Exhibit 12

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

SECURITIES AND EXCHANGE COMMISSION, Plaintiff, *-against-* **RIPPLE LABS, INC., BRADLEY GARLINGHOUSE, and CHRISTIAN A. LARSEN,** Defendants.	Case No. 20-CV-10832 (AT)

Rebuttal Expert Report of

Allen Ferrell, Ph.D.

November 12, 2021

I. INTRODUCTION

A. QUALIFICATIONS

1. I am an economist and the Greenfield Professor of Securities Law at Harvard Law School. I received a Ph.D. in economics from the Massachusetts Institute of Technology, with fields in econometrics and finance, and a J.D. from Harvard Law School. My Ph.D. dissertation concerned the relationship between stock prices and financial disclosures. After law school, I clerked for Judge Silberman of the United States Court of Appeals for the D.C. Circuit and Justice Kennedy of the Supreme Court of the United States.

2. I am also a faculty associate at the Kennedy School of Government at Harvard, a fellow at Columbia University's Program on the Law and Economics of Capital Markets, a research associate at the European Corporate Governance Institute, and a member of the editorial board of the Journal of Financial Perspectives. I formerly was a member of the Board of Economic Advisors to the Financial Industry Regulatory Authority ("FINRA"), an academic fellow at FINRA, Chairperson of Harvard's Advisory Committee on Shareholder Responsibility (which is responsible for advising the Harvard Corporation on how to vote shares held by its endowment), the ABA Task Force on Corporate Governance, the American Law Institute Project on the Application of U.S. Financial Regulations to Foreign Firms and Cross-Border Transactions, and an executive member of the American Law School section on securities regulation. My current curriculum vitae is listed in Appendix A. I am being compensated for my time on this matter at a rate of $1,250 per hour. My compensation is not contingent on the outcome of this case. No element of my compensation is dependent on the opinions offered in this case.

3. The materials I have considered are listed in Appendix B.

4. This report is subject to change or modification should additional relevant information become available which bears on the analysis, opinions, or conclusions contained herein.

B. OVERVIEW OF DR. [redacted] OPINIONS

5. Ripple Labs Inc. ("Ripple") is a San Francisco-based privately held payments technology company that utilizes distributed ledger technology, including the cryptocurrency XRP, in cross-border payment technology.[1] Plaintiff Securities and Exchange Commission (the "SEC") alleges that defendants[2] engaged in the "unlawful offer and sale of securities in violation of Sections 5(a) and 5(c) of the Securities Act of 1933 ('Securities Act') [15 U.S.C. §§ 77e(a) and 77e(c)]."[3] The SEC presented five expert reports to support its allegations, including the Amended Expert Report of J[redacted] served on October 13, 2021.[4]

6. Dr. [redacted]main opinions can be summarized as follows:

a. Dr. [redacted]claims that Ripple and its executives directed market maker, GSR, to purchase XRP "in a manner consistent with i) pushing prices upward, or ii) providing a price floor to stabilize and keep prices from falling."[5] According to Dr. [redacted] Ripple "employed trading strategies to protect the price of XRP"[6]

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[1] Ripple Labs Inc., *Consolidated Financial Statements*, December 31, 2014 through December 31, 2020. As of September 15, 2014, Ripple has been incorporated in the State of Delaware. *See* Ripple Labs, *Good Standing Certificate*, December 1, 2014, at 1.

[2] Defendants are Ripple, Bradley Garlinghouse, and Christian A. Larsen.

[3] First Amended Complaint, *Securities and Exchange Commission v. Ripple Labs, et al.*, No. 1:20-cv-10832 (S.D.N.Y. February 18, 2021), at ¶ 9.

[4] Amended Expert Report of [redacted] October 13, 2021 (hereinafter, "[redacted] Report").

[5] [redacted] Report, at ¶ 9.a.

[6] [redacted] Report, at ¶ 9.b.

by selling XRP to purchasers "in a manner designed to minimize downward pressure on the price of XRP."[7]

b. Dr. [redacted] further claims that lock-up restrictions contained in certain Ripple agreements "functioned similarly to lock-up restrictions in a traditional company's Initial Public Offering, and allowed Ripple to protect the price of XRP from falling."[8] He also contends that Ripple used XRP in a similar manner as companies use stock to incentivize employees and that XRP was used to "fund Ripple operations[[9]] and to enrich Ripple's founders, directors, and early employees."[10]

c. Finally, Dr. [redacted] claims that Ripple and its executives were incentivized to "influence XRP prices in order to maximize the proceeds"[11] and that, in addition to Ripple's sales of XRP, Mr. Larsen and Mr. Garlinghouse transferred large amounts of XRP to GSR.[12]

C. ASSIGNMENT AND CONCLUSIONS

7. I have been asked by counsel for Ripple to assess the claims, summarized above, made in the [redacted] Report. Before doing so, I note that there is nothing in the Griffin Report that has caused me to change or alter any of the opinions I expressed in my opening report.[13]

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[7] [redacted] Report, at ¶ 9.b.

[8] [redacted] Report, at ¶ 9.c.

[9] Including "a funding gap of over $800 million." *See* [redacted] Report, at ¶ 9.e.

[10] [redacted] Report, at ¶ 9.f.

[11] [redacted] Report, at ¶ 9.d.

[12] [redacted] Report, at ¶ 9.d.

[13] Expert Report of Allen F. Ferrell, October 4, 2021 (hereinafter, "Ferrell Report").

8. Overall, Dr. [redacted] opinions on coordination between GSR and, respectively, Ripple, Christian Larsen, and Bradley Garlinghouse to "buy in a manner consistent with i) pushing prices upward, or ii) providing a price floor to stabilize and keep prices from falling"[14]; his opinions on defendants' alleged efforts in selling XRP (through market making firms) so as not to affect the price of XRP[15]; and his opinions on Ripple using XRP in "a similar manner as companies use stock"[16] — a misleading and disingenuous premise — are not supported by any methodology or analysis that supports an opinion that these actions resulted in any sustained impact on the market price of XRP. In any event, Dr. [redacted] opinions are irrelevant for assessing whether the economic substance of XRP constituted an investment contract.[17]

9. Dr. [redacted] analysis is flawed. Dr. [redacted] focuses on short-term trading patterns that he observes on select dates. As an initial matter, Dr. [redacted] does not (and cannot) explain why a handful of trades on just a few cherry-picked dates would have resulted in any long-term impact on the market price of XRP, much less caused purchasers of XRP to have any reasonable expectation of profits from Ripple's conduct. Further, Dr. [redacted] discussion of the trading patterns lacks rigorous empirical analysis. He merely shows charts (Figures 1 through 6) on a

[14] *See, e.g.*, [redacted] Report, at ¶ 9.a ("At specific times, Ripple and its executives directed GSR, a digital asset trading and market making firm,[footnote omitted] to buy XRP in a manner consistent with i) pushing prices upward, or ii) providing a price floor to stabilize and keep prices from falling.").

[15] *See, e.g.*, [redacted] Report, at ¶ 9.b ("Through market making firms, Ripple sold XRP to purchasers in a manner designed to minimize downward pressure on the price of XRP. Ripple employed trading strategies to protect the price of XRP.").

[16] *See, e.g.*, [redacted] Report, at ¶ 9 ("Ripple and its executives at specific times took steps to influence the price of XRP and their sales of XRP functioned similarly to that of a public equity offering for Ripple."), at ¶ 53 ("Ripple used XRP in a similar manner as companies use stock.").

[17] *See, e.g.*, [redacted] Report, at ¶ 9.f ("Ripple used XRP in a similar manner as companies use stock.").

few select days in a 2,694-day time period[18] when the alleged trading patterns "coincide[d]" with XRP price changes, which he links mostly to communications by Ripple around these dates.[19, 20]

10. Moreover, Dr. [redacted] purported findings of correlations between price changes in XRP and defendants' trade executions do not support an opinion that defendants' trading resulted in any price change. This is probably why Dr. [redacted] repeatedly casts his opinion in terms of his analysis being "consistent" with Ripple "attempting" to influence prices, or his vague observation that defendants' actions "coincided" with XRP price changes. Indeed, he employs no statistical or rigorous analysis that demonstrates any such causation. Even if the trading patterns in question could have had an effect on prices, he does not quantify the amount of such an effect or show that it lasted beyond the time periods he selected. Dr. [redacted] single regression analysis, which he claims is consistent with the communications between Ripple and GSR "where Ripple expressed a desire to sell XRP when the price of XRP increased,"[21] at best demonstrates a correlation between imbalance — that is, total number of XRP purchased minus total number of XRP sold — and lagged XRP price return.[22]

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[18] The number of days in the time period August 6, 2013 to December 20, 2020 is 2,694.

[19] *See, e.g.*, [redacted] Report, at ¶ 18 ("GSR is then a large net buyer of XRP for the next five hours. During these five hours, XRP jumps from $.0061 to a high of $0.0093, for a gain of $0.0032."), at ¶ 23 ("GSR made several large purchases of XRP that both preceded and accompanied a dramatic rise in the price of XRP of over 15 percent within 24 hours."), at ¶ 28 ("As can be seen in Figure 5, [Mr. Larsen's] buying beginning on June 10 coincided with the price of XRP stabilizing around 0.00009 XRP/BTC, and later reversing its earlier decline.").

[20] Examples of Dr. [redacted] vague, unsupported statements include, but are not limited to, his statement that "Ripple and certain of its executives directed GSR to trade XRP on behalf of Ripple in a *way consistent with an attempt* to increase or stabilize the price of XRP," [redacted] Report, at ¶ 25 [emphasis added], and that "GSR also executed uneconomic trades whose purpose *appears to be* to push the price of XRP upward," [redacted] Report, at ¶ 21 [emphases added].

[21] [redacted] Report, at ¶ 35 ("The findings from this regression analysis are also consistent with communications between Ripple and GSR where Ripple expressed a desire to sell XRP when the price of XRP increased.").

