

Exhibit 1

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

AMENDED EXPERT REPORT OF [REDACTED]

October 13, 2021

Securities and Exchange Commission v. Ripple Labs, Inc. et al.
Index No. 1:20-CV-10832-AT

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I. INTRODUCTION

A. Assignment

1. I have been engaged by the Securities and Exchange Commission (“SEC”) to provide expert testimony in the matter of *Securities and Exchange Commission v. Ripple Labs, Inc., et al.* pending in the United States District Court for the Southern District of New York. The SEC has retained me to independently analyze and comment on two areas. First, the SEC asked me to opine on whether Ripple Labs Inc. (“Ripple”), Chris Larsen (“Larsen”), and Brad Garlinghouse (“Gsarlinghouse”) 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.¹

2. My opinions are based upon my professional knowledge and experience, my review of documents and information relevant to this matter, and the analyses described in this report. My analyses in this report rely partly on data, documents, and statements produced to the SEC by Ripple. I am not currently opining on the validity of the data, documents, and statements made by Ripple or produced to the SEC by Ripple in this matter.

B. Qualifications

3. [REDACTED]
[REDACTED] I have also served on the faculty at [REDACTED]
[REDACTED]
[REDACTED] I received a B.A. in Economics from [REDACTED], a M.S. in Finance from [REDACTED] and my Ph.D. in Finance from [REDACTED]

¹ I have also been retained to potentially provide additional analysis or opinion, if necessary, in response to additional information which may be presented in Defendants’ expert reports.

[REDACTED] I have been teaching investments to undergraduate and Ph.D. students over the last twenty-four years. I have also taught international finance to undergraduate and MBA students at [REDACTED]. I am a past President and Vice-President of the [REDACTED], former director of the [REDACTED], and current President and former Vice-President of the [REDACTED].

4. My research focuses on forensic finance, with specific interest in [REDACTED], [REDACTED], market manipulation, structured finance, credit ratings, initial public offerings (IPOs) and international finance. I have published 30 papers, mostly in the [REDACTED], [REDACTED] and have been cited [REDACTED] times according to Google Scholar. In the [REDACTED], my academic research on [REDACTED], titled [REDACTED], was published in [REDACTED] and has been extensively featured in over [REDACTED] outlets around the world including Bloomberg, The New York Times, The Wall Street Journal, and The Financial Times. I have also co-authored a significant number of published journal papers related to [REDACTED]. In particular, my academic research on [REDACTED] was similarly featured on many of the top media outlets and published in the [REDACTED], and my paper analyzing [REDACTED] was published in the [REDACTED].

5. [REDACTED]

[REDACTED] I have advised and consulted for the U.S. Department of Justice, the Securities and

Exchange Commission, the Commodity Futures Trading Commission, state-level enforcement and regulatory entities, and private parties.

6. My curriculum vitae, attached as Appendix A to this report, provides more details about my educational and professional background and experience, as well as a list of my publications in the last ten years. A list of cases for which I have provided testimony or submitted court-filed expert reports in the past four years is attached as Appendix B. I have been compensated at a rate of \$700 per hour for my personal time and I have been assisted by employees of Integra FEC [REDACTED]. My compensation is not contingent upon the findings of this report or outcome in this or any other matter. The use of “T” in this report includes all analyses of data performed by the staff of Integra FEC under my direction and oversight. My opinions are based on my own understanding of the analysis and results presented in this report.

C. Documents Considered

7. Documents, data, and other information that I have relied upon as the basis for my opinions are cited in this Report and listed in Appendix C. These include, but are not limited to, XRP sales reports from market makers retained by Ripple, Ripple internal communications, deposition transcripts and related exhibits reflecting communications of Ripple employees, XRP digital wallet addresses identified to be associated with Ripple, Larsen, and Garlinghouse, and Ripple financial statements. Other sources relied upon include publicly available XRP Ledger transactions and historical digital asset prices from CoinMarketCap and CryptoTick.

8. It is possible that I may review additional new information that may become later available, as well as the reports and depositions of other experts. I reserve the right to supplement my report and analyses based on any additional evidence, including any evidence brought to my attention by the defense, other experts, or obtained through discovery.

