

04:19 8 Q. Does ZB have a US affiliate?

04:19 9 A. I don't know.

04:19 10 Q. Does ZBG have a US affiliate?

04:19 11 A. I don't know.

04:19 12 Q. For all of the exchanges that you
04:19 13 are not aware whether or not they have a US
04:19 14 affiliate, how can you be sure that the trades
04:19 15 of digital assets on those exchanges did not
04:20 16 take place in the United States?

04:20 17 MS. ZORNBERG: Object to form.

04:20 18 A. I looked at the exchanges
04:20 19 provided to me in Table A and applied the
04:20 20 indicia to those exchanges in Table A.

04:20 21 Q. Okay. Let me ask you a different
04:20 22 question: Did you take any steps -- strike
04:20 23 that.

04:20 24 For the exchanges that we just
04:20 25 discussed where you're not sure whether or not

04:20 1 they have a US affiliate, sitting here today,
04:20 2 can you -- can you definitively say that
04:20 3 trades taking place on those exchanges did not
04:20 4 take place in the United States?

04:20 5 MS. ZORNBERG: Object to form.

04:20 6 A. My opinion was to look at the
04:20 7 exchanges set out in Table A and to determine
04:20 8 how trades become final, binding -- and
04:20 9 binding on exchanges and cryptocurrency
04:20 10 exchanges and where those trades then become
04:20 11 final. That was the scope of my opinion.

04:21 12 Q. Let me return to your opinion to
04:21 13 paragraph 99. About midway through the
04:21 14 paragraph, you write:

15 "Given the possible presence of a
16 foreign arm on which a trade may have
17 occurred, it is not determinable in the
18 abstract whether, for any particular
19 trade, the transaction became final
20 within the US or outside the US through
04:21 21 a unit located in a foreign
04:21 22 jurisdiction."

04:21 23 Do you see that?

04:21 24 A. Yes.

04:21 25 Q. Does that sentence that I just

04:21 1 read describe Bittrex, Poloniex, Coinbase, and
04:21 2 Kraken?

04:21 3 A. It references the fact that
04:22 4 Bittrex, Poloniex, Coinbase, and Kraken may
04:22 5 have had foreign affiliates through which
04:22 6 transactions could have occurred.

04:22 7 Q. Okay. And is it in your view --
04:22 8 strike that.

04:22 9 Is it your opinion that you're
04:22 10 unable to conclude that trades on Bittrex,
04:22 11 Poloniex, Coinbase, and Kraken occurred in the
04:22 12 US because of the existence of a foreign
04:22 13 affiliate of those four entities?

04:22 14 A. I wasn't providing a particular
04:22 15 opinion here. I was merely suggesting for the
04:22 16 sake of, you know, completeness that one may
04:22 17 want to look at the particular facts on the
04:22 18 ground.

04:22 19 The opinion I provide is in
04:22 20 relation to Table A, and applying those four
04:22 21 indicia to the exchanges listed on Table A,
04:22 22 and then identifying, based on those indicia,
04:22 23 which exchanges can be included within the --
04:22 24 as US exchanges and which are excluded as US
04:22 25 exchanges.

04:23 1 Q. So in light of that, why was it
04:23 2 not important for you to determine whether or
04:23 3 not any of the remaining 20 exchanges on
04:23 4 Table A had a US affiliate?

04:23 5 A. The reason I made this
04:23 6 observation for the sake of completeness is
04:23 7 because I had reviewed ██████████ deposition,
04:23 8 which mentioned the fact that he transacted on
04:23 9 platforms that he believed were located
04:23 10 offshore.

04:23 11 In addition, with respect to
04:23 12 Coinbase, I had Coinbase Singapore's terms of
04:23 13 service. And so, again, for the sake of
04:23 14 completeness, I mentioned the fact that one
04:23 15 may want to consider looking at where the
04:23 16 actual trades take place, given what was said
04:23 17 by ██████████ in his deposition and given the
04:23 18 fact that my materials included Coinbase
04:23 19 Singapore's terms of service.

04:23 20 Q. When you say "where the actual
04:23 21 trades take place" in your answer just now,
04:23 22 what is it that you mean?

04:24 23 A. If the trades became -- it
04:24 24 became -- if the orders were submitted to and
04:24 25 became final on the foreign arm of an exchange

04:24 1 affiliated with Coinbase, Bittrex, Kraken, or
04:24 2 Poloniex.

04:24 3 Q. If an exchange became -- strike
04:24 4 that.

04:24 5 If a trade became final on the US
04:24 6 affiliate arm of an otherwise foreign
04:24 7 exchange, would that make that trade, in your
04:24 8 view, occurring in the United States?

04:24 9 A. If the indicia points to that
04:24 10 exchange as being a US exchange and the trades
04:24 11 become final on that exchange, that trade
04:24 12 becomes final in the geographic location of
04:24 13 the exchange, which, as the indicia would
04:24 14 point out, would include the US.

04:24 15 Q. Okay. So let me pose a
04:24 16 hypothetical that, as far as I know -- well,
04:24 17 strike that.

04:24 18 Let me pose a hypothetical.
04:24 19 Let's talk about Bitlish again. That's on
04:24 20 page 61 of your report.

04:25 21 Let's assume -- I'm not saying
04:25 22 this is true. I'm just saying let's assume as
04:25 23 a hypothetical that Bitlish has a US
04:25 24 affiliate.

04:25 25 Are you with me so far?

04:25 1 A. I'm with you so far.

04:25 2 Q. Okay. If a particular trade
04:25 3 takes place on the US affiliate of Bitlish, in
04:25 4 your view, would that trade have taken place
04:25 5 within the United States?

04:25 6 A. Applying those indicia to the
04:25 7 platform that is a US affiliate of Bitlish, if
04:25 8 those indicia point to a US location, then the
04:25 9 US could not be excluded as a geographic
04:25 10 location where the transaction becomes final.

04:25 11 Q. So my question is: Why wasn't it
04:25 12 of relevance for you to determine whether many
04:25 13 of these exchanges listed in Table A had a US
04:25 14 affiliate in order to reach your opinion?

04:25 15 A. My opinion was simply to identify
04:26 16 for -- identify the indicia to determine the
04:26 17 location of the exchange, not to pinpoint any
04:26 18 particular location where trades become final.
04:26 19 I applied my indicia to the exchanges given to
04:26 20 me in Table A, and that was my -- that was the
04:26 21 scope of my opinion.

04:26 22 Q. So Table A does not reflect your
04:26 23 opinion as to where any particular trade
04:26 24 became final. Is that fair?

04:26 25 A. What my opinion -- what my

04:26 1 opinion here does is apply the indicia to
04:26 2 determine whether or not these indicia can
04:26 3 exclude or include the US as a possible
04:26 4 geographic location for a cryptocurrency
04:26 5 exchange listed in Table A.

04:26 6 Q. Okay. Let me pose another
04:26 7 hypothetical. Let's say I have made a trade
04:26 8 on Bitlish. Do you have enough information,
04:26 9 based on the application of your criteria, to
04:27 10 say where that trade was finalized?

04:27 11 A. It's not my opinion to give a
04:27 12 particular location. But applying my indicia
04:27 13 to the current Bitlish indicia here, it would
04:27 14 indicate that all the indicia would point to
04:27 15 the UK.

04:27 16 Q. Okay. Could you conclusively
04:27 17 determine that that trade happened in the UK?

04:27 18 A. My opinion is simply to look --
04:27 19 describe how orders are made on cryptocurrency
04:27 20 exchanges and become final on cryptocurrency
04:27 21 exchanges, provide the indicia for determining
04:27 22 location, not to specify a particular location
04:27 23 with respect to any one exchange.

04:27 24 Q. Is it also true that your opinion
04:27 25 is -- does not include specifying a particular

04:27 1 location with respect to any one particular
04:28 2 trade?

04:28 3 A. No, it does not.

04:28 4 Q. Okay. Let's move to paragraph
04:28 5 101, please. That's on page 55.

6 You write in the first full
7 sentence:

8 "In determining where offers are
9 made and where transactions match and
10 become final, pinpointing the exact
11 geographic location of cryptocurrency
12 exchanges poses logistical and
13 analytical challenges."

04:28 14 Do you see that?

04:28 15 A. I'm sorry, which paragraph are we
04:29 16 on?

04:29 17 Q. We're on 101 and it's the top of
04:29 18 page 55. It's the first full sentence on the
04:29 19 top of page 55.