[22] [redacted] Report, at ¶ 33 ("To better understand whether the behavior observed in the example shown in Figure 6 is persistent across a wider time period, I next examine whether Ripple's market makers GSR and [redacted] tend to sell less when prices fall and sell more when prices are stabilized or rising. [..] Imbalance is defined as the total number of XRP purchased minus total number of XRP sold in a day normalized by the average circulating supply."). *See also* [redacted] Report, at ¶ 29 (GSR and [redacted] "sold more XRP following

11. Based on my analysis, my review of the materials listed in Appendix B, and my general expertise and experience, I have concluded that:

- None of the alleged short-term trading patterns and XRP price changes Dr. [redacted] observes are lasting. Prices of XRP before and after his selected time periods do not show any long-term, sustained effect as a result of the alleged trading patterns of Ripple, Mr. Larsen, or Mr. Garlinghouse. The blips on the handful of days he selects are just "noise" that drops out when viewed against the long-term price movements of XRP.
- Dr. [redacted] allegations that Ripple and the individual defendants executed sales in a manner designed to minimize negative price impacts on the market price of XRP, and/or to increase its price, are not relevant to determining whether the economic substance of defendants' offers and sales of XRP constitute an investment contract.
    - Foreign exchange or futures traders routinely manage the manner in which sales are executed to minimize adverse price impacts. The fact that market actors attempt to minimize the price impact associated with their sales is hardly surprising or novel, and does not support an opinion that XRP is a security.
    - Ripple has bona fide business reasons to increase the liquidity of XRP for use in settlements.
    - Dr. [redacted] opinion is based on select trading patterns on just a handful of dates across a multi-year period; he does not and cannot offer any explanation as to how trades by Ripple and the individual defendants on these few dates would lead

price increases"), at ¶ 34 ("I conclude that [GSR and [redacted] on behalf of Ripple, sold more XRP when the price of XRP was increasing and relatively less when the price was decreasing on the previous day."), and at ¶ 35 ("The findings from this regression analysis are also consistent with communications between Ripple and GSR where Ripple expressed a desire to sell XRP when the price of XRP increased.").

unrelated purchasers of XRP to believe that they could expect profits on their holdings of XRP from Ripple's efforts.

- As the factor analysis presented in my opening report shows, the long-run prices of XRP were influenced, not by the efforts of Ripple, but by the changes in the value of cryptocurrencies generally; focusing, instead, on a handful of select days does not constitute a reliable scientific methodology.
- Dr. [redacted] contention that Ripple sold XRP to fund operations or repurchase Ripple equity is also irrelevant to whether the economic substance of those sales constitutes an investment contract. Contrary to Dr. [redacted] assertions, sales of XRP are not equivalent to a capital raise through a sale of securities. None of the defendants' sales of XRP gave the owners of XRP any right to future cash flows from Ripple, or to a share in Ripple's profits. As a matter of economic substance, holders of XRP are holders of a virtual currency.
- Using XRP as a component of executive compensation is equally irrelevant to whether the economic substance of XRP constitutes an investment contract. Such compensation does not give the employees any contractual right to a share of Ripple's profits if Ripple is successful in its ongoing efforts to manage and develop its business operations or impose any obligation on Ripple to expend ongoing efforts to increase the price of XRP.

II. DR. [redacted] ANALYSIS OF RIPPLE'S "EFFORTS," DEFINED IN A MANNER IN WHICH RIPPLE, MR. LARSEN, AND MR. GARLINGHOUSE DISTRIBUTED XRP, IS IRRELEVANT FOR ASSESSING WHETHER XRP HAS THE ECONOMIC CHARACTERISTICS OF AN INVESTMENT CONTRACT

A. DR. [redacted] CLAIMS OF RIPPLE'S AND MR. LARSEN'S NET PURCHASES POSITIVELY IMPACTING XRP PRICES ARE UNSUPPORTED

12. Dr. [redacted] claims that at specific times GSR "traded in a manner consistent with the directions from Ripple executives to increase or stabilize the price of XRP"[23] or timed purchases to "maximize the price of XRP around large news announcements."[24] Dr. [redacted] attempts to support his claims regarding Ripple's alleged behavior with "plots of XRP transactions conducted by GSR" on six selected dates in 2016 and eleven dates in 2017.[25] His analysis does not include any consideration of the amount of these sales as compared with the global (or even specific exchange) sales of XRP on that date; nor does he engage in any analysis of the mechanics of price discovery for XRP on those days. Moreover, he fails to analyze XRP price returns on the full sample of days between August 2013 and December 2020, instead restricting his analysis to a limited number of days that he selected. In contrast, the factor analysis I presented in my opening report in Section III.C, analyzed XRP price returns over the entire time period at issue, and did not use trading volume from a single participant such as GSR. Before turning to the details of his examples, I will first make several general observations concerning Dr. [redacted] approach.

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[23] [redacted] Report, at ¶ 15 ("Ripple has stated in its submissions in this litigation that Ripple and its executives 'do not control the price of XRP' and that the price of XRP is 'not based on the efforts of Ripple.' Yet, Ripple and its executives explicitly directed at least one of their market makers, GSR, to purchase or refrain from selling XRP at specific times with a stated intent of influencing the price of XRP. GSR traded in a manner consistent with the directions from Ripple executives to increase or stabilize the price of XRP as described in these emails and shown below.").

[24] [redacted] Report, at ¶ 17 ("Based on emails from as early as 2016, Ripple executives worked directly with GSR to devise trading strategies to positively influence XRP prices. In some instances, these were timed to maximize the price of XRP around large news announcements.").

[25] [redacted] Report, at Figure 1, Figure 2, Figure 3, Figure 4, and Figure 5.

13. Strikingly, Dr. [redacted] employs no statistical or formal analysis to analyze whether Ripple or Mr. Larsen actually influenced XRP prices, despite claiming that he reached an appropriately supported opinion that defendants took steps to influence the price of XRP.[26] His graphical representations on select dates merely show that GSR's purchases and sales of XRP, on behalf of Ripple and Mr. Larsen, happened at the same time as XRP price changes. Dr. [redacted], however, fails to put forth an analysis that actually shows that Ripple's and Mr. Larsen's trades *caused* those price changes. Of course, showing coinciding of events does not show causation. His one regression (which is flawed, as I will show in Section II.C.) itself shows a simple — but irrelevant — correlation, i.e., "sellers, on behalf of Ripple, sold more XRP when XRP was increasing and relatively less when the price was decreasing on the previous day."[27]

14. Furthermore, the relevance of Ripple's temporary trading patterns to assessing whether XRP has the economic substance of an investment contract is neither obvious nor ever explained. For instance, Dr. [redacted] concludes Section IV of his report, which is focused on Ripple's temporary trading patterns on a handful of days, with the statement that it "seems" to Dr. [redacted] that GSR, on behalf of Ripple, was "partially successful" in positively influencing XRP prices in the "short term."[28] The possible relevance of what "seems" to be "short term" price effects to the economic substance of XRP over the August 2013 to December 2020 time

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[26] [redacted] Report, at ¶ 1 ("First, the SEC asked me to opine on whether Ripple Labs Inc. ('Ripple'), Chris Larsen ('Larsen'), and Brad Garlinghouse ('Garlinghouse') took steps to influence XRP prices. Second, I have also been retained to opine on the incentives that might have been present for Ripple to attempt to influence the price of XRP.").

[27] [redacted] Report, at ¶ 34 ("A regression analysis of GSR's and [redacted] trading activity shows that when the prior day returns of XRP increase, the amount of XRP that GSR and [redacted] sell also increases (Table 1) . . . . By selling more XRP the day after XRP prices rise, GSR and [redacted] on behalf of Ripple, were able to use rising XRP returns and increased demand to mitigate any potential negative effect of its XRP sales and thus keep XRP prices high.").

[28] [redacted] Report, at ¶ 25 ("GSR also seems to have been at least partially successful in its targeted efforts in these directed cases as the price of XRP generally increased or stabilized in the short term at the prices GSR set.").

period is bereft of explanation. As I demonstrated in my initial report, the long-term price of XRP for the period August 2013 to December 2020 is not related to Ripple's efforts but rather to price movements of non-XRP cryptocurrencies. Accordingly, Dr. [redacted] report provides no support for a conclusion that purchasers of XRP had a reasonable expectation of obtaining profits from the efforts of Ripple.

15. Dr. [redacted] analysis further lacks scientific rigor insofar as he fails to quantify these alleged price effects, or measure their duration. He also fails to consider other factors outside GSR (or Ripple's) control that could affect prices on the limited number of days he discusses. As I will show, the charts he presents are themselves highly incomplete. For instance, he only considers GSR XRP trading on behalf of Ripple on the XRP Ledger, and ignores the significant known amount of off-ledger trading at cryptocurrency exchanges.[29] Without consideration of whether there was a meaningful, sustained impact on the price of XRP beyond the select time periods he considers, Dr. [redacted] analysis is wholly unreliable. I will turn to the specific flaws in each of Dr. [redacted] examples in more detail below.

16. *Example 1*: Dr. [redacted] Figure 1 shows XRP transactions conducted by GSR in a 30-hour window on September 15 and 16, 2016.[30] He claims that GSR did not trade in the six-hour period prior to 1pm UTC on September 15, 2016, but thereafter began net buying at 1pm UTC at a time that he alleges "directly corresponds to the time that GSR was directed to trade by Ripple."[31] There is, however, nothing unique about this pattern in GSR's trading on behalf of

[29] Ferrell Report, Exhibit 14 shows the number of exchanges where XRP trades occurred between August 4, 2013 and December 20, 2020.

[30] [redacted] Report, at Figure 1, ("This figure plots XRP transactions conducted by GSR in the 30-hour window on September 15, and 16 around Ripple's announcements on September 15, 2016. Transactions are sourced from the XRP Ledger."). I use intra-day XRP trading volume at cryptocurrency exchanges from CryptoCompare as the market for XRP trades.

[31] [redacted] Report, at ¶ 18.

Ripple before and after 1pm UTC (which corresponds to 9am ET) on September 15, 2016, because the trading by other market participants at cryptocurrency exchanges follows a similar pattern. Exhibit 1 shows the trading volume of GSR and the volume of XRP trading at all cryptocurrency exchanges (as reported by CryptoCompare) in the six hours before and after 1pm UTC on September 15, 2016, and the trading volumes over the 30-hour window on September 15 and 16, 2016, which Dr. [redacted] discusses. As I show in Exhibit 1, less than 1 percent of the overall market trading during the 30-hour window took place in the six hours before 1pm UTC and approximately 55 percent of market trading took place in the six hours after 1pm UTC.

17. Dr. [redacted] points to a 53-percent increase in XRP's price during six hours on September 15 and 16, 2016 to support his claim that GSR allegedly followed Ripple's directive to purchase XRP "at specific times with a stated intent of influencing the price of XRP."[32] Dr. [redacted] overreaches. Even if Dr. [redacted] analysis shows that GSR's purchases *coincided* with a price increase, he does not perform any empirical assessment showing that GSR's purchases contributed to this price increase. Dr. [redacted] therefore, has no basis to claim that the 53-percent increase in XRP's price during this period was even related to GSR's purchases.