II. SUMMARY OF OPINIONS

9. Based on i) the analysis of Ripple's internal and external communications, documents and data provided by the SEC, ii) analysis of publicly available XRP Ledger transactions and historical price data, and iii) my academic research and knowledge of this field, I conclude that 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.² The facts I have reviewed reflect the following, among others:

- a. At specific times, Ripple and its executives directed GSR, a digital asset trading and market making firm,³ 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. In analyzed episodes of Ripple-directed trading, GSR traded exactly as directed and XRP prices generally moved upward or stopped declining.
- 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.
- c. Ripple also placed lock-up restrictions on certain sales of XRP, sold in over-the-counter sales agreements to individual or institutional investors, that would mitigate selling pressure. These 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.

² Throughout this report, I frequently use the present tense as a stylistic preference, however, unless otherwise indicated, my report covers the period from when Ripple began selling XRP in 2013 to the filing of the complaint in this action, December 22, 2020. Additionally, analysis is performed only when data are available for specific date ranges within this period.

³ <https://www.gsr.io/our-team>.

- d. Ripple and its executives are incentivized to influence XRP prices in order to maximize the proceeds raised from XRP sales. In addition to Ripple's sales of XRP, Larsen and Garlinghouse collectively transferred 4.4 billion units of XRP (valued at \$1.3 billion at the time of transfer) from their XRP digital wallet addresses. A large portion of these transfers were made to GSR, a market maker who also sold XRP programmatically on Ripple's behalf, to strategically sell their XRP holdings slowly over time.
- e. From 2017 to 2020, Ripple relied on XRP sales to supplement a very significant funding gap of over \$800 million that venture capital fundraising and other revenue items could not cover.
- f. Ripple used XRP in a similar manner as companies use stock. Ripple employees receiving XRP were incentivized to work together to increase the price of XRP similar to the incentives of employees at public companies who work to increase company share value. XRP was also used to fund Ripple operations and to enrich Ripple's founders, directors, and early investors.

III. BACKGROUND ON RIPPLE AND XRP

10. According to Ripple, beginning in 2011, Jed McCaleb, David Schwartz, and Arthur Britto evidently began development of XRP and the XRP Ledger as an alternative to Bitcoin and the Bitcoin blockchain.⁴ The ledger launched publicly in late 2012, and soon after Chris Larsen joined Ripple (then referred to as "OpenCoin") as co-founder and CEO. The native digital asset on the ledger, XRP, was created with a total fixed allocation of 100 billion XRP, of which 20

⁴ <https://xrpl.org/history.html>.

billion XRP were given to the founders and the remaining 80 billion XRP were transferred to Ripple.⁵

11. XRP is a digital asset whose transactions are tracked and recorded on a publicly distributed database known as the XRP Ledger. The XRP Ledger is also referred to as a blockchain. Transactions are recorded and grouped together into “blocks” that are cryptographically-validated and chronologically connected, forming a chain of blocks (i.e., a blockchain). Transactions on the XRP Ledger, like other blockchains, are recorded, maintained, and verified autonomously across a peer-to-peer network of servers and validators, where each computer retains an identical copy of the transactions database and updates database records by consensus agreement. On other blockchains such as Bitcoin and Ethereum, this network of computers is incentivized to verify and record transactions because of transactional fees paid by users to those who verify and record transactions via “mining” processes. These fees are paid in Bitcoin (BTC) and Ether (ETH) on the Bitcoin and Ethereum blockchains, respectively. In contrast, computers operating the XRP Ledger do not receive fees and there is no “mining” on the XRP Ledger.

12. Ripple sold XRP to the public beginning in 2013 and to at least December 22, 2020.⁶ Ripple sells its XRP to the secondary markets via digital asset platforms and through bulk over-the-counter (“OTC”) sales to institutional and individual purchasers.⁷ Beginning in December 2017, Ripple placed 55 billion XRP into 55 escrow accounts controlled by Ripple, which were scheduled to be released at a rate of one billion XRP per month. Ripple continues to

⁵ <https://xrpl.org/xrp-overview.html>.

⁶ Q4 2020 XRP Markets Report, <https://ripple.com/insights/q4-2020-xrp-markets-report>.