04:29 20 A. (Document review.)

04:30 21 Q. My question is: What are the
04:30 22 logistical and analytical challenges that you
04:30 23 reference in paragraph 101?

04:30 24 A. The logistical and analytical
04:30 25 challenges here point to the fact that

04:30 1 cryptocurrency exchanges are, relatively
04:30 2 speaking, newer to the marketplace. Some of
04:30 3 them may be smaller exchanges.

04:30 4 That may be largely -- the
04:30 5 smaller exchanges that are -- that include
04:30 6 people located in different jurisdictions, so
04:30 7 on and so forth. So it's difficult to
04:30 8 pinpoint with precise -- with precision
04:30 9 exactly where the cryptocurrency exchange is
04:30 10 located.

04:31 11 Q. Okay. Let's move on to paragraph
04:31 12 102. The first sentence says:

04:31 13 "The mobile, digital nature of
04:31 14 cryptocurrency exchanges arguably
04:31 15 exacerbates the challenge of ascribing
04:31 16 particular weight to various potential
04:31 17 indicia of location (e.g., location of
04:31 18 employees, servers, cold key storage) as
04:31 19 providing definitive 'proof' of the
04:31 20 location of the exchange on which trades
04:31 21 are made final."

04:31 22 Do you see that?

04:31 23 A. (Document review.)

04:31 24 Yes.

04:31 25 Q. Focusing just on location of

04:31 1 employees, servers, and cold key storage, in
04:32 2 forming your opinions in this case, did you
04:32 3 consider whether or not to ascribe any weight
04:32 4 to those items as indicia of location of
04:32 5 cryptocurrency exchanges?

04:32 6 A. I gave it thought. I reflected
04:32 7 on it. And then I determined that I could not
04:32 8 credibly put any weight on these factors as
04:32 9 indicators of location.

04:32 10 Q. Why is that?

04:32 11 A. With respect to which factor?

04:32 12 Q. Let's take servers.

04:32 13 A. With respect to servers, servers
04:32 14 are located around the world with respect to
04:32 15 exchanges and the firms that use them. As
04:32 16 seen in [REDACTED] testimony, for example, his
04:32 17 firm locates servers throughout the world.

04:32 18 Servers are really not
04:32 19 informative at all with respect to the
04:32 20 location of where an exchange might be or a
04:32 21 firm might be located, given the fact that
04:32 22 they proliferate globally in order to enable
04:33 23 global trading to take place.

04:33 24 Q. Is it true that the exchanges
04:33 25 that are listed in Table A have servers that

04:33 1 proliferate globally?

04:33 2 A. I couldn't say with respect to
04:33 3 the exchanges specifically. But as a general
04:33 4 principle, it is commonplace for firms, for
04:33 5 exchanges to enable global trading to happen
04:33 6 to facilitate that process to locate servers
04:33 7 around the globe.

04:33 8 As such, I consider that to be
04:33 9 completely uninformative as to where the
04:33 10 exchange is actually located.

04:33 11 Q. Did you take any steps to
04:33 12 determine where the servers of the exchanges
04:33 13 listed in Table A -- strike that.

04:33 14 Did you take any steps to
04:33 15 determine, with respect to the exchanges in
04:33 16 Table A, where those exchanges' servers were
04:34 17 located?

04:34 18 A. Based on my research and
04:34 19 experience, based on my understanding of
04:34 20 market structure and trading, I conclude
04:34 21 strongly that servers in today's modern
04:34 22 digital global electronic marketplace really
04:34 23 have no significance whatsoever in providing
04:34 24 definitive and credible indicia of where an
04:34 25 exchange or firm is located.

04:34 1 Q. Is it fair to say, then, that you
04:34 2 did not take any steps to locate where those
04:34 3 exchanges' servers were because you did not
04:34 4 think that their location had any relevance?

04:34 5 A. I reflected on the question about
04:34 6 servers. I thought hard about it. I applied
04:34 7 my professional experience, research,
04:34 8 judgment, and concluded strongly that, in
04:34 9 today's economy and financial marketplace,
04:34 10 servers are too ubiquitous to be able to
04:35 11 provide any credible signal as to the location
04:35 12 of an exchange or firm.

04:35 13 Q. And this question is just focused
04:35 14 on your methodology that you applied in
04:35 15 preparing your opinion. So I just want to ask
04:35 16 you to limit your answer to steps that you
04:35 17 took or did not take.

04:35 18 Did you take any steps to
04:35 19 determine where the exchanges on Exhibit A
04:35 20 have servers?

04:35 21 A. No.

04:35 22 Q. Let's go back to our Bitlish
04:35 23 example. If everything that you wrote about
04:35 24 Bitlish in Table A remained the same --

04:35 25 A. Yeah.

04:35 1 Q. -- this is hypothetical -- but
04:35 2 all of its servers were in the United States,
04:35 3 would that affect your opinion at all?

04:35 4 A. It would not.

04:35 5 Q. Okay. If you had wanted to
04:35 6 determine where the exchanges on your Table A
04:36 7 had their servers, is that something that you
04:36 8 could have figured out?

04:36 9 MS. ZORNBERG: Objection.

04:36 10 A. I think it would have been very
04:36 11 difficult to figure out simply because I
04:36 12 believe that servers are so widespread that
04:36 13 pinpointing exact servers with respect to
04:36 14 firms or platforms or exchanges is just very
04:36 15 difficult logistically in today's marketplace.

04:36 16 Q. If -- understanding you didn't
04:36 17 want to do it, if you had wanted to do it,
04:36 18 what steps would you have taken?

04:36 19 MS. BUNTING: Objection.

04:36 20 MS. ZORNBERG: Objection.

04:36 21 A. I think it's a tough question. I
04:36 22 think I would have researched the issue. I
04:36 23 would have conducted searches as to where
04:36 24 servers might be located. I would have to
04:36 25 really think about that question as to how I

04:36 1 would have approached it exactly.

04:36 2 It's a tough question. I think
04:36 3 it's ultimately one doomed to failure, given
04:36 4 the incredible proliferation of servers across
04:37 5 the globe today.

04:37 6 Q. Is it your view that it would be
04:37 7 doomed to failure because the information is
04:37 8 not publicly available?

04:37 9 MS. ZORNBERG: Objection.

04:37 10 A. That's part of it potentially.
04:37 11 In addition, it's hard to identify. Certain
04:37 12 servers may not even operate. They may be
04:37 13 broken. They may not work. They may be old.
04:37 14 Any number of reasons.

04:37 15 Q. Okay. I want to turn to your
04:37 16 process of selecting the four criteria that
04:37 17 you applied.

04:37 18 A. Yeah.

04:37 19 Q. Walk me through what steps you
04:37 20 took to select those four criteria, please.

04:37 21 A. The steps I took here really
04:37 22 brought to bear the professional experience
04:37 23 and judgment that I have developed in my
04:37 24 career in legal practice as part of my work at
04:37 25 the World Bank, as part of my research into

04:37 1 market microstructure and international
04:38 2 financial regulation.

04:38 3 Bringing that process to bear, I
04:38 4 have thought very carefully during my years in
04:38 5 practice as well as in my research about where
04:38 6 transactions become final, where firms are
04:38 7 located for the purposes of their
04:38 8 transactions, their home state, for the
04:38 9 purposes of liability, for the purposes of
04:38 10 various jurisdictional issues that, when
04:38 11 attached to them, have thought of those issues
04:38 12 throughout my career and practice at Clifford
04:38 13 Chance, World Bank, as well as in my research.

04:38 14 And I brought that judgment to
04:38 15 bear in identifying four key credible,
04:38 16 informative signals that would provide a real
04:38 17 indication of where cryptocurrency exchanges
04:38 18 could be located, given the difficulties of
04:38 19 doing so.

04:38 20 Q. Prior to your engagement in this
04:38 21 case, had you ever considered the question of
04:38 22 where trades on cryptocurrency exchanges were
04:39 23 located?

04:39 24 A. I have often. Throughout my
04:39 25 years in practice, it was very normal to give

04:39 1 thought to various aspects of jurisdiction; as
04:39 2 to where transactions are happening, where
04:39 3 firms are located, where settlement finality
04:39 4 may be taking place in order to determine
04:39 5 particular risk management or governance that
04:39 6 may be applicable. That was extremely
04:39 7 frequent as a part of my practice.