18. Even if one were to assume GSR's net purchases did affect XRP prices, Dr. [redacted] utilizes no methodology to determine the magnitude of the price impact of GSR's trading. Nor did he consider whether trading by other market participants — such as the amounts of purchases and sales by participants other than Ripple (GSR), or exogenous market factors such as price changes in other cryptocurrency prices — could have also contributed to the price increase at this time. I used a square-root price impact model to approximate the potential price

[32] [redacted] Report, at ¶ 15. *See also* [redacted] Report, at ¶ 18 ("This is a 53 percent price increase in five hours. By analyzing transactions publicly available on the XRP Ledger, I can confirm that GSR did in fact follow Ripple's directive to purchase XRP and that the activity appears successful as the price increased dramatically.").

changes that could reasonably be expected given GSR's trading volume.[33] Incorporating intra-day XRP price volatility and overall trading volume of XRP at cryptocurrency exchanges between 1:00 UTC and 18:00 UTC on September 15, 2016, the potential XRP price impact from GSR trading, estimated using the square-root model, is approximately 1.6 percent compared to the 41 percent XRP price return over this period.

19. Furthermore, Dr. [redacted] fails to show that this alleged price increase would last beyond the particular five-hour period between September 15 and 16, 2016. As a matter of economic theory, there is no point in Ripple attempting to impact the XRP price on a limited number of days if the goal is to achieve longer-term price appreciation for its holdings of XRP or the holdings of XRP purchasers in the marketplace. Once again, this highlights the importance of analyzing whether Ripple had the ability to affect XRP prices over the multi-year time period at issue and not just on a select date as Dr. [redacted] claims.

20. *Example 2*: Figure 2 in Dr. [redacted]s report shows XRP transactions conducted by GSR on November 1, 2016. He claims that GSR's purchases during a one-hour period around an XRP price of $0.008 are "consistent with implementation of a price floor just as directed by Ripple."[34]

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[33] Academic literature, including Bouchaud et al. (2018) and Donier and Bonart (2015), uses a square-root impact model to quantify the price impact of a particular sized trade. According to this framework, total trading volume and price volatility are important when assessing the price impact of a trade. Dr. [redacted] fails to consider these additional factors in his analysis. *See, e.g.,* Bouchaud, J., J. Bonart, J. Donier, and M. Gould, Trades, Quotes and Prices: Financial Markets Under the Microscope, Cambridge University Press, 2018, at 235-237. For a discussion of the square-root impact model more generally *see* Bouchaud, J., J. Bonart, J. Donier, and M. Gould, Trades, Quotes and Prices: Financial Markets Under the Microscope, Cambridge University Press, 2018. *See also* Donier, J., and J. Bonart, "A Million Metaorder Analysis Impact on the Bitcoin," *Market Microstructure and Liquidity* 1(2), 2015 for the application of this framework to Bitcoin.

[34] [redacted] Report, at ¶ 20 ("On November 1, 2016, Patrick Griffin instructed GSR to 'aim to protect a $0.008 floor.' . . . Second, the trading seems to have succeeded in protecting XRP from dipping below $0.008 USD as the price did not go below this level.").

21. Dr. [redacted] is incorrect in claiming that GSR's trading "seems to have succeeded in protecting XRP from dipping below $0.008 as the price did not go below this level," but "reverted higher in the subsequent hour."[35] Dr. [redacted] ignores that, even though the alleged price floor of $0.008 was supposedly established in October 2016, XRP prices were more often *below* that price floor in November and December 2016, than they were *before* the alleged price floor was established. As I show in Exhibit 2, XRP prices were below $0.008 on approximately 42 percent of the days in October, 60 percent of the days in November, and 100 percent of the days in December 2016.

22. Moreover, Dr. [redacted] once again fails to quantify how much lower XRP's price would have been but for GSR's purchases, but speculates that an XRP price of $0.008 would "permit [them] to maximize revenue from its own XRP sales, all else being equal."[36] Dr. [redacted] argument is flawed. First, even if GSR's purchases prevented XRP prices from dipping below $0.008 during this one hour intra-day, as Dr. [redacted] alleges, it was at best short-lived and could not have affected XRP prices during the multi-year period when Ripple distributed XRP. Further, as my factor model demonstrates, the long-run XRP price return can be explained by exogenous cryptocurrency market factors that are outside Ripple's control.[37]

23. *Example 3*: Dr. [redacted] Figure 3 shows XRP transactions conducted by GSR on September 25 and 26, 2016. He alleges that "GSR made several large purchases of XRP that both preceded and accompanied a dramatic rise in the price of XRP of over 15 percent within 24 hours."[38] Dr. [redacted] graph shows GSR purchases coincided with price increases, but he did not

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[35] [redacted] Report, at ¶ 20.

[36] [redacted] Report, at ¶ 19.

[37] Ferrell Report, at ¶¶ 91-99.

[38] [redacted] Report, at ¶ 23.

show, or attempt to show, that GSR's purchases caused this increase. Furthermore, my analysis of XRP price returns on the two days before and after the time period that Dr. [redacted] considers, September 25 to 26, 2016, shows that XRP price return is higher in the days before, and after, the alleged actions by Ripple in coordination with GSR. As I show in Exhibit 3, the XRP price return is 7.6 percent before September 25 and 13.6 percent after September 26, and 8.2 percent from September 25 to 26, 2016. Therefore, even if GSR's purchases coincided with increases in XRP prices, as Dr. [redacted] claims, there are even greater XRP returns after this period that he fails to analyze.

24. Dr. [redacted] claim that GSR "executed uneconomic trades whose purpose appears to be to push the price of XRP upward"[39] on these dates is not based on any economic analysis. He states that "GSR purchased XRP at a 1.5 percent premium compared to the last trade price"[40] but never compares GSR's purchases to an *actual* trade price. Rather, he attempts to show prices of GSR's trades relative to a "volume-weighted average price at 1-minute intervals across all trades on the XRP Ledger involving the XRP-USD trading pair."[41] Here, Dr. [redacted] ignores the possibility that the individual trades that comprise his "volume-weighted average" prices could have been higher or lower than GSR's prices.[42] In other words, his benchmark for GSR's trades, the volume-weighted average price, in fact aggregates a number of trades by averaging various trades rather than comparing GSR's prices to actual trades.

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[39] [redacted] Report, at ¶ 21. *See also id.*, at ¶ 23 ("These uneconomic trades, i.e., buying XRP above market prices, coincide with XRP's increase in value on September 25 and the early morning of September 26.").

[40] [redacted] Report, at ¶ 23.

[41] [redacted] Report, at ¶ 21 and Figure 3.Panel B.

[42] Dr. [redacted] fails to provide information on the XRP Ledger prices and volumes he used to create the volume-weighted average prices used in Figure 3 of the [redacted] Report.

25. *Example 4*: Dr. [redacted] Figure 4 shows XRP transactions conducted by GSR on April 10 and 11, 2016. He alleges that GSR's net purchases on April 11, following a decrease in XRP prices on April 10, provide examples "consistent with an attempt to increase or stabilize the price of XRP."[43] Dr. [redacted] claims that "GSR reversed its programmatic sales *after* the *price of XRP continues to decline.*"[44] But, in contrast to Dr. [redacted] claim, a more detailed analysis of intra-day prices shows that XRP prices increased approximately two hours *before* GSR became a net buyer, as the hourly XRP returns in Exhibit 4 show. The cumulative return for the five hours before and after the reversal is 6.2 percent when GSR was a net seller and a decline of 3.2 percent when GSR was a net buyer.

26. Even if the price of XRP increased for a few hours intra-day on April 11, the alleged increase in XRP price was short-lived. The daily return on April 11 was 1.9 percent followed by negative returns on April 12 and April 13, 2016.[45] Therefore, XRP return was lower and not higher, in contrast to Dr. [redacted] claim that "GSR executed trades with the stated motive of preventing the price of XRP from going down."[46]

27. *Example 5*: Dr. [redacted] Figure 5 shows XRP versus Bitcoin transactions that Mr. Larsen conducted through GSR from June 3 to 14, 2017 at the cryptocurrency exchange Poloniex. Dr. [redacted] picked twelve days in June 2017, a single cryptocurrency exchange (Poloniex), and a single trading pair (XRP/BTC). This is a highly selective example, from which

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[43] [redacted] Report, at ¶ 25 ("The instances examined above provide specific examples of how Ripple and certain of its executives directed GSR to trade XRP on behalf of Ripple in a way consistent with an attempt to increase or stabilize the price of XRP.").

[44] [redacted] Report, at ¶ 24 ("As seen in Figure 4, at the direction of Ripple, GSR reversed its programmatic sales *after* the price of XRP *continues to decline*. Instead of net selling, XRP began net buying around 9:00am UTC.") [emphasis added].

[45] The daily XRP return was negative 2.7 percent on April 12 and negative 3.2 percent on April 13, 2016 using XRP prices from CoinMarketCap.

[46] [redacted] Report, at ¶ 25.

no conclusions can be drawn regarding Mr. Larsen's trading over time or as a whole as a scientific or logical matter. Dr. [redacted] nonetheless alleges that Mr. Larsen's purchases of XRP "are consistent with selection of an opportune time to purchase XRP to provide support similar to implementing a price floor to keep the price of XRP from further declining."[47] Dr. [redacted] opinions are flawed for several reasons.

28. First, even considering only the cherry-picked time, exchange, and trading pair that Dr. [redacted] considered, there is no relation between GSR's transactions on behalf of Mr. Larsen and the daily XRP/BTC price return at Poloniex during this time period. As I show in Exhibit 5, there is no directional relation between the daily XRP price returns and Mr. Larsen's buying and selling activity. For example, daily XRP/BTC price returns decreased by approximately 15 percent on June 2, 2017, a day when GSR sold XRP on behalf of Mr. Larsen, but XRP/BTC price returns also decreased by approximately 11 percent on June 10, 2017, a day when GSR purchased XRP on behalf of Mr. Larsen.

29. Further, on 90 percent of the days between April 15, 2017 and March 18, 2018, when GSR executed trades on behalf of Mr. Larsen, Mr. Larsen's trading volume, measured as total purchases and sales of XRP/BTC, was less than 0.5 percent of total trading volume on Poloniex and less than 0.1 percent of the XRP/BTC trading volume at cryptocurrency exchanges and reported by CryptoCompare.[48] Between June 2 and June 15, 2017, Mr. Larsen's volume was at most 1 percent and often less than 0.5 percent of total Poloniex XRP/BTC volume and at most 0.2 percent of overall cryptocurrency exchange volumes. There were many other market participants trading XRP/BTC during this time at Poloniex and at other cryptocurrency

[47] [redacted] Report, at ¶ 28.

[48] I calculate Mr. Larsen's trading volume as the total purchases and sales.

exchanges. Dr. [redacted] fails to take into account that trading by other market participants could also have contributed to the contemporaneous XRP/BTC prices. The approximate price impact, if any, of GSR's purchases and sales during this period was modest compared to the daily XRP/BTC return at Poloniex as I show in Exhibit 5.

30. Finally, Dr. [redacted] also claims that defendants' actions implemented, or were consistent with implementing, a "price floor."[49] Dr. [redacted] offers no evidence to support his contention that a price floor was in fact being created, or even that defendants' actions caused the alleged price floor. Dr. Griffin relies on the assumption that the actions of a single market participant were causing the purported changes in the price of XRP. That is a baseless assumption considering how little of the total XRP trading volume defendants accounted for.

31. Taken together, my analysis shows that Dr. [redacted] analysis is unreliable and does not support his claims that GSR trading caused XRP price changes. Moreover, Mr. Larsen's decisions to buy or sell his XRP holdings are distinct from those of Ripple and are irrelevant to assessing the economic substance of an investment contract.

B. DR. [redacted] ALLEGATIONS THAT RIPPLE, IN COORDINATION WITH GSR, TIMED XRP SALES TO "MINIMIZE THE NEGATIVE SELLING IMPACT ON THE PRICE OF XRP" ARE NOT UNIQUE TO INVESTMENT CONTRACTS

32. Dr. [redacted] claims that "from January 2015 to at least September 2019, GSR appears to carefully time when XRP would be sold so as to minimize the negative selling impact on the price of XRP" and also that "Ripple turned to its programmatic selling partners to implement its XRP selling strategy."[50]

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[49] [redacted] Report, at ¶ 9.a, ¶ 19 (Ripple). [redacted] Report, at ¶ 28 (Larsen).

[50] [redacted] Report, at ¶ 29 and ¶ 32.

33. Defendants' alleged strategy of minimizing the potential price impact of their sales is irrelevant for assessing whether XRP is an investment contract because there are examples of other large holders of an asset that distribute the asset in a controlled manner so as not to affect prices.

34. For example, the use of algorithms to execute institutional trades in foreign exchange ("FX") or futures markets is designed to minimize the potential impact of sales:

a. "FX algorithmic trading and automated pricing has surged in the last year as traders seek best execution and minimal market impact, according to the head of Bloomberg's FX electronic trading platform."[51]

b. "In institutional FX markets, implementation shortfall algorithms will try to avoid slippage and limit a large orders market impact by creating numerous child orders from the main or parent order. It will then spread those smaller orders across various execution venues and sources of liquidity. Such execution strategies also take account of the cost and or benefits of crossing the bid-offer spread."[52]

c. "Our suite of intelligent algorithms is designed to access liquidity, mitigate market impact and optimize your performance, by reacting rapidly to market dynamics. Our algorithms can also be customized in line with your execution goals. This guide is designed to help you identify the right algorithm for your specific requirements. It covers our global suite and provides an overview of each FX algorithm as well as when and how to use it."[53]

d. Futures trading uses "Execution Algos facilitate the next step in the process, where the trader has already decided what to trade and in what direction, but not necessarily when to trade it. These execution algorithms choose the timing of the predetermined trades. This benefits traders by minimizing trade slippage and market impact."[54]

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[51] Smith, A., "FX Algos and Auto-Pricing on the Rise as Traders Look to Minimize Market Impact, Says Bloomberg FXGO Head," *The Trade News*, June 18, 2021, https://www.thetradenews.com/fx-algos-and-auto-pricing-on-the-rise-as-traders-look-to-minimise-market-impact-says-bloomberg-fxgo-head/.

[52] Sinden, D., "Citi Launches a New Suite of Futures Trading Algos," *Finance Feeds*, January 22, 2021, https://financefeeds.com/citi-launches-new-suite-futures-trading-algos/.

[53] "A Guide to UBS Algorithms, UBS Electronic Execution - FX," *UBS*, August 2019, at 3.

[54] Signorelli, J., "Futures Traders Use Execution Algorithms for Alpha and Timing," *Futures Magazine*, January 6, 2020, http://www.futuresmag.com/2020/01/06/futures-traders-use-execution-algorithms-alpha-and-timing.

e. "Execution algorithms [in futures] are not designed to generate trading decisions—the 'what,' 'why' and 'when'—but rather the 'how' so as to minimize execution risk that could negate any trading alpha identified with the trade idea."[55]

35. The use of block trades is another example where market participants use a particular strategy to minimize the price impact of their trading. As Harris (2003) explains, "[l]arge traders often have a significant impact on prices."[56] Exchanges such as CME or ICE have specific rules for the execution of large trades.[57]

36. There is, therefore, nothing unique about defendants' decision to execute their trades through GSR so as to minimize price impact. Indeed, it would be surprising if a large holder of an asset wishing to sell did not care about minimizing the price impact associated with those sales. Thus, Dr. [redacted] characterization of defendants' strategy of trading in a manner designed to minimize the price impact on XRP leads nowhere as such behavior by market participants is not unique to securities. Indeed, these trading practices often fall under the rubric of "best execution," which includes an attempt to minimize the negative price impact associated with a particularly sized trade.[58]

37. In Figure 6, Dr. [redacted] analyzes 18 days during which GSR and [redacted] had respective

[55] Wood, G. "Transaction Cost Analysis for Futures," *CME Group*, June 2011, at 35, https://www.cmegroup.com/education/files/TCA-4.pdf.

[56] Harris, L., Trading & Exchanges: Market Microstructure for Practitioners, Oxford University Press, 2003, at 322.

[57] *See, e.g.*, "Market Regulation Advisory Notice," *CME*, https://www.cmegroup.com/rulebook/files/cme-group-Rule-526.pdf.

[58] *See, e.g.*, Harris, L., Trading & Exchanges: Market Microstructure for Practitioners, Oxford University Press, 2003. *See also*, Sinden, D., "Citi Launches a New Suite of Futures Trading Algos," *Finance Feeds*, January 22, 2021, https://financefeeds.com/citi-launches-new-suite-futures-trading-algos/. Signorelli, J., "Futures Traders Use Execution Algorithms for Alpha and Timing," *Futures Magazine*, January 6, 2020, http://www.futuresmag.com/2020/01/06/futures-traders-use-execution-algorithms-alpha-and-timing. Wood, G. "Transaction Cost Analysis for Futures," *CME Group*, June 2011, at 35, https://www.cmegroup.com/education/files/TCA-4.pdf.

tenures as programmatic sellers, and claims that they allegedly coordinated with Ripple to execute "XRP sales in a manner consistent with stopping or reducing sales to mitigate impact when XRP prices are declining."[59] Dr. [redacted] analysis is fundamentally flawed for at least three reasons.

38. First, Dr. [redacted] ignores any confounding factors, such as the relation between XRP price returns and returns of cryptocurrencies more generally. As I show in Exhibit 6.A., daily Bitcoin and XRP price returns are correlated over this period (the correlation is 87 percent). Indeed, this is consistent with the factor model I presented in my opening report, which also demonstrates that the long-run XRP price return can be explained by exogenous cryptocurrency market factors that are outside Ripple's control.[60]

39. Second, Dr. [redacted] draws his conclusions based on 18 days but fails to show that the time period he has chosen is in fact representative of the entire period when GSR and [redacted] were active as programmatic sellers. I analyze overall trading from November 2014 to January 2017 and from June 2017 to at least September 2019, the period when Ripple enlisted GSR, and the period when Ripple enlisted [redacted] namely September 2017 to at least September 2019.[61] Notably, this longer time period contains a number of other days with a more than 10-percent decline in XRP price return during each of the respective periods which Dr. [redacted] did not analyze.

40. Third, as I show in Exhibit 6.B, during the period when GSR and [redacted] were enlisted by Ripple there is effectively no difference in the percentage of GSR's average net sales to trading volume on days when the XRP return exceeded a 10-percent decline compared to

[59] [redacted] Report, ¶ 32.

[60] Ferrell Report, at ¶¶ 91-100.

[61] [redacted] Report, at ¶ 32 and Figure 6. I used the data Dr. [redacted] provided in his backup for my analysis.

other days. Therefore, even if GSR halted sales for a short period intra-day, as Dr. [redacted] alleges, the programmatic sales of XRP as a percentage of volume, on average, remain unchanged regardless of XRP prices.

C. DR. [redacted] CLAIMS THAT RIPPLE, IN COORDINATION WITH GSR, INCREASED XRP SALES FOLLOWING PRICE INCREASES ARE FUNDAMENTALLY FLAWED

41. Dr. [redacted] uses a regression analysis to allegedly show that there is a relation between prior XRP returns and GSR and [redacted] purchases and sales: "Ripple's market makers GSR and [redacted] tend to sell less when prices fall and sell more when prices are stabilized or rising" across a "wider time period."[62] Again, even if true, such a claim does not indicate that XRP has the economic substance of an investment contract.

42. In any event, Dr. [redacted] analysis is conceptually flawed. Dr. [redacted] does not establish that GSR sold less on days when prices were falling. In fact, his regression shows a relation between higher sales by GSR *following* a day where prices increase. In general, the price could have increased or decreased the day after prices increased, and Dr. [redacted] does not establish that XRP prices did not decrease the day after an XRP price increase and before GSR and [redacted] could have executed their trades. Moreover, nothing in Dr. [redacted] regression analysis establishes that GSR sales decrease on days when prices increase.[63] Put

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[62] [redacted] Report, at ¶ 33 ("To better understand whether the behavior observed in the example shown in Figure 6 is persistent across a wider time period, I next examine whether Ripple's market makers GSR and [redacted] tend to sell less when prices fall and sell more when prices are stabilized or rising. … Imbalance is defined as the total number of XRP purchased minus total number of XRP sold in a day normalized by the average circulating supply."). *See also id.*, at ¶ 29 (GSR and [redacted] "sold more XRP following price increases."), at ¶ 34 ("I conclude that [GSR and [redacted] on behalf of Ripple, sold more XRP when the price of XRP was increasing and relatively less when the price was decreasing on the previous day."), and at ¶ 35 ("The findings from this regression analysis are also consistent with communications between Ripple and GSR where Ripple expressed a desire to sell XRP when the price of XRP increased.").

[63] [redacted] Report, at ¶ 34 ("By selling more XRP the day after XRP prices rise, GSR and [redacted], on behalf of Ripple, were able to *use rising XRP returns* and increased demand to mitigate any potential negative effect of its XRP sales and thus keep XRP prices high.") [emphasis added].

differently, he does not show that there is any relation between GSR imbalances on a particular day and XRP prices on the same day.

43. To analyze the relation between GSR imbalances on a particular day and XRP prices on the same day, I added contemporaneous return as a control variable to Dr. [redacted] regression specification and it shows that there is no statistically significant relation between current XRP price returns and imbalances. As I show in column A.2. of Exhibit 7, the coefficient on the contemporaneous return in not statistically significant.