04:39 8 At the World Bank, I was
04:39 9 frequently engaged in discussions, thinking
04:39 10 about, researching questions as to
04:39 11 international insolvency, which oftentimes
04:39 12 engages questions about location, in order to
04:39 13 determine aspects such as the center of main
04:39 14 interests applicable to a particular firm or
04:39 15 transaction.

04:39 16 In my research, I am teaching as
04:39 17 well as researching questions about
04:39 18 international financial institutions. In the
04:39 19 case of my teaching, I've delivered lectures,
04:39 20 thought about aspects of location,
04:40 21 particularly as it pertains to where financial
04:40 22 institutions develop subsidiaries or branches,
04:40 23 what difference does that make in terms of how
04:40 24 transactions are finalized and liability
04:40 25 arises with respect to the those firms and

04:40 1 institutions.

04:40 2 And so I applied that knowledge
04:40 3 to the novel question of where cryptocurrency
04:40 4 exchanges finalize their trades. To me, it
04:40 5 represented an extremely natural and logical
04:40 6 extension of my past work.

04:40 7 And I used that substance and
04:40 8 analysis to apply, in this case, to developing
04:40 9 the four indicia that I identify here.

04:40 10 Q. I'd like to focus very narrowly
04:40 11 on the question of where trades on
04:40 12 cryptocurrency exchanges are finalized.

04:40 13 Prior to your engagement in this
04:40 14 case, had you ever considered the question of
04:40 15 where trades on cryptocurrency exchanges were
04:40 16 finalized?

04:40 17 MS. ZORNBERG: Objection. Asked
04:40 18 and answered.

04:40 19 A. I reject your premise in the
04:40 20 sense that you are creating a deep distinction
04:41 21 between the finalization of trades on
04:41 22 cryptocurrency exchanges relative to
04:41 23 traditional exchanges.

04:41 24 As detailed throughout my report,
04:41 25 cryptocurrency exchanges borrow methodology

04:41 1 for finalizing trades very, very deeply, in
04:41 2 fact, from traditional exchanges.

04:41 3 So all of the questions that I
04:41 4 have just discussed, all the material I just
04:41 5 discussed in my previous answer I feel is
04:41 6 incredibly applicable and relevant to thinking
04:41 7 about the question of cryptocurrency exchanges
04:41 8 precisely because cryptocurrency exchanges
04:41 9 rely so heavily on their methodologies, on
04:41 10 traditional exchanges, and how they establish
04:41 11 their trading systems.

04:41 12 Q. Okay. Focusing narrowly on the
04:41 13 question of where trades on cryptocurrency
04:41 14 exchanges are finalized, had you ever written
04:41 15 any publication whatsoever on that narrow
04:41 16 topic prior to this report?

04:41 17 A. No.

04:41 18 Q. Okay. Again, prior to your
04:41 19 engagement in this case, have you ever made
04:42 20 any kind of public statement about where
04:42 21 trades on cryptocurrency exchanges are
04:42 22 finalized?

04:42 23 A. I don't believe so. Then again,
04:42 24 it's a novel question, so I'm not surprised
04:42 25 about that.

04:42 1 Q. Okay. Are there any indicia of
04:42 2 location, other than the ones we've already
04:42 3 discussed, that you considered including
04:42 4 within your test but ultimately decided not to
04:42 5 include?

04:42 6 MS. ZORNBERG: Objection. Asked
04:42 7 and answered.

04:42 8 You can answer again.

04:42 9 A. So, for example, as detailed in
04:42 10 102, paragraph, I considered aspects like the
04:42 11 location of employees, servers, cold key
04:42 12 storage, for example. And I rejected these
04:42 13 indicia as being essentially noise that is
04:42 14 uninformative as to the location of an
04:42 15 exchange.

04:42 16 Q. Other than location of employees,
04:43 17 servers, and cold key storage, were there
04:43 18 additional indicia that you had considered
04:43 19 including in your methodology but ultimately
04:43 20 rejected?

04:43 21 A. I think there would have been. I
04:43 22 can't exactly recall, as I sit here today,
04:43 23 exactly which ones.

04:43 24 Q. In your view, is the geographic
04:43 25 location of servers that house a

04:43 1 cryptocurrency exchange's matching engine
04:43 2 relevant at all to determining where a trade
04:43 3 on that exchange is finalized?

04:43 4 MS. BUNTING: Objection.

04:43 5 MS. ZORNBERG: Object to form.

04:43 6 A. So there are two aspects to your
04:43 7 question that I disagree with on their
04:43 8 fundamental premise; firstly, that servers are
04:43 9 important in respect of establishing location
04:43 10 as discussed. I do not believe they are at
04:43 11 all for the reasons that we just discussed.

04:44 12 In addition, as previously
04:44 13 discussed throughout, I do not believe that
04:44 14 matching engines can be distilled to a
04:44 15 location on a server.

04:44 16 As discussed, matching engines
04:44 17 comprise the rules and processes of an
04:44 18 exchange, the governance of an exchange, and
04:44 19 are far bigger, far more deeply embedded
04:44 20 within an exchange's institutional presence
04:44 21 than the simple mechanical matching of one
04:44 22 byte, b-y-t-e, with another on some server
04:44 23 somewhere.

04:44 24 Q. Have you reviewed any other
04:44 25 expert reports in this case? Other than your

04:44 1 own. That's what I mean by "other."

04:44 2 A. I reviewed the rebuttal report of
04:44 3 Mr. Dewey.

04:44 4 Q. Any others?

04:44 5 A. No.

04:44 6 Q. Other than any testimony that may
04:44 7 be listed in your materials considered, have
04:44 8 you reviewed any deposition testimony
04:44 9 transcripts in this case?

04:44 10 A. I have not.

04:44 11 Q. Okay. The very end of paragraph
04:45 12 102, page 55, you mentioned, among other
04:45 13 things, that Bitstamp has servers in Ireland
04:45 14 and Germany.

04:45 15 Do you see that?

04:45 16 A. (Document review.)

04:46 17 Yes.

04:46 18 Q. How did you determine that
04:46 19 Bitstamp has servers in Ireland and Germany?

04:46 20 A. I believe it was in one of the
04:46 21 materials that I've reviewed with respect to
04:46 22 Bitstamp.

04:46 23 Q. One of the materials cited in
04:46 24 your report. Is that right?

04:46 25 A. That's right.

04:46 1 Q. Okay. Let's move to paragraph
04:46 2 104 on page 56, please. The first sentence
04:46 3 says:

04:46 4 "These indicia might not all be
04:46 5 applicable for every exchange or even
04:46 6 knowable for every exchange."

04:46 7 Do you see that?

04:46 8 A. (Document review.)

04:47 9 Yes.

04:47 10 Q. Did it concern you at all in
04:47 11 forming your opinion that the indicia you
04:47 12 selected did not always -- weren't always
04:47 13 knowable for every exchange?

04:47 14 MS. ZORNBERG: Object to form.

04:47 15 You can answer.

04:48 16 A. It did not bother me at all.

04:48 17 Q. Why is that?

04:48 18 A. This is a new industry. It is to
04:48 19 be expected that certain information at
04:48 20 present may not exist or be knowable.

04:48 21 In my opinion, the methodology I
04:48 22 establish is sound and provides a real world,
04:48 23 concrete, logical, reasonable understanding of
04:48 24 location. The fact that not every exchange
04:48 25 has every indicia, that doesn't -- to me, that

04:48 1 doesn't seem like a problem at all.

04:48 2 Q. Prior to forming your opinions
04:48 3 set forth in your report, had you ever applied
04:48 4 this for the four indicia to determine the
04:48 5 location of trading on any particular
04:48 6 cryptocurrency exchange?

04:48 7 A. As I stated in my previous
04:48 8 responses, I addressed the question of
04:49 9 location on cryptocurrency exchanges in this
04:49 10 opinion as part of forming this opinion.

04:49 11 This is a brand-new question,
04:49 12 essentially, in the literature, as far as I'm
04:49 13 aware. I have taken steps in this opinion to
04:49 14 bring my professional judgment, experience,
04:49 15 and research to establishing these four
04:49 16 indicia. And I believe I do so in a way that
04:49 17 others in my field would consider to be
04:49 18 extremely credible.

04:49 19 So this is -- this is my attempt
04:49 20 to set out four key indicia that I believe
04:49 21 credibly speak to the location of a
04:49 22 cryptocurrency exchange. This is the first
04:49 23 time I'm doing it.

04:49 24 Q. You testified, among other
04:49 25 things, that this is a brand-new question,

04:49 1 essentially, in the literature, as far as
04:49 2 you're aware.

04:49 3 Does that mean it's fair to say
04:49 4 there's not really a literature that addresses
04:49 5 the issue of where a trade on a cryptocurrency
04:49 6 exchange takes place?

04:49 7 A. I'll be very clear, this
04:50 8 literature and answering this question
04:50 9 intertwines deeply with existing practices,
04:50 10 with respect to existing literature, with
04:50 11 respect to international standards, in
04:50 12 relation to the location of exchanges,
04:50 13 transactions, and firms.

04:50 14 There is extensive discussion,
04:50 15 literature, thinking around the question of
04:50 16 where international firms establish
04:50 17 themselves, questions of liability, questions
04:50 18 of locating where particular assets might be
04:50 19 located. There is a deep literature,
04:50 20 thinking, and practice surrounding those
04:50 21 questions.

04:50 22 That literature, practice, and
04:50 23 experience is very relevant to determining the
04:50 24 question of how cryptocurrency exchanges
04:50 25 should be analyzed.

04:50 1 And I've sought to bring that
04:50 2 research and expertise in the traditional
04:50 3 marketplace with respect to international
04:50 4 standards, with respect to market practice, to
04:51 5 the determination of what four indicia should
04:51 6 be applied here, to determining the location
04:51 7 of cryptocurrency exchanges.

04:51 8 Q. Are there any academic articles
04:51 9 you're aware of that address the specific
04:51 10 question of where a trade on a cryptocurrency
04:51 11 exchange takes place?

04:51 12 A. In my opinion, based on the best
04:51 13 of my belief, I don't believe there is.

04:51 14 Q. Moving to paragraph 105, please,
04:51 15 the first two sentences say:

04:51 16 "These indicia are important for
04:51 17 a variety of reasons. They provide
04:51 18 concrete attributes that are possible to
04:51 19 identify for the large majority of
04:51 20 exchanges with a degree of certainty."

04:51 21 Do you see that?

04:51 22 A. (Document review.)

04:53 23 Yes.

04:53 24 Q. My question is: Were you able to
04:53 25 achieve a greater degree of certainty with

04:53 1 respect to some of your indicia versus other
04:53 2 indicia?

04:53 3 MS. ZORNBERG: Object to form.

04:53 4 A. I'm not really sure what you
04:53 5 mean.

04:53 6 Q. Let me provide an example. Like,
04:53 7 were you able to be more certain about where a
04:53 8 cryptocurrency exchange was incorporated
04:54 9 versus market participants' perception of
04:54 10 where it was located?

04:54 11 A. It really depends on the
04:54 12 exchange.

04:54 13 Q. Were there instances in which
04:54 14 your level of certainty varied among indicia
04:54 15 with respect to a single exchange?

04:54 16 MS. ZORNBERG: Object to form.

04:54 17 A. Take one example. Binance has
04:54 18 the potential for different places of
04:54 19 incorporation and domicile. It's difficult to
04:54 20 establish. However, the terms of service make
04:54 21 clear that arbitrations are to be undertaken
04:54 22 in Hong Kong.

04:54 23 So it's very clear to read the
04:54 24 terms of service and establish choice of venue
04:54 25 for disputes. However, establishing the place

04:55 1 of incorporation and domicile is more
04:55 2 difficult.

04:55 3 Q. Are you offering any opinion as
04:55 4 to where the books and records of any
04:55 5 particular exchange listed on your Table A are
04:55 6 located?

04:55 7 A. I'm not.

04:55 8 Q. Okay. Are you offering any
04:55 9 opinion that any of the exchanges listed on
04:55 10 your Table A are subject to the recordkeeping
04:55 11 demands that you describe in paragraph 105?

04:55 12 MS. ZORNBERG: Object to form.

04:55 13 A. Are you talking about a
04:55 14 particular exchange? I'm not sure I fully
04:55 15 appreciate and understand the question.

04:55 16 Q. Fair enough. Let's break it
04:55 17 down. You discuss in paragraph 105, in your
04:55 18 words, "strict recordkeeping demands on
04:55 19 regulated entities."

04:55 20 Do you see that?

04:55 21 MS. ZORNBERG: What page are you
04:55 22 on?

04:55 23 MR. SYLVESTER: Sorry. The very
04:56 24 bottom of 56, or almost the very bottom.

04:56 25 A. (Document review.)

04:56 1 Q. Do you see that?

04:56 2 A. I do.

04:56 3 Q. Okay. So my question is whether
04:56 4 or not you're offering any opinion as to
04:56 5 whether or not any of the exchanges that are
04:56 6 listed in your Table A are subject to any of
04:56 7 the strict recordkeeping demands that you
04:56 8 reference in paragraph 105.

04:56 9 A. What I'm saying here is that the
04:56 10 indicia identified in Table A includes the
04:56 11 place of incorporation domicile, place of
04:56 12 business, registered office, governing laws.

04:56 13 The governing laws, with respect
04:56 14 to a particular exchange, may subject the
04:56 15 exchange to particular recordkeeping
04:56 16 requirements. That is commonplace with
04:57 17 respect to the regulation of exchanges in
04:57 18 traditional markets.

04:57 19 So it is certainly very
04:57 20 reasonable to imagine that a governing law
04:57 21 with respect to a particular exchange is -- as
04:57 22 identified as part of the indicia, would
04:57 23 establish the same with respect to some of the
04:57 24 exchanges established in Table A.

04:57 25 Q. But sitting here today, are you

04:57 1 aware of any such recordkeeping demands that
04:57 2 are applicable to any of the exchanges that
04:57 3 you list in Table A?

04:57 4 MS. ZORNBERG: Object to form.

04:57 5 A. I haven't researched the
04:57 6 different laws of the different countries
04:57 7 listed here in the terms of service.

04:57 8 Q. So is it fair to say that you're
04:57 9 not sure one way or the other whether the
04:57 10 exchanges listed in Table A are subject to
04:57 11 recordkeeping demands?

04:57 12 MS. ZORNBERG: Objection.

04:57 13 A. As I sit here today, I can't make
04:57 14 that determination.

04:57 15 Q. In a case where an exchange may
04:58 16 conduct most of its business in a different
04:58 17 jurisdiction from its registered domicile, in
04:58 18 your view, is its registered domicile still
04:58 19 relevant to the analysis of where a trade on
04:58 20 that exchange takes place?

04:58 21 A. Yes.

04:58 22 MS. ZORNBERG: Objection.

04:58 23 Q. Why is that?

04:58 24 A. Yes, the place of incorporation
04:58 25 and domicile may determine the corporate forum

04:58 1 that the particular exchange inhabits. It may
04:58 2 determine the potential rules that apply in
04:58 3 the event that exchange becomes insolvent.

04:58 4 It may have certain applicability
04:58 5 as to the particular rules that govern the
04:59 6 internal recordkeeping of the exchange, as I
04:59 7 set out in this report as part of my thinking
04:59 8 here.

04:59 9 So even though the place of
04:59 10 business may be in a different jurisdiction,
04:59 11 it's perfectly under- -- it's perfectly
04:59 12 reasonable to think that an exchange may still
04:59 13 be subject to various obligations, demands
04:59 14 with respect to the corporate forum that it
04:59 15 has and that is registered in its place of
04:59 16 incorporation and domicile.

04:59 17 Q. Did you take any steps to
04:59 18 determine -- strike that.

04:59 19 For the exchanges that are listed
04:59 20 in your Table A, did you take any steps to
04:59 21 determine as part of your analysis whether
04:59 22 these exchanges conducted most of their
04:59 23 business in a place other than their domicile?

04:59 24 A. Table A sets out information that
04:59 25 I've gathered as referenced here. That sets

05:00 1 out what I believe to be the place of business
05:00 2 with respect to the different exchanges listed
05:00 3 in Table A, and as derived from information
05:00 4 that is referenced in Table A.

05:00 5 Q. Can you --

05:00 6 A. And footnotes.

05:00 7 Q. I'm sorry. Can you define for me
05:00 8 what "domicile" means as used in your Table A?

05:00 9 A. For me, "domicile" essentially
05:00 10 means the place where the exchange may be
05:00 11 registered, essentially the home base where
05:00 12 the exchange has been incorporated and is
05:00 13 based.

05:00 14 Q. Is there any difference in your
05:00 15 mind between place of incorporation and
05:00 16 domicile?