44. Further, Dr. [redacted] claims that his regression indicates that "Ripple systematically directed sales of XRP in a manner that was consistent with seeking to minimize the negative impact of sales on XRP prices."[64] But Dr. [redacted] does not establish that there is a relation between imbalances and XRP price returns and, even if there were such a relation, he fails to show that it would have any long-term impact on XRP return. To analyze the relation between imbalances and XRP price return, I implement a regression model where XRP price return is the dependent variable, using contemporaneous imbalance, lagged imbalance, and lagged returns as independent variables:

$$XRP_{return_t} = a + \theta * Imbalance_t + \sum_{i-1}^{5} \beta_i * XRP_{return_{t-i}} + \sum_{i-1}^{5} \lambda_i * Imbalance_{t-i} + \varepsilon_t$$

where a is a constant term, and Imbalance is the number of XRP units purchased minus the number of XRP units sold per day by GSR and [redacted] on behalf of Ripple normalized by dividing by the daily circulating supply and ε denotes the error term.[65] In my return

[64] [redacted] Report, at ¶ 35.

[65] Note that I use Dr. [redacted] assumptions on number of lags and normalization in my model but do not endorse these assumptions he made. For example, Dr. [redacted] imbalance regression specifications are not robust to alternative specifications he could have chosen. Dr. [redacted] uses *circulating supply* to normalize imbalance whereas Chordia and Subrahmanyam (2004), which Dr. [redacted] cites, use *trading volume* to normalize imbalance. When I implement Dr. [redacted] imbalance regression model using *trading volume* to normalize imbalance, the coefficients on prior return are not statistically significant at the 5% level of significance. *See*

regression, I use the same number of lags on imbalance and return controls and the same normalization as in Dr. [redacted] regression.[66]

45. I implemented my return regressions for the period from January 2015 to September 12, 2019. Exhibit 7, column A.3. (without the contemporaneous imbalance) and in column A.4. (with the contemporaneous imbalance).[67] Using this regression specification, I find that *none* of the coefficients on current imbalances, prior imbalances, or prior returns are statistically significant at the 5-percent level. Dr. [redacted] therefore, has no basis for his claim that "Ripple systematically directed sales of XRP in a manner that was consistent with seeking to minimize the negative impact of sales on XRP prices."[68] In order for this claim to be true, the regression coefficient on the imbalances must be statistically significant, and my return regression specification demonstrates that this is not the case. Dr. [redacted] also has no basis for his claim that "these sellers, on behalf of Ripple, sold more XRP when the price of XRP was increasing and relatively less when the price was decreasing on the previous day," and thus "were able to use rising XRP returns and increased demand to mitigate any potential negative effect of its XRP sales and thus keep XRP prices high."[69] In order for this claim to be true, the

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[redacted] Report, at Table 1 ("Imbalance is defined as the number of XRP purchased minus number of XRP sold per day by GSR and [redacted] on behalf of Ripple, normalized by dividing by the average daily circulating supply of XRP over the previous 30 calendar days.") and Chordia, T., and A. Subrahmanyam, "Order imbalance and individual stock returns: Theory and evidence," *Journal of Financial Economics* 72, 2004, at 494 ("Order imbalance is scaled by the total number of trades or by the total dollar trading volume so as to eliminate the impact of total trading activity.").

[66] [redacted] Report, at ¶ 34 ("Lagged 5-day returns and imbalances are added as controls.").

[67] The time period from January 1, 2015 and September 12, 2019 corresponds to Dr. [redacted] analysis in [redacted] Report, Table 1.

[68] [redacted] Report, at ¶ 35.

[69] [redacted] Report, at ¶ 34 ("I conclude that these sellers, on behalf of Ripple, sold more XRP when the price of XRP was increasing and relatively less when the price was decreasing on the previous day. By selling more XRP the day after XRP prices rise, GSR and [redacted] on behalf of Ripple, were able to use rising XRP returns and increased demand to mitigate any potential negative effect of its XRP sales and thus keep XRP prices high.").

regression coefficient on the prior returns must be statistically significant, and my return regression specification demonstrates that this is not the case

46. Dr. [redacted] regression does not support his claim that GSR and [redacted] on behalf of Ripple, were able to use rising XRP returns and increased demand to mitigate any potential negative effect of its XRP sales and thus keep XRP prices high.[70] There is, accordingly, no economic rationale for Ripple to use temporary imbalances to earn a profit from XRP sales over the long term. The factor model I implemented before also shows that the long-term XRP return is not related to any of Ripple's XRP distributions when controlling for other cryptocurrencies' returns.

III. MR. LARSEN'S AND MR. GARLINGHOUSE'S SALES OF THEIR PERSONAL HOLDINGS OF XRP ARE INDEPENDENT OF RIPPLE AND ARE IRRELEVANT FOR ASSESSING WHETHER XRP IS AN INVESTMENT CONTRACT

47. Dr. [redacted] performed a tracing of funds on the blockchain that he alleges shows that Mr. Larsen and Mr. Garlinghouse "could have sent up to" respectively 1.93 billion XRP and 277 million XRP directly or indirectly to GSR over multiple "hops."[71] Sales of Mr. Larsen and Mr. Garlinghouse's personal holdings of XRP are independent from Ripple and Dr. [redacted] provides no basis for why his analysis of Mr. Larsen's and Mr. Garlinghouse's sales are relevant to the question of whether the economic substance of XRP constitutes an investment contract.

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[70] [redacted] Report, at ¶ 34.

[71] [redacted] Report, at ¶ 38 ("As shown in Table 2, Larsen sent at least 1.50 billion XRP to GSR via one hop, but he could have sent up to 1.90 billion XRP to GSR over up to four hops, or 1.93 billion if tracing up to seven hops. It is worth noting that Larsen could have sold or gifted XRP to entities or individuals who subsequently transferred the XRP to GSR; this could be a reason why XRP reached GSR from Larsen's identified wallets over a series of up to seven hops."). *See also* [redacted] Report, at ¶ 39 ("Garlinghouse directly transferred 167 million XRP ($104 million) to GSR out of a total of 377 million XRP ($186 million) transferred out of his identified addresses. This can be seen in Figure 8 which shows the cumulative amount of XRP transferred out of Garlinghouse's identified addresses over time, including direct transfers to GSR. Other destinations receiving direct transfers of XRP from Garlinghouse identified addresses include digital asset platforms, Ripple, or unidentified addresses.") and [redacted] Report Table 2, and Table 3.

48. Dr. [redacted] purports to show cumulative transfers out of wallets owned by Mr. Garlinghouse or Mr. Larsen and claims that they made significant use of GSR's liquidity extraction services. Dr. [redacted] fails to explain the economic relevance of whether Mr. Larsen and Mr. Garlinghouse used GSR to sell XRP to assessing whether the "economic reality" of XRP constitutes an investment contract. Even assuming that Dr. [redacted] analysis of cumulative funds is accurate, his analysis is conceptually flawed for the following reasons:

49. Dr. [redacted] claims that the "contract provisions suggest that Larsen and Garlinghouse employed the services of GSR to minimize the negative impact their XRP sales could have on XRP prices."[72] As I alluded to above, selling an asset to minimize the negative impact is part of the best execution strategy of many sellers and is not unique to sales of securities or (even if true) to sales by Mr. Garlinghouse and Mr. Larsen.

50. Also, Dr. [redacted] claim that these sales were intended to minimize a potential negative impact on XRP prices presumes that Mr. Larsen and Mr. Garlinghouse have some economic control over the cumulative XRP transfers in Dr. [redacted] analysis.[73] But, as I explain below, Mr. Larsen and Mr. Garlinghouse placed no restriction on the amount of XRP or the timing of the intermediary transfers. In fact, Dr. [redacted] recognizes that the control of the original holder decreases after the original transfer.[74]

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[72] [redacted] Report, at ¶ 36.

[73] [redacted] Report, at ¶ 38 ("If one traces these out as far as seven hops, the total amount that Larsen transferred to GSR could be as high as 1.9 billion XRP ($599 million)."). Dr. [redacted] discusses tracing of Mr. Larsen's trades up to 7 hops, but his backup includes up to 13 hops. He claims that he excludes "traces beyond 13 hops because they are too small to show up in the charts and tables." *See* Dr. [redacted] backup, (SEC-LIT-EPROD-001851401).

[74] [redacted] Report, at ¶ 38 ("When analyzing blockchain transactions over multiple hops, the certainty that the initial owner of funds still controls them decreases as the number of hops increases.").

51. Exhibit 8 shows an example of an "indirect" XRP transfer from Mr. Larsen's wallet that reached GSR after three hops.[75] The example shows an initial transfer of 20 million XRP from Mr. Larsen to another participant on May 22, 2017. On October 23, 2017 — more five months later — this participant transferred 2,083,333 XRP to yet another anonymous market participant, who then transferred a slightly smaller amount, 2,083,313, to GSR, almost a year later, on March 26, 2018. This "final-hop" reaches GSR after 307 days or almost one year after the original transfers by Mr. Larsen. In contrast, a direct transfer from Mr. Larsen to GSR typically reaches GSR within minutes on the day.

52. Exhibit 8 also shows an example of an "indirect" XRP transfer from Mr. Garlinghouse wallet that reaches GSR after two hops. This example shows an initial transfer of 31.2 million XRP from Mr. Garlinghouse to another, anonymous participant on June 10, 2010. On August 7, 2020, this participant transferred approximately 10 million XRP to GSR. This transfer reaches GSR after approximately 60 days.

53. Dr. [redacted] fails to demonstrate that either Mr. Larsen or Mr. Garlinghouse controlled or benefitted from the sales or transfers of XRP once it left their possession. As Dr. [redacted] acknowledges "the certainty that the initial owner of funds still controls them decreases as the number of hops increases."[76] Moreover, XRP is a fungible virtual currency. Dr. [redacted] did not perform any analysis to show that subsequent transfers of XRP were related to the XRP owned by Mr. Larsen or Mr. Garlinghouse, or that the process of intermediary transfers was controlled by them. For example, other parties could have continued to receive XRP from other sellers, which they could have sent to yet another party or to GSR. Taken together, this means

[75] Dr. [redacted] did not provide any backup on his tracing algorithm, which he claims to be proprietary. I am not providing any opinion on the accuracy of his tracing methodology.

[76] [redacted] Report, at ¶ 38 ("When analyzing blockchain transactions over multiple hops, the certainty that the initial owner of funds still controls them decreases as the number of hops increases.").

that Dr. [redacted] has no basis to conclude that Mr. Larsen and Mr. Garlinghouse could have affected XRP prices through these transfers. Dr. [redacted] tracing analysis is, therefore, irrelevant and speculative. Dr. [redacted] claims about indirect transfers fails to support his claims and lacks quantification of the alleged price impact.

IV. THE USE OF LOCK-UP RESTRICTION IS NOT UNIQUE TO SECURITIES AND CANNOT BE USED TO DISTINGUISH BETWEEN INVESTMENT CONTRACTS AND OTHER TYPES OF ASSETS

54. Dr. [redacted] claims that lock-up restrictions on certain over-the-counter sales of XRP "functioned similarly to lock-up restrictions in a traditional company's Initial Public Offering,"[77] but he fails to explain why the use of a lock-up restriction is relevant for assessing whether the economic substance of XRP constitutes an investment contract.