05:00 17 A. I can't say for sure. Different
05:00 18 countries may apply different jurisdictional
05:00 19 criteria to what they consider to be
05:00 20 incorporation versus how they consider an
05:00 21 exchange to be naturalized within their
05:01 22 particular jurisdiction.

05:01 23 Q. For each of the exchanges listed
05:01 24 on Exhibit A, for the column that says "Place
05:01 25 of Incorporation/Domicile," do you know

05:01 1 whether the entry reflects the place of
05:01 2 incorporation or the domicile or both?

05:01 3 A. I would have to go through the
05:01 4 footnotes to the different exchanges to be
05:01 5 able to answer your question. I mean, the
05:01 6 information that I have here is set out in the
05:01 7 footnotes. To be able to make an attempt at
05:01 8 answering it, I would need to go through the
05:01 9 different footnotes.

05:01 10 Q. But prior to today, you went
05:01 11 through the sources and the footnotes and made
05:01 12 the determination that each of these had the
05:01 13 place of incorporation or domicile reflected
05:01 14 in Table A. Is that right?

05:01 15 A. That's right.

05:02 16 Q. Can we go to paragraph 103 on
05:02 17 page 56. I'd like to ask a question about
05:02 18 your third criteria which reads:

05:02 19 "Third, in what country do market
05:02 20 participants and the public believe the
05:02 21 exchange does business?"

05:02 22 Do you see that?

05:02 23 A. (Document review.)

05:03 24 Q. What is the relevance of what the
05:03 25 public believes as to where a cryptocurrency

05:03 1 exchange is located as distinct from market
05:03 2 participants?

05:03 3 A. The --

05:03 4 MS. ZORNBERG: Object to form.

05:03 5 You can answer.

05:03 6 A. Indicia here references the view
05:04 7 of reasonable market participants, including
05:04 8 members of the public, obviously, as to what
05:04 9 they considered to be the location of an
05:04 10 exchange. I believe that's very important
05:04 11 because it goes directly to the business of
05:04 12 what an exchange does, which is try to attract
05:04 13 traders to the platform to transact in
05:04 14 cryptocurrencies.

05:04 15 Q. In concluding for purposes of
05:04 16 application of your indicia what market
05:04 17 participants believe as to the geographic
05:04 18 locations of an exchange, I believe you've
05:04 19 testified that you relied on your review of
05:04 20 the user agreements, and you also relied on
05:04 21 the sources that are cited in the footnotes
05:04 22 beneath your Table A.

05:04 23 Are there any other sources that
05:04 24 inform that application of that criteria?

05:05 25 MS. ZORNBERG: Objection. Asked

05:05 1 and answered.

05:05 2 You can answer again.

05:05 3 A. Those are the main sources of
05:05 4 information that I relied on with respect to
05:05 5 this indicia.

05:05 6 Q. Your fourth indicia is what
05:05 7 regulators believe with respect to the
05:05 8 location of an exchange. Is that correct?

05:05 9 A. That's correct.

05:05 10 Q. Why is that relevant to the
05:05 11 question of the geographic location of where a
05:05 12 trade occurs?

05:05 13 A. It's extremely relevant in my
05:05 14 opinion. It reflects what informed regulators
05:05 15 believe the regulation -- the location of an
05:05 16 exchange to be. In my mind, that is extremely
05:05 17 important because international regulators
05:05 18 tend to be informed.

05:05 19 Furthermore, they are subject to
05:05 20 and apply international standards as
05:05 21 promulgated by IOSCO in relation to
05:05 22 cooperation between regulators to address
05:06 23 issues of mutual concern.

05:06 24 In that regard, steps taken by
05:06 25 regulators pursuant to IOSCO standards reflect

05:06 1 formal procedures that regulators are subject
05:06 2 to under these different standards, providing
05:06 3 an indication of what informed regulators are
05:06 4 doing, affirmative steps they are taking,
05:06 5 recognizing the jurisdiction of another
05:06 6 country, another location with respect to the
05:06 7 firm whose location they are -- with respect
05:06 8 to the firm that they are seeking information
05:06 9 about.

05:06 10 Q. In preparing your opinions, did
05:06 11 you speak with anyone from any of the
05:06 12 exchanges listed in Table A?

05:06 13 A. No, I did not.

05:06 14 Q. In preparing your opinion, did
05:06 15 you speak to any traders who have traded on
05:06 16 the exchanges listed in Table A?

05:06 17 A. No, I did not.

05:06 18 Q. Turning to paragraph 104 again,
05:07 19 the second sentence says:

05:07 20 "Not every factor is necessary,
05:07 21 and no factor is sufficient, to
05:07 22 understand the location of the
05:07 23 exchanges."

05:07 24 Do you see that?

05:07 25 A. (Document review.)

05:07 1 Yes.

05:07 2 Q. Is it fair to say that that
05:07 3 sentence, at least in part, describes the
05:07 4 application of your methodology as set forth
05:07 5 in your report?

05:07 6 MS. ZORNBERG: Objection to form.
05:07 7 You can answer.

05:07 8 A. That sentence describes the
05:07 9 application of the methodology to the
05:07 10 exchanges in Table A.

05:07 11 Q. How did you reach your opinion
05:07 12 for purposes of the application of your
05:07 13 methodology that not every factor is necessary
05:08 14 and no factor is sufficient?

05:08 15 A. I set out in my opinion what the
05:08 16 indicia do is establish a constellation of
05:08 17 informative factors that help in providing a
05:08 18 guidepost as to where the location of an
05:08 19 exchange is.

05:08 20 And what that does for the
05:08 21 purposes of my opinion is allow that exchange
05:08 22 to either be included or excluded as an
05:08 23 exchange that is located within the United
05:08 24 States.

05:08 25 Q. Are there any factors in your

05:08 1 methodology that are necessary to draw a
05:08 2 conclusion as to where a trade -- sorry --
05:08 3 strike that.

05:08 4 Are there any factors in your
05:08 5 methodology to conclude -- that are necessary
05:08 6 to conclude where a cryptocurrency exchange is
05:08 7 located?

05:08 8 A. My methodology sets out four
05:08 9 indicia. It doesn't give particular weight to
05:08 10 any specific one of those indicia. What it
05:09 11 does is to set out four credible, informative,
05:09 12 reasoned criteria that provide a set of
05:09 13 factors to consider when trying to establish
05:09 14 the location of a cryptocurrency exchange.

05:09 15 Q. Is it fair to say that none --
05:09 16 there's no one factor that's more important
05:09 17 than others under your methodology?

05:09 18 A. My methodology sets out the four
05:09 19 factors. It does not choose one particular
05:09 20 indicia as being particularly dispositive over
05:09 21 and above the others.

05:09 22 Q. Understanding no one is
05:09 23 dispositive, are there any that are more
05:09 24 important than the others?

05:09 25 A. It sets out four factors to guide

05:09 1 regulators, provides a framework. It does not
05:09 2 stipulate as to what weight should be given to
05:09 3 each of these different factors.

05:09 4 Q. Do you think that someone could
05:09 5 apply your four factors to the same set of
05:10 6 exchanges and come up with a different
05:10 7 conclusion about where the exchange is
05:10 8 located?

05:10 9 MS. ZORNBERG: Objection.

05:10 10 A. My opinion here is not to provide
05:10 11 particular locations for the different
05:10 12 exchanges in Table A. My -- the scope of my
05:10 13 opinion is to set out the four indicia and to
05:10 14 decide on that basis whether they're indicia
05:10 15 that can include or exclude the US as a
05:10 16 possible location of the different exchanges
05:10 17 in Table A.

05:10 18 MR. SYLVESTER: Can we take a
05:10 19 brief break, please.

05:11 20 MS. ZORNBERG: Yes.

05:11 21 THE VIDEOGRAPHER: The time is
05:11 22 5:11 p.m. This concludes Media 8. Off
05:11 23 the record.

05:32 24 (Recess taken from 5:11 p.m. to
05:32 25 5:32 p.m.)

05:32 1 THE VIDEOGRAPHER: The time now
05:32 2 is 5:32. This begins Media 9. On the
05:32 3 record.

05:32 4 BY MR. SYLVESTER:

05:32 5 Q. Professor, let's turn back to
05:32 6 paragraph 102 on page 55, please.

05:32 7 Why was it that you decided to
05:32 8 exclude from your indicia of location,
05:32 9 location of employees?