55. Dr. [redacted] single citation to Field and Hanka (2001) explains that lock-up agreements with pre-Initial Public Offering ("IPO") shareholders serve specific purposes that he fails to discuss: "[t]hey reassure the market that key employees will continue to exert themselves for at least a few months; they provide a credible signal that insiders are not attempting to cash out in advance of imminent bad news; and they may aid the underwriters' price support efforts by temporarily constraining the supply of shares."[78] Therefore, even if IPOs have lock-up provisions, as Dr. [redacted] points out, his analogy is irrelevant here.

56. Ripple did not undertake an IPO. Ripple's use of lock-up periods in its sales to institutional purchasers was not equivalent to sales to "insiders and other pre-IPO

[77] [redacted] Report, at ¶ 9.c. and at ¶¶ 41-43.

[78] Field, L., and G. Hanka, "The Expiration of IPO Share Lockups," *The Journal of Finance* 56 (2), April 2001, 471-500, at 471.

shareholders."[79] Investors in IPOs "wish to maximize share price performance" and "IPOs are ideal opportunities for investors to obtain a sizeable stake in companies."[80] By virtue of owning shares in a company, investors in an IPO are entitled to a share of a company's profits. In contrast, institutional XRP purchasers that agreed to lock-up provisions were not shareholders of Ripple. Moreover, as I discussed before and discuss below, none of Ripple's contracts with institutional XRP purchasers entitled those purchasers to a share of Ripple's profits should Ripple be successful in its ongoing efforts to manage and develop its business operations, nor do the contracts impose any obligation on Ripple to expend ongoing efforts on behalf of those purchasers to increase the price of XRP.[81] This is also true for the institutional purchasers analyzed by Dr. [redacted] Dr. [redacted] cites agreements with various wholesale purchasers and market makers, such as [redacted].[82] As I show below, none of these contracts obligate Ripple to generate any returns for these holders of XRP; they do not entitle them to receive future cash flows from Ripple or any other source, and they confer not right to share in Ripple's profits.

57. [redacted] and [redacted]'s contracts with XRP II, LLC ("XRP II") are purchase and sale agreements for a product and would fall into the "Contracts with Wholesale Purchasers" category of contracts I analyzed in my opening report.[83] [redacted]'s and [redacted] Master Purchase Agreements with XRP II describe the relationship between the parties as an arms-length transaction: "[n]othing in this Agreement will be construed as creating an employer-

[79] Field, L., and G. Hanka, "The Expiration of IPO Share Lockups," *The Journal of Finance* 56 (2), April 2001, 471-500, at 471.

[80] Geddes, R., IPOs and Equity Offerings, Butterworth-Heinemann – The Securities Institute, 2003, at 3.

[81] Ferrell Report, at ¶ 34 and ¶ 41.

[82] [redacted] Report, at ¶¶ 42-43.

[83] Ferrell Report, at ¶¶ 35-41.

employee or agency relationship, a partnership or a joint venture between the parties."[84] [redacted]s agreement further describes the sale/purchase transaction: "[redacted] will purchase and XRP II will sell the Purchased XRP at the Purchase Order Price."[85] [redacted]s agreement similarly states that XRP II "will agree to transfer XRP, the digital asset native to the XRP Ledger, to the Purchaser [redacted] against the transfer of funds, typically U.S. dollars, by the Purchaser [redacted] to the Company."[86] Further, upon delivery of XRP to the purchaser, "market risk and benefit [rests] solely with the Purchaser [redacted]."[87] Similarly, "[i]mmediately upon the Company's delivery of the Purchased XRP to the Purchaser, all title to and risk of loss related to such XRP passes to the Customer [redacted]."[88] Neither one of these agreements entitle [redacted] nor [redacted] to a share of Ripple's profits.

58. The contract between [redacted] and Ripple is a marketing and incentive contract, similar to the ones I analyzed in my opening report under section "Marketing and Incentive Contracts."[89] Gatehub agreed to develop a mobile and web-based digital asset wallet that is compatible with the Interledger protocol ("ILP") to market and publicize the wallet's use of ILP to Gatehub's 1.3 million users, and to actively contribute to the open source codebase of ILP.[90]

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[84] [redacted] and XRP II, LLC, *Master Purchase Agreement*, November 29, 2014 (RPLI_SEC 0259585, at 590); [redacted] and XRP II, LLC, *Master XRP Purchase Agreement*, February 22, 2018 (RPLI_SEC 0233130, at 131).

[85] [redacted], and XRP II, LLC, *Master Purchase Agreement*, November 29, 2014 (RPLI_SEC 0259585, at 586).

[86] [redacted] and XRP II, LLC, *Master XRP Purchase Agreement*, February 22, 2018 (RPLI_SEC 0233130, at 130).

[87] [redacted] and XRP II, LLC, *Master Purchase Agreement*, November 29, 2014 (RPLI_SEC 0259585, at 587).

[88] [redacted] and XRP II, LLC, *Master XRP Purchase Agreement*, February 22, 2018 (RPLI_SEC 0233130, at 132).

[89] Ferrell Report, at ¶¶ 66-70.

[90] GateHub Limited and Ripple Labs, *XRP Incentive Agreement*, May 24, 2019 (RPLI_SEC 0298094, at 094-095).

Ripple, in turn, agreed to pay Gatehub $5,612,936 in XRP.[91] "Immediately upon the Ripple's delivery of the XRP Incentive to Gatehub, all title to and risk of loss related to such XRP passes to Gatehub."[92] Gatehub's marketing and incentive contract is a transactional service contract between two parties and does not entitle Gatehub to a share of Ripple's profits.

59. The contract between Ripple and [redacted] Dr. [redacted] cites is a programmatic market maker agreement, which is the same agreement I analyzed in my opening report[93] and found that "unlike the private equity ownership contracts, the contracts with market makers do not give these entities any contractual right to a share of Ripple's profits if Ripple is successful in its ongoing efforts to manage and develop its business operations or impose any obligation on Ripple to expend ongoing efforts to increase the price of XRP. Regardless of whether Ripple's efforts are ultimately successful, the market maker, such as [redacted] .. has a contractual right to the specified compensation if the market maker performs its obligations under the agreement."[94]

60. The contract with [redacted] does not "give [redacted] any contractual right to a share of Ripple's profits if Ripple is successful in its ongoing efforts to manage and develop its business operations or impose any obligation on Ripple to expend ongoing efforts to increase the price of XRP. In this sense, it is similar to an entity purchasing diamonds from De

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[91] [redacted] and Ripple Labs, *XRP Incentive Agreement*, May 24, 2019 (RPLI_SEC 0298094, at 094).

[92] [redacted] and Ripple Labs, *XRP Incentive Agreement*, May 24, 2019 (RPLI_SEC 0298094, at 095).

[93] [redacted] and Ripple Markets, *Market Maker and Programmatic Market Activity Agreement*, February 14, 2017 (RPLI_SEC 0899145); Ferrell Report, at ¶¶ 46-51.

[94] Ferrell Report, at ¶ 51.

Beers or barrels of oil from Exxon Corporation."[95] Nothing Dr. [redacted] says changes this opinion I expressed in my opening report.

61. Lock-up provisions are also not unique to investment contracts. For example, art dealers use contractual terms that prevent buyers from reselling art for a fixed period of time.[96] This provision does not mean that art is a security or has the economic substance of a security. Certain homeowner associations have various rental restrictions, including "a mandatory waiting period; i.e., someone must own a unit for one year before renting it out."[97] This provision does not mean that the homes are securities or have the economic substance of a security. Some employment contracts contain a non-compete clause, where an employee cannot work for a competitor in the same industry for a certain amount of time.[98] Such provisions do not mean that the employment contracts have the economic substance of a security.

62. Therefore, Ripple's use of lock-up provisions, even if the lock-up was to limit immediate supply in the market, is irrelevant to assess whether XRP is an investment contract because it cannot be used to distinguish between investment and non-investment contracts.

V. DR. [redacted] CLAIMS ABOUT XRP BEING USED IN A SIMILAR MANNER AS COMPANIES USE STOCK IS IRRELEVANT FOR ASSESSING WHETHER XRP HAS THE ECONOMIC SUBSTANCE OF AN INVESTMENT CONTRACT

63. I demonstrated before that the economic substance of the various contracts Ripple entered into for the distribution of XRP are not similar in their economic substance to contracts

[95] Ferrell Report, at ¶ 41.

[96] "Dealers Try to Repel Speculators by Making Buyers Agree Not to Flip Their Art. But Can Those Contracts Actually Be Enforced?" *ArtNet News*, November 18, 2020, https://news.artnet.com/art-world/galleries-legal-resale-clauses-1924336.

[97] "Can an HOA Restrict Rentals? (Spoiler Alert: Yes)" *Million Acres*, December 16, 2019, https://www.millionacres.com/real-estate-investing/rental-properties/can-hoa-restrict-rentals-spoiler-alert-yes/.

[98] *See, e.g.*, "How Noncompete Clauses Keep Workers Locked In," *The New York Times*, May 13, 2017.

entered into by Ripple that created various equity and debt obligations. None of Ripple's contracts for the distribution of XRP entitles the holder of XRP to a share of Ripple's profits if Ripple is successful in its ongoing efforts to manage and develop its business operations and none of these contracts require Ripple to expend ongoing efforts to increase the price of XRP.[99]

64. For example, the executive compensation packages resulted in employees, as part of their compensation for their services, owning an asset (subject to various conditions such as vesting). Unlike the private equity ownership contracts, the compensation contracts do not give the employees any contractual right to a share of Ripple's profits if Ripple is successful in its ongoing efforts to manage and develop its business operations or impose any obligation on Ripple to expend ongoing efforts to increase the price of XRP.[100]

65. The fact that Ripple may have used the proceeds of its sales of XRP to help fund its own operations does not change the economic substance of the transaction or create any obligations on the part of Ripple to share its profits with the purchasers of XRP. Therefore, Dr. [redacted] claims about XRP being used in a similar manner as companies use stock is irrelevant for assessing whether XRP has the economic characteristics of an investment contract.

66. Even though sales of XRP generate revenue for Ripple's business, as Dr. [redacted] suggests, the sale of an asset, even if the seller uses it to fund other activities, does not create a relationship in which the buyer receives a right to future profits from the seller, or in which the seller is obligated to work to generate a future return on that asset. For example, de Beers sales of diamonds or Exxon Corporation sales of barrels of oil generates cash for these entities, but that

[99] Ferrell Report, at Section II.C.