05:32 10 A. So the reason why I rejected that
05:32 11 indicia as being an informative one was
05:33 12 because employees could be located anywhere,
05:33 13 particularly given what we know today about
05:33 14 remote work. People are working from
05:33 15 everywhere.

05:33 16 And so to me -- or could
05:33 17 potentially be working from any location --
05:33 18 and so to me, that did not feature as a
05:33 19 reliable indicator of location.

05:33 20 Q. If all of the management of a
05:33 21 specific cryptocurrency exchange were located
05:33 22 in one place, would that change your opinion
05:33 23 as to that factor's relevance?

05:33 24 A. It would not.

05:33 25 Q. Why was it that you decided to

05:33 1 include cold key storage as a possible indicia
05:33 2 of location of cryptocurrency exchange?

05:34 3 (Discussion off the record.)

05:34 4 A. The reason I excluded cold key
05:34 5 storage was because cold keys are essentially
05:34 6 the passwords to the user accounts at the
05:34 7 exchanges. They are incredibly portable and
05:34 8 they could be essentially anywhere.

05:34 9 They could be carried in
05:34 10 someone's pocket. They could be moved to any
05:34 11 locale. So to me, that was a completely
05:34 12 unreliable indicator of the location of an
05:34 13 exchange.

05:34 14 Q. I want to pose for you another
05:35 15 hypothetical, going back to Bitlish. What if
05:35 16 100 percent of the traders trading on Bitlish
05:35 17 were trading from the US?

05:35 18 Would that affect your opinion at
05:35 19 all as to the location of Bitlish?

05:35 20 A. My indicia here set out the four
05:35 21 criteria. Where the traders are located that
05:35 22 are trading into Bitlish, that is not relevant
05:35 23 as a part of my criteria.

05:35 24 Q. I believe that you testified
05:35 25 earlier that you were aware that Binance has a

05:35 1 US affiliate. Is that right?

05:35 2 A. Based on my general knowledge in
05:35 3 this area, as well as, I believe, a couple of
05:35 4 sources that may be in the report, yes.

05:35 5 Q. Is the existence of a US
05:36 6 affiliate for Binance an indication that some
05:36 7 offers or trades on Binance may have become
05:36 8 final in the United States?

05:36 9 A. I'm sorry. Could you repeat the
05:36 10 question.

05:36 11 Q. Sure. Is the existence of a US
05:36 12 affiliate for Binance an indication that some
05:36 13 offers or trades on Binance may have become
05:36 14 final in the United States?

05:36 15 A. I'm not sure I understand. Why
05:36 16 would that be an indication as to why that
05:36 17 would happen?

05:36 18 Q. I believe that if you return to
05:36 19 paragraph 99, you'll recall we discussed
05:36 20 earlier your opinion that, because certain
05:36 21 exchanges have a foreign arm, it is not
05:36 22 determinable in the abstract whether for any
05:36 23 particular trade the transaction became final
05:36 24 within the United States.

05:36 25 Do you remember that?

05:36 1 A. That's right.

05:36 2 Q. Okay. So I'm just trying to flip
05:36 3 that analogy the other way. So since Binance
05:37 4 has a US affiliate, is it possible that some
05:37 5 of the trades on Binance became final in the
05:37 6 United States?

05:37 7 A. So I think my methodology here
05:37 8 you may be slightly misunderstanding in how
05:37 9 you're presenting it. The four indicia here
05:37 10 provide a guide as to the location of a
05:37 11 particular cryptocurrency exchange.

05:37 12 I applied these four indicia, the
05:37 13 25 exchanges, to determine whether one can
05:37 14 exclude the US as a possible location where
05:37 15 these exchanges may be based.

05:37 16 I made the observation here based
05:37 17 on my reading of the [REDACTED] deposition as well as
05:37 18 my possession of and my review of the Coinbase
05:37 19 Singapore terms that, for completeness, it may
05:37 20 be worth looking at the potential for trades
05:37 21 to have occurred through the foreign
05:37 22 affiliates of Coinbase, Kraken, Bittrex, and
05:38 23 Poloniex.

05:38 24 With respect to that observation,
05:38 25 the second part, one could apply my indicia to

05:38 1 the foreign affiliates of Kraken, Poloniex,
05:38 2 Bittrex, and Coinbase to establish where they
05:38 3 may likely be located and whether they may be
05:38 4 including or excluding the US as an indicia.

05:38 5 So my methodology does not
05:38 6 require looking at the different affiliates.
05:38 7 What it's doing is identifying four core
05:38 8 indicia, applying them to the exchanges in
05:38 9 Table A as a way to include or exclude the US
05:38 10 as a possible place where indicia may point to
05:38 11 as a location for an exchange.

05:38 12 Q. Okay. So since Binance has a
05:39 13 United States arm, how is it that you're able
05:39 14 to exclude the US as a possible location for
05:39 15 Binance?

05:39 16 A. I looked at the exchanges in
05:39 17 Table A. I applied my indicia to those
05:39 18 exchanges in Table A. Binance US was not
05:39 19 on -- one of the exchanges on Table A.

05:39 20 Q. How did you determine which
05:39 21 exchanges to include in Table A?

05:39 22 MS. ZORNBERG: Object to form.

05:39 23 A. I received those specific
05:39 24 exchanges from counsel.

05:39 25 Q. Do you have any understanding of

05:40 1 the significance, if any, of this set of 24
05:40 2 exchanges reflected in Table A?

05:40 3 A. I believe --

05:40 4 MS. ZORNBERG: I will say, you
05:40 5 can answer without disclosing
05:40 6 communications with counsel.

05:40 7 A. My understanding is that there
05:40 8 may have been trades of XRP on the exchanges
05:40 9 listed in Table A.

05:40 10 Q. If one of the exchanges on your
05:40 11 Table A had a US parent company, would that be
05:40 12 any indication of -- that some offers or
05:40 13 trades on that exchange may have become final
05:40 14 in the United States?

05:40 15 A. No. The exchange is as set out
05:41 16 in Table A.

05:41 17 MS. ZORNBERG: Hold on, the audio
05:41 18 is echoing. It stopped but it was -- we
05:41 19 were getting feedback. Everything the
05:41 20 witness said was being -- spitting back
05:41 21 out.

05:41 22 Coming from your --

05:41 23 Q. Do you want to say something
05:41 24 again, Professor?

05:41 25 A. I'm so sorry. I think I lost

05:41 1 my--

05:41 2 Q. That's fine. I just -- I think
05:41 3 we're good.

05:41 4 MS. ZORNBERG: Okay. It stopped.

05:41 5 THE VIDEOGRAPHER: Somebody might
05:41 6 have unmuted themselves on Zoom.

05:41 7 Q. Let me repeat the question if
05:41 8 that's okay.

05:41 9 A. Thank you.

05:41 10 Q. If one of the exchanges on Table
05:41 11 A had a US parent company, would that be any
05:41 12 indication that some of the offers or trades
05:41 13 on that exchange may become final in the
05:41 14 United States?

05:41 15 A. What my report does is set out
05:41 16 the four indicia that point to the location of
05:41 17 a cryptocurrency exchange looking at aspects
05:42 18 such as registered office, domicile, place of
05:42 19 business, to determine whether that indicia
05:42 20 points to the US or otherwise as a possible
05:42 21 location.

05:42 22 The parent as a separate legal
05:42 23 entity has no bearing on the application of
05:42 24 these indicia to the actual exchange itself.
05:42 25 The indicia could be applied to the parent to

05:42 1 determine where its possible location could
05:42 2 be.

05:42 3 But with respect to the exchanges
05:42 4 set out in Table A as well as more generally
05:42 5 with respect to the methodology, it sets out
05:42 6 four criteria that help point to the location
05:42 7 of a cryptocurrency exchange, where trades
05:42 8 become final on that exchange. And that's
05:42 9 really what the methodology is doing here.

05:42 10 Q. Do you know one way or the other
05:42 11 whether defendants employed market makers to
05:42 12 sell XRP?

05:42 13 MS. ZORNBERG: Objection.

05:42 14 A. I really have no idea.

05:43 15 Q. Okay.

05:43 16 A. I don't know.

05:43 17 Q. Did you as part of your
05:43 18 analysis -- strike that.

05:43 19 You cite [REDACTED] testimony at
05:43 20 various places in your report. Correct?

05:43 21 A. I do, yes.

05:43 22 Q. Do you know what firm [REDACTED] is
05:43 23 affiliated with?