[100] Ferrell Report, at Section II.C.

does not give diamonds or oil the economic substance of securities. XRP does not do that either, and Dr. [redacted] does not attempt to argue otherwise.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 1, 2021

[Expert name] Frank Allen Ferrell

Exhibit 1
Intra-Day Trading Volume on September 15, 2016

	GSR XRP Ledger		Cryptocurrency Exchanges	
Activity Period (UTC)	**Volume in Time Period**	**Share of Volume (%)**	**Volume in Time Period**	**Share of Volume (%)**
07:00 to 13:00	0	0%	18909793	1%
13:00 to 19:00	21,038,351	30%	1,572,842,549	55%
Total Time Period	69,917,897	100%	2,841,556,077	100%

Sources: [redacted] Backup Materials; SEC-LIT-EPROD-001847955; SEC-LIT-EPROD_001849640; CryptoCompare.

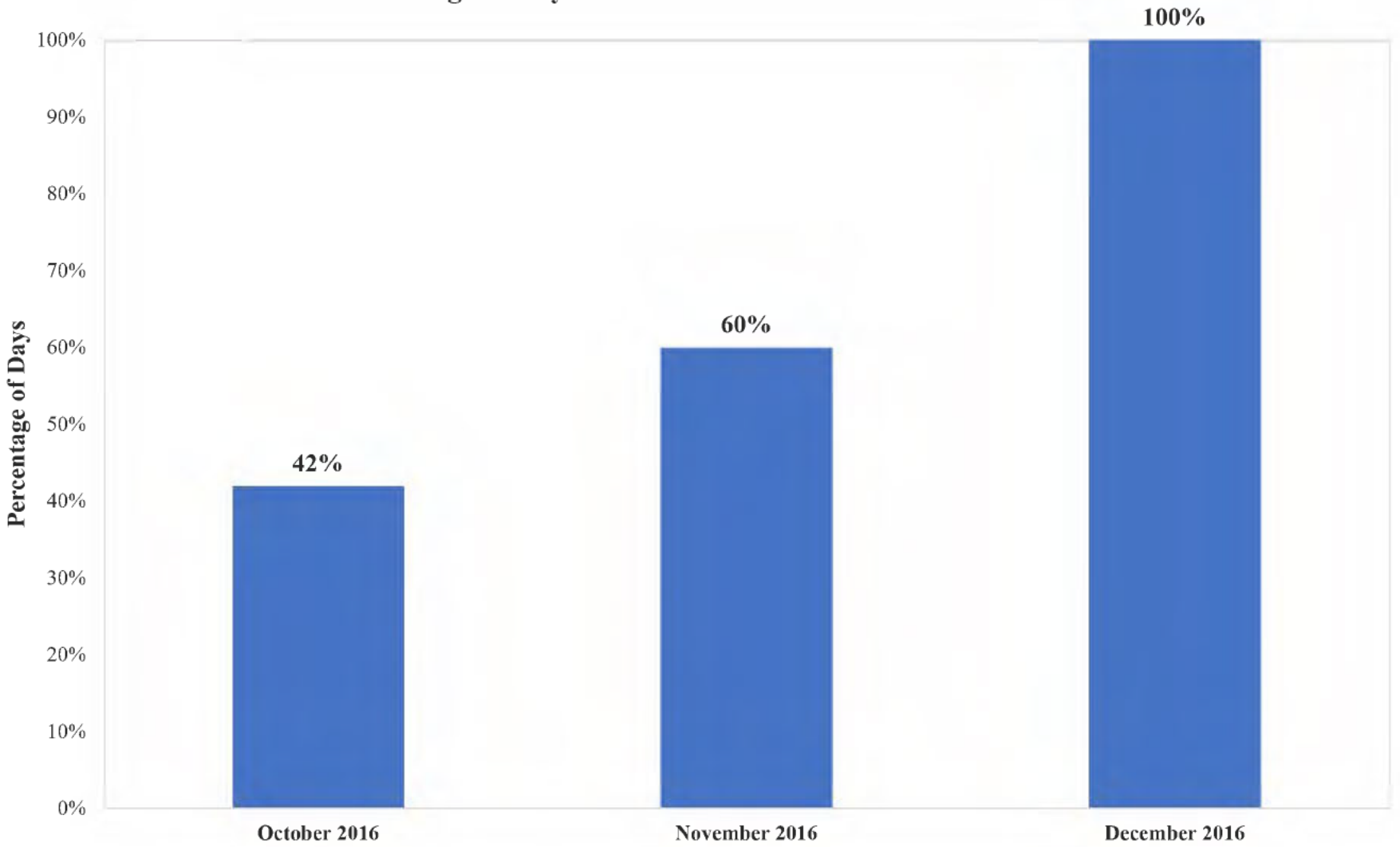
Notes:

[1] Share of volume is the share of the GSR or the exchange volume during the time period divided by the total GSR or the total exchange volume (reported by CryptoCompare) from 06:00 UTC September 15, 2016 to 13:00 UTC September 16, 2016.

[2] GSR volume equals the total purchases plus sales by GSR on the XRP ledger. Exchange volume is the total volume at cryptocurrency exchanges reported by CryptoCompare.

[3] Total Time Period is 06:00 UTC September 15, 2016 to 13:00 UTC September 16, 2016.

Exhibit 2
Percentage of Days With XRP Prices Lower Than $0.008



Source: SEC-LIT-EPROD-001848656.
Note: Percentage of Days is the percentage of days with a daily low price below $0.008.

Exhibit 3
XRP Price Returns
September 23, 2016 - September 28, 2016

Date Range	XRP Price Return
9/23-9/24	7.6%
9/25-9/26	8.2%
9/27-9/28	13.6%

Source: SEC-LIT-EPROD-001848656.
Notes:
[1] All returns are from close-to-close price of XRP.
[2] Close is the XRP price as of midnight UTC.

Exhibit 4
GSR Purchases and Sales and Hourly XRP Returns
April 11, 2016

Hour Before and After GSR "Reversal"	GSR XRP Purchases	GSR XRP Sales	GSR Net Purchases and Sales	XRP Hourly Return	Cumulative Hourly Return
-5	187,318	-254,456	-67,138	-0.2%	-0.2%
-4	749,000	-959,553	-210,552	-0.4%	-0.7%
-3	647,039	-413,843	233,196	-0.1%	-0.7%
-2	1,838,348	-2,265,589	-427,241	4.8%	4.1%
-1	399,628	-3,124,961	-2,725,333	2.0%	**6.2%**
1	1,883,720	-401,119	1,482,601	1.0%	1.0%
2	1,005,048	-57,915	947,134	3.3%	4.4%
3	1,229,106	-400,707	828,399	-1.5%	2.8%
4	3,950,235	-475,237	3,474,999	-2.6%	0.2%
5	5,822,582	-283,410	5,539,172	-3.4%	**-3.2%**

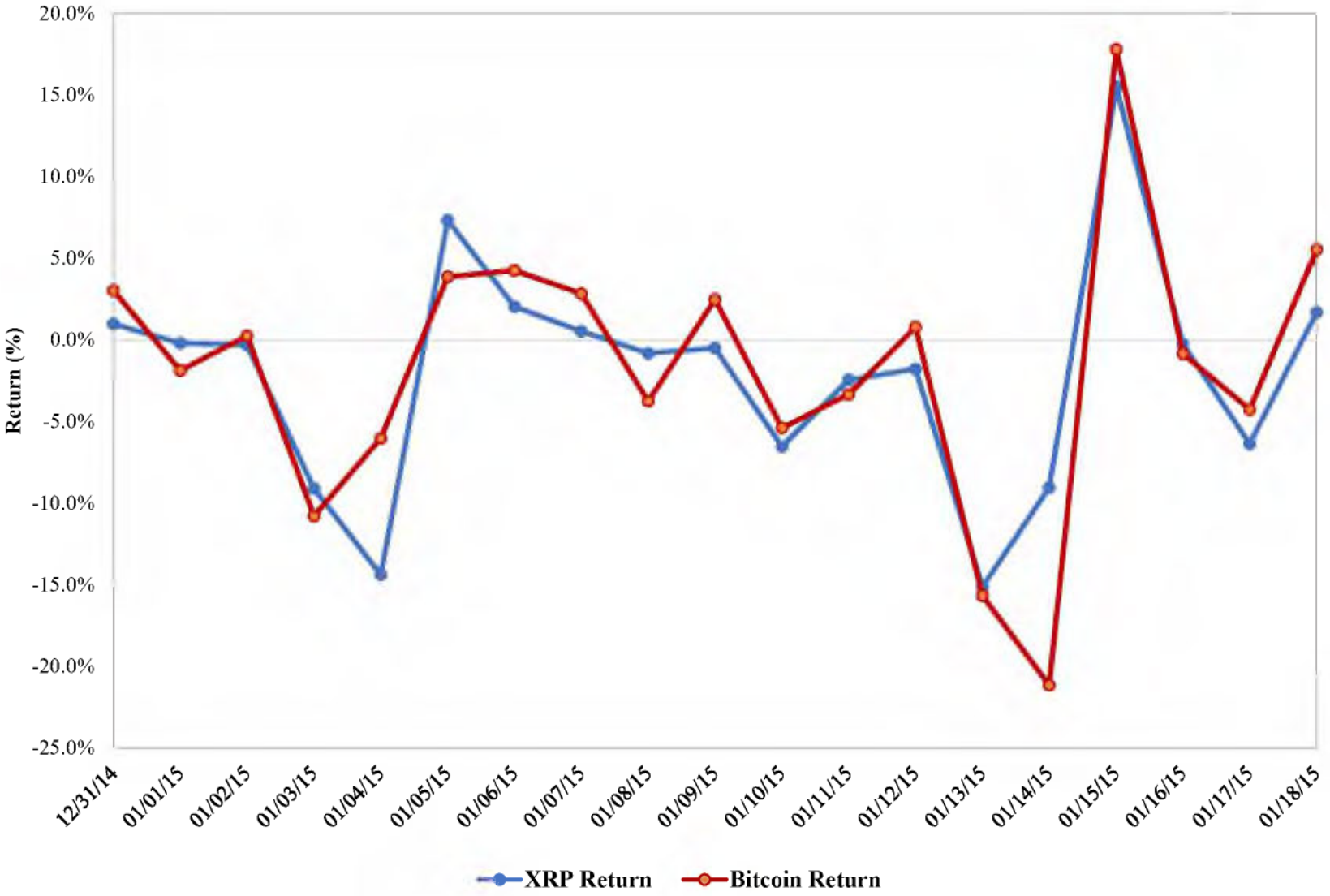
Sources: [redacted] Backup Materials; SEC-LIT-EPROD-001847955; SEC-LIT-EPROD_001849640; CryptoCompare.
Note: The thick blue line corresponds to the 0th hour or 9:00am UTC when GSR allegedly reversed their trading according to Dr. [redacted]. *See* [redacted] Report, Figure 4 and ¶ 24 ("Instead of net selling, XRP began net buying around 9:00am UTC.")