05:43 24 A. I believe he's affiliated with
05:43 25 [REDACTED]

05:43 1 Q. And do you know what, if any,
05:43 2 relationship [REDACTED] has with Ripple?

05:43 3 A. My understanding based on
05:43 4 [REDACTED] deposition is that he was an
05:43 5 execution agent.

05:43 6 Q. When you say "execution agent,"
05:43 7 will you tell me what you mean by that?

05:43 8 A. I believe he --

05:43 9 MS. ZORNBERG: Objection.

05:43 10 THE WITNESS: Sorry.

05:43 11 MS. ZORNBERG: You can answer.

05:43 12 A. I believe he helped facilitate
05:43 13 trades for the defendants.

05:43 14 Q. Okay. XRP trades. Is that
05:43 15 right?

05:44 16 A. I --

05:44 17 MS. ZORNBERG: Object to form.

05:44 18 A. I'm not sure. I believe -- I
05:44 19 believe so based on my recollection of the
05:44 20 deposition.

05:44 21 Q. Okay. Have you reviewed the
05:44 22 terms of service of any agreements that [REDACTED]
05:44 23 may have signed with any cryptocurrency
05:44 24 exchange?

05:44 25 A. I have reviewed the terms of

05:44 1 service as set out in my report. I have not
05:44 2 reviewed any terms of service specific to [REDACTED]

05:44 3 Q. Other than [REDACTED] are you aware of
05:44 4 any other market makers the defendants
05:44 5 employed to sell XRP?

05:44 6 MS. ZORNBERG: Objection. Lack
05:44 7 of foundation.

05:44 8 Q. Go ahead.

05:44 9 A. No.

05:44 10 Q. As part of your work in forming
05:44 11 your opinions, did you analyze which exchanges
05:44 12 accepted US customers?

05:44 13 A. No.

05:44 14 Q. As part of your work in forming
05:44 15 your opinion, did you analyze which, if any,
05:45 16 exchanges affirmatively blocked US customers
05:45 17 from trading on their exchanges?

05:45 18 A. Could you repeat the question.

05:45 19 Q. Sure. As part of your work in
05:45 20 forming your opinion, did you assess whether
05:45 21 any of the exchanges listed in your Table A
05:45 22 took any steps to block US customers from
05:45 23 trading on those exchanges?

05:45 24 A. In forming my opinion, I did not
05:45 25 look at that as a factor relevant to forming

05:45 1 my opinion about where trades become final and
05:45 2 where exchanges are located.

05:45 3 Q. And you're not opining on where
05:45 4 any particular trade became final as part of
05:45 5 your opinion, are you?

05:45 6 A. I'm not.

05:45 7 Q. Could we turn to page -- sorry --
05:45 8 paragraph 113, page 70 of your report.

05:46 9 A. I'm sorry, I missed that.

05:46 10 Q. Fair enough. Paragraph 113, page
05:46 11 70.

05:46 12 A. Thank you very much.

05:46 13 Q. I'll direct you to the second
05:46 14 sentence where you say:

05:46 15 "First, I am aware that certain
05:46 16 of the exchanges listed in Table A,
05:46 17 including those that I do not believe
05:46 18 finalize trades in the US, have had
05:46 19 contact with or submitted license
05:46 20 applications to certain US regulators."

05:46 21 Do you see that?

05:46 22 A. (Document review.)

05:47 23 Q. My first question is: Are you
05:47 24 aware of any instances of the exchanges listed
05:47 25 in Table A submitting license applications

05:47 1 other than those that are cited in
05:47 2 Footnote 287?

05:47 3 A. Other than that -- other than
05:48 4 those cited in the footnotes, I'm not aware of
05:48 5 other exchanges listed in Table A submitting
05:48 6 applications.

05:48 7 Q. And then one sentence later, you
05:48 8 say:

05:48 9 "Importantly, to the best of my
05:48 10 understanding, these interactions with
05:48 11 regulators do not constitute evidence
05:48 12 that these exchanges were finalizing
05:48 13 trades in the US."

05:48 14 Do you see that?

05:48 15 A. (Document review.)

05:48 16 Yes.

05:48 17 Q. What is your understanding
05:48 18 described in that sentence based upon?

05:48 19 A. It's based upon my general
05:48 20 knowledge of the marketplace and what the
05:48 21 purposes of licensure tends to be.

05:48 22 The purposes of licensure with
05:48 23 respect to FinCEN registration, for example,
05:49 24 based on my general research and
05:49 25 understanding, is not necessarily related to

05:49 1 any meaning to finalize trades. It can be
05:49 2 done for any number of reasons that have
05:49 3 nothing to do with that.

05:49 4 Q. Other than the money services
05:49 5 business registrant search -- strike that.

05:49 6 Are you aware of any of the
05:49 7 exchanges listed in Table A applying for any
05:49 8 kind of license with any US regulator other
05:49 9 than money services business license?

05:49 10 A. I'm not aware.

05:49 11 Q. Okay. Going back to 113, the
05:49 12 next sentence, you say:

05:49 13 "Rather, a more plausible account
05:49 14 is that these exchanges were trying to
05:49 15 get permission to engage in some
05:49 16 exchange business in the US (e.g.,
05:49 17 through registration with FinCEN as a
05:50 18 money services business."

05:50 19 Why is that more plausible in
05:50 20 your view than the conclusion that an exchange
05:50 21 was seeking a license from a US regulator
05:50 22 because it finalizes trades in the US?

05:50 23 A. The purposes of registering with
05:50 24 FinCEN, as far as I understand it, is to gain
05:50 25 permission to be able to conduct potential

05:50 1 payments related money services business, or
05:50 2 sometimes defensively as a way to avoid
05:50 3 inadvertently being caught in US money
05:50 4 laundering and terrorist financing
05:50 5 regulations, or as a potential aspirational
05:50 6 matter where the exchange may be looking for
05:50 7 some future presence in the US.

05:50 8 Q. How did you come to the
05:50 9 understanding of the purposes that you just
05:50 10 listed?

05:50 11 A. Based on my general research and
05:50 12 knowledge in this area.

05:50 13 Q. Were you aware of those purposes
05:50 14 prior to your engagement in this case?

05:50 15 A. I was aware of FinCEN, what
05:51 16 FinCEN does as part of my general knowledge in
05:51 17 the financial markets and regulatory sphere.

05:51 18 Q. In forming your opinion in this
05:51 19 case, did you consider the definition of
05:51 20 "exchange" under the US securities laws?

05:51 21 MS. ZORNBERG: Objection.

05:51 22 A. No, I did not.

05:51 23 Q. Do you have any understanding of
05:51 24 the factors that the SEC uses in determining
05:51 25 whether an exchange has to register with the

05:51 1 commission?

05:51 2 A. I'm not here to give a legal
05:51 3 opinion or to look at legal factors.

05:51 4 Q. Understanding that, I'm just
05:51 5 asking you for your understanding. Do you
05:51 6 have an understanding of the factors that the
05:51 7 SEC uses in determining whether an exchange
05:51 8 has to register with the commission?

05:51 9 A. Again, without -- with the caveat
05:51 10 that I'm not giving a legal opinion but a
05:51 11 market structure opinion, I'm aware.

05:51 12 Q. Does the commission focus on the
05:51 13 physical location that orders are matched on
05:51 14 the exchange in making that determination?

05:51 15 MS. ZORNBERG: Objection. Calls
05:51 16 for a legal conclusion.

05:51 17 A. I'm not here to give a legal
05:52 18 opinion.

05:52 19 Q. Understanding that, I'm just
05:52 20 asking about the facts that are or are not in
05:52 21 your head.

05:52 22 MS. ZORNBERG: Yeah, but it's so
05:52 23 far outside of scope that it's not
05:52 24 proper.

05:52 25 MR. SYLVESTER: I'm not sure

05:52 1 that -- I mean, are you instructing her
05:52 2 not to answer? It doesn't sound
05:52 3 privileged to me. I'm asking just
05:52 4 whether she knows or she doesn't know.

05:52 5 MS. ZORNBERG: Please note my
05:52 6 objection.

05:52 7 MR. SYLVESTER: Fair enough.

05:52 8 MS. ZORNBERG: Improper line of
05:52 9 questioning.

05:52 10 MR. SYLVESTER: Okay.

05:52 11 BY MR. SYLVESTER:

05:52 12 Q. Does the commission focus on the
05:52 13 physical location that orders are matched on
05:52 14 an exchange in order to determine whether an
05:52 15 exchange has to register with the commission?

05:52 16 MS. ZORNBERG: Objection.

05:52 17 A. Again, with the caveat that I'm
05:52 18 not giving a legal opinion, I would have to go
05:52 19 ahead and consult the statute book and the
05:52 20 application of the statutes. So that question
05:52 21 is a complicated question.

05:52 22 Q. Do you know, sitting here today,
05:52 23 whether, in determining whether an exchange
05:52 24 has to register with the commission, the
05:52 25 commission looks at whether any component of

05:52 1 the exchange is used by US investors?

05:52 2 MS. ZORNBERG: Objection.

05:52 3 A. I'm not here to give a legal
05:52 4 opinion. With that caveat, again, I'd have to
05:53 5 go and do research.

05:53 6 Q. Again, just asking your
05:53 7 understanding, do you know whether or not the
05:53 8 commission looks at whether any component of
05:53 9 an exchange is located in the US in
05:53 10 determining whether or not that exchange has
05:53 11 to register with the commission?

05:53 12 MS. ZORNBERG: Objection.

05:53 13 A. With the caveat I'm not giving a
05:53 14 legal opinion, that's a question for which I
05:53 15 would have to go and do research.

05:53 16 Q. Let's look at the last sentence
05:53 17 of paragraph 113, please. That's on the top
05:54 18 of page 71. It says:

05:54 19 "Thus, absent other specific
05:54 20 indicia, and based on the approach
05:54 21 outlined in this section, I would
05:54 22 continue to conclude that trades on the
05:54 23 exchanges in Table A other than Bittrex,
05:54 24 Poloniex, Coinbase, and Kraken would not
05:54 25 have occurred in the US."

05:54 1 My question is just, what are the
05:54 2 other specific indicia that might affect your
05:54 3 opinion as set forth at the end of paragraph
05:54 4 113?

05:54 5 A. (Document review.)

05:54 6 So what that sentence refers to
05:54 7 is the fact that there are no indicia with
05:54 8 respect to the 25 exchanges, other than the
05:54 9 four mentioned here, that point to the US as a
05:54 10 plausible location for the exchanges mentioned
05:54 11 outside of the four mentioned here.

05:55 12 Q. Let's look at your final
05:55 13 paragraph, paragraph 114. Second sentence,
05:55 14 you write:

05:55 15 "Based on my research, it is my
05:55 16 understanding that many cryptocurrency
05:55 17 exchanges tend to avoid becoming located
05:55 18 in the US and falling within the purview
05:55 19 of US regulators."

05:55 20 What's the basis for that
05:55 21 statement?

05:56 22 A. (Document review.)

05:56 23 The basis for that statement is
05:56 24 my general research and understanding of the
05:56 25 marketplace.

05:56 1 Q. Is that research and
05:56 2 understanding of the marketplace that is
05:56 3 specific to the preparation of this report, or
05:56 4 something that predated your report?

05:56 5 A. Predated.

05:56 6 Q. Why is it, if you have an
05:56 7 understanding, that many cryptocurrency
05:56 8 exchanges tend to avoid becoming located in
05:56 9 the US and falling within the purview of US
05:56 10 regulators?

05:56 11 A. Speculating, hypothetically. I
05:56 12 can't speak to the exchanges themselves.
05:56 13 Based on what I've read, I think it's a
05:56 14 general fear of being caught potentially
05:56 15 within regulation inadvertently. That appears
05:57 16 to be the driving reason.

05:57 17 Q. When you say regulation, what is
05:57 18 it that you're referring to?

05:57 19 A. Potentially being caught within
05:57 20 the purview of US regulation.

05:57 21 Q. The last two sentences of 114
05:57 22 say:

05:57 23 "Within this environment, it
05:57 24 makes sense that most of the exchanges
05:57 25 noted above would locate themselves in

05:57 1 jurisdictions outside of the US and
05:57 2 would seek to avoid falling within US
05:57 3 territorial borders. To the extent they
05:57 4 do so, it is likely to be an accidental
05:57 5 and inadvertent mistake or by way of
05:57 6 minor, inconsequential physical presence
05:57 7 that does not affect the location of the
05:57 8 underlying exchange or where trades on
05:57 9 the exchange become final."

05:58 10 Do you see that?

05:58 11 A. Yes.

05:58 12 Q. What is your basis for concluding
05:58 13 that "to the extent they do so, it is likely
05:58 14 to be an accidental and inadvertent mistake or
05:58 15 by way of minor, inconsequential physical
05:58 16 presence"?

05:58 17 A. Based on my general research and
05:58 18 understanding, as cited to the source here,
05:58 19 the, for example, the website about how to
05:58 20 build a cryptocurrency exchange, it is
05:58 21 generally, as noted here, a sentiment that
05:58 22 exchanges try and avoid falling within US
05:58 23 regulation, within the jurisdiction of the US,
05:58 24 and therefore, it is likely that if they do
05:59 25 so, it would be accidental.

05:59 1 Q. What is an example of an
05:59 2 accidental or inadvertent mistake that could
05:59 3 have that consequence?

05:59 4 A. Hard to speculate. They may --
05:59 5 it's hard to speculate.

05:59 6 Q. What did you have in mind when
05:59 7 you wrote that phrase?

05:59 8 A. For example, potentially they
05:59 9 establish a presence here of some description.

05:59 10 Q. Same question. What's an example
05:59 11 of a minor, inconsequential physical presence?

05:59 12 A. For example, a post box or a
05:59 13 registered office.

05:59 14 Q. In your view would a post office
05:59 15 box or a registered office be relevant to the
06:00 16 geographic location of the exchange?

06:00 17 A. The four indicia do not mention
06:00 18 offices, post boxes, and so, no.

06:00 19 Q. Did anyone assist you in
06:00 20 generating the four indicia that you apply in
06:00 21 this report?

06:00 22 A. This was my work.

06:00 23 Q. Be that as it may, did anyone
06:00 24 assist you in generating the four indicia that
06:00 25 you apply in your report?

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A. What do you mean --

MS. ZORNBERG: Objection.

THE WITNESS: Sorry.

A. I don't know what you mean by "assist" me.

Q. Did you receive input from anyone as to what four indicia you should select as your methodology in your report?

A. No, these were my indicia based on my research, my experience, and expertise.

MR. SYLVESTER: Okay. I don't have any further questions at this time.

Do you have redirect?

MS. ZORNBERG: Let me just consult with counsel.

MR. SYLVESTER: Sure.

(Continued on the next page.)

06:01 1 THE VIDEOGRAPHER: The time is
06:01 2 6:00 p.m. This concludes Media 9.
06:01 3 The time is 6:01 p.m. This
06:01 4 continues Media 9. Still on the record.
06:01 5 MS. ZORNBERG: Nothing further on
06:01 6 behalf of the defendants.
06:01 7 MR. SYLVESTER: Wonderful.
06:01 8 Professor, thank you very much
9 for your time today.
10 THE WITNESS: Thank you very much
11 for your time today. I really
12 appreciate it.
13 MR. SYLVESTER: Off the record.
14 Okay.
06:02 15 (Discussion off the record.)
06:02 16 THE VIDEOGRAPHER: The time is
17 6:02 p.m. This concludes Media 9 of 9.
18 Off the record.
19 (Time noted: 6:02 p.m.)
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CERTIFICATE OF WITNESS

I, YESHA YADAV, do hereby declare under penalty of perjury that I have read the entire foregoing transcript of my deposition testimony, or the same has been read to me, and certify that it is a true, correct and complete transcript of my testimony given on February 11, 2022, save and except for changes and/or corrections, if any, as indicated by me on the attached Errata Sheet, with the understanding that I offer these changes and/or corrections as if still under oath.

_____ I have made corrections to my deposition.

_____ I have NOT made any changes to my deposition.

Signed: _____

YESHA YADAV

Dated this _____ day of _____ of 20____.

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C E R T I F I C A T E

STATE OF NEW YORK)
: ss.
COUNTY OF NASSAU)

I, PATRICIA A. BIDONDE, a Notary Public within and for the State of New York, do hereby certify:

That YESHA YADAV, the witness whose deposition is hereinbefore set forth, was duly sworn by me, and that such deposition is a true record of the testimony given by the witness.

I further certify that I am not related to any of the parties to this action by blood or marriage, and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this day, February 11, 2022.

Patricia Bidonde

PATRICIA A. BIDONDE
Stenographer
Registered Professional Reporter
Realtime Certified Reporter