Exhibit 5
GSR's Net XRP Purchases on Behalf of Mr. Larsen at Poloniex

Date Range Shown in Dr. [redacted] Figure 5	GSR Net Purchases of XRP/BTC at Poloniex	Daily XRP/BTC Return	Absolute Value of Net Purchases of GSR as Percentage of Volume	Approximate Price Impact of Mr. Larsen Purchases and Sales
06/02/17	-363,155	-15.33%	0.11%	-0.26%
06/03/17	-465,792	-1.75%	0.21%	-0.49%
06/04/17	-310,157	0.88%	0.17%	-0.29%
06/05/17	-280,636	-7.63%	0.27%	-0.17%
06/06/17	-442,544	-8.15%	0.26%	-0.37%
06/07/17	-311,241	3.20%	0.15%	-0.20%
06/08/17	-281,308	-0.07%	0.21%	-0.18%
06/09/17	-408,377	-1.98%	0.34%	-0.27%
06/10/17	758,667	-10.56%	0.44%	0.38%
06/11/17	366,759	2.41%	0.32%	0.32%
06/12/17	1,497,937	1.29%	0.95%	0.48%
06/13/17	0	4.61%	0.00%	0.00%
06/14/17	0	9.73%	0.00%	0.00%
06/15/17	0	-4.78%	0.00%	0.00%

Sources: CIRCLE_00001699; SEC-LIT-EPROD-001849685 to SEC-LIT-EPROD-001849715; GSR00000101 to GSR00000103; RPLI_SEC 0679467; Poloniex.
Notes:
[1] Daily Return is the return from the closing price on the previous day. Close is the XRP price as of midnight UTC.
[2] Net purchases is GSR's purchases minus sales of XRP/BTC at Poloniex. Volume is XRP/BTC volume at Poloniex.
[3] Price impact uses the formula based on Bouchaud, J., J. Bonart, J. Donier and M. Gould, Trades, Quotes and Prices: Financial Markets Under the Microscope, Cambridge University Press, 2018, at 235-237, and Donier, J., and J. Bonart, "A Million Metaorder Analysis Impact on the Bitcoin," *Market Microstructure and Liquidity* 1(2), 2015.

Exhibit 6.A.
Daily XRP Return Versus Daily BTC Return



Source: CoinMarketCap.

Exhibit 6.B.
Comparison of Net GSR Sales on Negative Return Days to Overall

	Day with Negative Return of More than 10%		Overall
Date Range	Number of Days	Ratio of Average Daily Net Sales to Average Daily Volume	Ratio of Average Daily Net Sales to Average Daily Volume
11/1/2014 to 1/31/2017	39	3.30%	3.26%
6/1/2017 to 9/12/2017	7	0.11%	0.14%
9/13/2017 to 9/30/2019	31	0.10%	0.08%

Sources: GSR00000101 to GSR00000103; RPLI_SEC 0679467; CryptoCompare; CoinMarketCap.

Note: The date ranges correspond to Dr. [redacted] date ranges when GSR was active.

Exhibit 7
Regressions of Imbalances and XRP Price Returns

	[A]: Normalized by Circulating Supply				[B]: Normalized by Volume			
	Imbalance		Return		Imbalance		Return	
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
Constant	-2.26 ***	-2.25 ***	0.00	0.00	-0.00 ***	-0.00 ***	0.00	0.00
	(0.37)	(0.37)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Return (t)		-4.94				0.01		
		(8.43)				(0.01)		
Return (t-1)	-14.96 ***	-14.60 ***	0.07	0.07	-0.01	-0.01	0.07	0.07
	(5.01)	(4.87)	(0.07)	(0.07)	(0.01)	(0.01)	(0.07)	(0.07)
Return (t-2)	-6.89	-6.59	0.06	0.06	-0.01	-0.01	0.06	0.06
	(4.19)	(4.09)	(0.09)	(0.09)	(0.01)	(0.01)	(0.09)	(0.09)
Return (t-3)	-0.02	-0.01	0.00	0.00	0.01	0.01	0.00	0.00
	(3.73)	(3.69)	(0.03)	(0.03)	(0.00)	(0.01)	(0.03)	(0.03)
Return (t-4)	-2.59	-2.59	0.00	0.00	0	0	-0.01	-0.01
	(3.54)	(3.57)	(0.03)	(0.03)	(0.00)	(0.00)	(0.03)	(0.03)
Return (t-5)	0.06	0.27	0.04	0.04	0	0	0.04	0.04
	(3.37)	(3.33)	(0.04)	(0.04)	(0.00)	(0.00)	(0.04)	(0.04)
Imbalance (t)				-25.37				0.07
				(44.60)				(0.06)
Imbalance (t-1)	0.45 ***	0.45 ***	8.25	19.72	0.32 ***	0.31 ***	0.12	0.09
	(0.07)	(0.07)	(20.87)	(26.57)	(0.07)	(0.07)	(0.07)	(0.08)
Imbalance (t-2)	0.06	0.06	16.85	18.33	0.21 ***	0.21 ***	-0.06	-0.08
	(0.05)	(0.05)	(20.30)	(20.48)	(0.06)	(0.06)	(0.06)	(0.06)
Imbalance (t-3)	0.03	0.03	-5.09	-4.38	0.10	0.10	0.010	0.010
	(0.05)	(0.05)	(15.23)	(15.44)	(0.06)	(0.06)	(0.05)	(0.05)
Imbalance (t-4)	0.04	0.04	22.79	23.76	0.16 ***	0.16 ***	0.12 *	0.11 *
	(0.05)	(0.05)	(17.10)	(17.35)	(0.04)	(0.04)	(0.06)	(0.06)
Imbalance (t-5)	0.09 **	0.09 **	4.35	6.51	0.07 *	0.07 *	-0.06	-0.07
	(0.04)	(0.04)	(16.24)	(17.16)	(0.04)	(0.04)	(0.07)	(0.07)
Observations	1424	1424	1424	1424	1424	1424	1424	1424
Adjusted R2	0.29	0.29	0.01	0.01	0.51	0.51	0.01	0.01

Sources: GSR00000101; GSR00000102; GSR00000103; RPLI_SEC 0679467; SE[redacted]-0047622; SEC-LIT-EPROD-001848656.
Notes:
[1] Standard errors are robust to heteroskedasticity.
[2] * indicates significance at the 10% level, ** at the 5% level, *** at the 1% level.
[3] Following Dr. [redacted] methodology, when I normalize by the circulating supply in columns A.1 - A.4, imbalances are scaled by 100,000 in the imbalance regressions but not in the return regression. *See*, Griffin's Table 1.
[4] When I normalize by the volume, in columns B.1 - B.4, imbalances are scaled by 100,000 in the imbalance regressions and the return regression.
[5] In the volume-normalized columns imbalances are scaled up by 100,000.
[6] Volume is the total amount of currency exchanged as either a buy or sell according to CoinMarketCap.

Exhibit 8
Examples of Alleged Indirect Transfers of XRP from Mr. Larsen and Mr. Garlinghouse to GSR Traced by Dr. [redacted]

Hop Number	From Address ID	From Address	Timestamp of Transferred Units	Units of XRP Transferred	Destination Address ID	Destination Address	Units of XRP Traced by Dr. [redacted]	Cumulative Number of Days From Larsen or Garlinghouse Wallet Transfer
1	Larsen (Active)	[redacted]	5/22/17 6:30 PM	20,000,000	Another Party	[redacted]	2,083,313	0
2	Another Party		10/23/17 7:01 PM	2,083,333	Another Party		2,083,313	154
3	Another Party		3/26/18 2:45 AM	2,083,313	GSR		2,083,313	307
1	Garlinghouse (XRP Award 3)	[redacted]	6/10/20 6:45 PM	31,249,900	Another Party	[redacted]	9,999,900	0
2	Another Party		8/7/20 5:56 PM	9,999,900	GSR		9,999,900	58

Sources: SEC-LIT-EPROD-001851401; SEC-LIT-EPROD-001851404; SEC-LIT-EPROD-001851408; SEC-LIT-EPROD-001851409.
Note: SEC-LIT-EPROD-001851408 and SEC-LIT-EPROD-001851409 do not include the address IDs for the wallets in between the initial Garlinghouse and Larsen wallets and final destination wallet. When the Address ID has not been provided, "Another Party" is indicated above.

October, 2021

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Corporate Finance
Law and Finance
Securities Litigation & Regulation

REFEREE FOR FOLLOWING JOURNALS

American Law and Economics Review
Journal of Corporation Finance
Journal of Finance
Journal of Financial Perspectives
Journal of Law and Economics
Journal of Law, Economics and Organization
Journal of Legal Studies
Quarterly Journal of Economics

CONSULTING AREAS

Price Impact and Securities Damages, Valuation, Mergers & Acquisitions

Papers

"Are Star Law Firms Better Law Firms?" with Manconi, Neretina, Powley & Renneboog, Working Paper (2021)

"How Accurate are Matrix Bond Prices?" with Drew Roper & Yibai Shu, Working Paper (2018)

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"Do Exchanges, CCPs, and CSDs have Market Power?," *in* GOVERNANCE OF FINANCIAL MARKET INFRASTRUCTURE INSTITUTIONS (Ruben Lee) (2009)

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Pearlstein et al. v. Blackberry Limited, Case No. 1:13-cv-7060-CM, Expert report and deposition on November 3, 2020

In re Grupo Televisa Securities Litigation, Case No. 1:18-cv-01979-LLS, Expert report and deposition on February 21, 2020

In re Snap Securities Litigation, Case No. 2:17-cv-03679-SVW-AGR, Expert report and deposition on December 16, 2019

People of the State of New York v. Exxon Mobil Corporation, Index No. 452044/2018, Expert report and deposition on July 23, 2019 and trial testimony on November 6, 2019

In re Signet Jewelers Limited Securities Litigation, Case No. 1:16-cv-06728-CM, Expert report and deposition on May 14, 2019

Trustees of DALI et al. v. Barrick Gold Corporation, Case No. CV-14-502316-00CP, Ontario Superior Court of Justice, Expert reports and deposition on April 16, 2019

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CC IMA v. IMA Pizza, JAMS Ref No. 1425026556, Testimony on September 13, 2018

Bradley Cooper v. Thoratec Corporation et al., Case No. 4:14-cv-00360-CW, Expert report and deposition on April 11, 2018

Blattman v. C3, Inc. et al., Case No. 1:15-cv-00530-GMS, Expert report and deposition on December 22, 2017

United States v. Kaleil Tuzman, 15 Criminal Case No. 536 (US Attorney for the Southern District of New York), testimony on December 15 and 18, 2017

Appendix B: Materials Considered

Court Documents

First Amended Complaint, *Securities and Exchange Commission v. Ripple Labs, et al.*, No. 1:20-cv-10832 (S.D.N.Y. February 18, 2021)

Expert Reports

Expert Report of Allen F. Ferrell, October 4, 2021

Amended Expert Report of John M. [redacted], October 13, 2021 and backup

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