⁷ Q1 2017 XRP Markets Report, <https://ripple.com/insights/q1-2017-xrp-markets-report>,

Q2 2017 XRP Markets Report, <https://ripple.com/insights/q2-2017-xrp-markets-report/>,

Q3 2017 XRP Markets Report, <https://ripple.com/insights/q3-2017-xrp-markets-report>,

Q4 2017 XRP Markets Report, <https://ripple.com/insights/q4-2017-xrp-markets-report>.

monetize XRP sales by releasing XRP from its escrow accounts, then deciding how much of the one billion XRP per month should be released into the market and how much should be re-escrowed. As of December 22, 2020, there is a circulating supply of 45.4 billion XRP that can be bought, sold, or transferred in the open markets and the price of XRP is \$0.47 for a total (circulating and non-circulating supply) market cap of XRP of \$47.1 billion.⁸

13. Individuals or entities can interface with the XRP Ledger through computer applications and websites that enable them to send and receive XRP from a given XRP Ledger address (subsequently referred to as “XRP address”). XRP is controlled and spent using private keys, public keys, and public addresses. Private keys are randomly generated alphanumeric strings, public keys are alphanumeric strings mathematically derived from private keys, and public addresses are alphanumeric strings derived from public keys. In order to transfer XRP, the sender must know the private key that corresponds to the public address which stores the digital assets. Therefore, in a given transaction of XRP, one can infer that the sending party controls—i.e., has the private keys to—the XRP address that sent the funds, but the sending party may or may not have control of the receiving XRP address.

14. XRP can be exchanged for other digital assets and fiat currencies either on-ledger or off-ledger mainly via digital asset platforms. On-ledger trades are recorded on the XRP Ledger and historical trade prices, amounts, and timing can be retrieved and analyzed. Trades can be attributed to unique blockchain digital wallet addresses, similar to bank account numbers. The identities of traders behind these transactions are generally anonymized on the Ledger but can sometimes be unmasked through various means including self-disclosure, forensic analytics, or proprietary Know-Your-Customer data from digital asset platforms. Beginning in 2017, XRP

⁸ Wayback Machine Internet Archive of XRP on CoinMarketCap as of December 22, 2020. Accessed on October 4, <https://web.archive.org/web/20201222190557/https://coinmarketcap.com/currencies/xrp/>

became more commonly listed on centralized digital asset platforms where customers can convert XRP to another digital asset like Bitcoin or to fiat currencies like U.S. dollars. Centralized digital asset platforms are online marketplaces controlled and maintained by a company or organization on one or multiple centralized computer servers. Trades on centralized digital asset platforms are aggregated and reconciled by private computer servers and therefore, individual trades can only be analyzed if one has access to data provided by such platforms.

IV. RIPPLE COORDINATED WITH GSR TO BUY XRP IN A MANNER CONSISTENT WITH POSITIVELY INFLUENCING XRP PRICES

15. I first evaluate whether Ripple and its executives expended efforts consistent with attempting to influence the price of XRP. Ripple and its executives played a central role in creating and overseeing a liquid market for secondary transactions.⁹ 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.”¹⁰ 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.

16. Since the XRP Ledger is a publicly available database and at least some of the addresses from which GSR sold Ripple’s XRP are known through discovery, one can examine GSR’s trading activities directly on the XRP Ledger. Using XRP addresses associated with GSR,

⁹ 2017-05-25 GSR Programmatic Market Activity Agreement (Bates GSR00017429), 2018-03-02 GSR amended programmatic market maker agreement (Bates GSR00018580), 2019-09-05 GSR Xrapid master agreement (Bates GSR00000988).

¹⁰ Joint Submission by the Parties to Hon. Analisa Torres, February 15, 2021, Dkt. No. 45.

I am able to observe GSR's trades on behalf of Ripple. Technical details of the identification of GSR ledger trades can be found in Appendix D.

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. For example, on September 14, 2016, [REDACTED], the co-founder of GSR, received directions from Patrick Griffin (EVP of Business Development) and [REDACTED] (VP of Finance) to time Ripple's orders of XRP ahead of Ripple's announcements of new bank partnerships and Series B funding on the following day. Additional bank partners and funding would be highly positive news for XRP. GSR was then instructed by Griffin to "make purchases up to \$300k" and asked to consider "plac[ing] offers on the ask side of the order book to tighten the spreads and attract more buying volume from the market."¹¹ Griffin's direction to "make purchases" and "[place] offers...to tighten the spreads and attract more buying volume" suggests that Griffin wanted GSR to purchase XRP and induce other buyers to do the same. If traders see a highly active buying market, they may also purchase XRP because they see potential upward price momentum. Purchasing around a key announcement and pushing the price upward in the process might further create the perception for other market participants that the news being released is extremely important. GSR was directed to trade for "24 hours starting at 6am PST" or 1pm UTC on September 15, 2016. On the following day, news of Ripple's new partnerships and Series B funding was released at 1:10pm UTC by Ripple.^{12,13}

¹¹ Email from Patrick Griffin, September 14, 2016 (Bates GSR00020001).

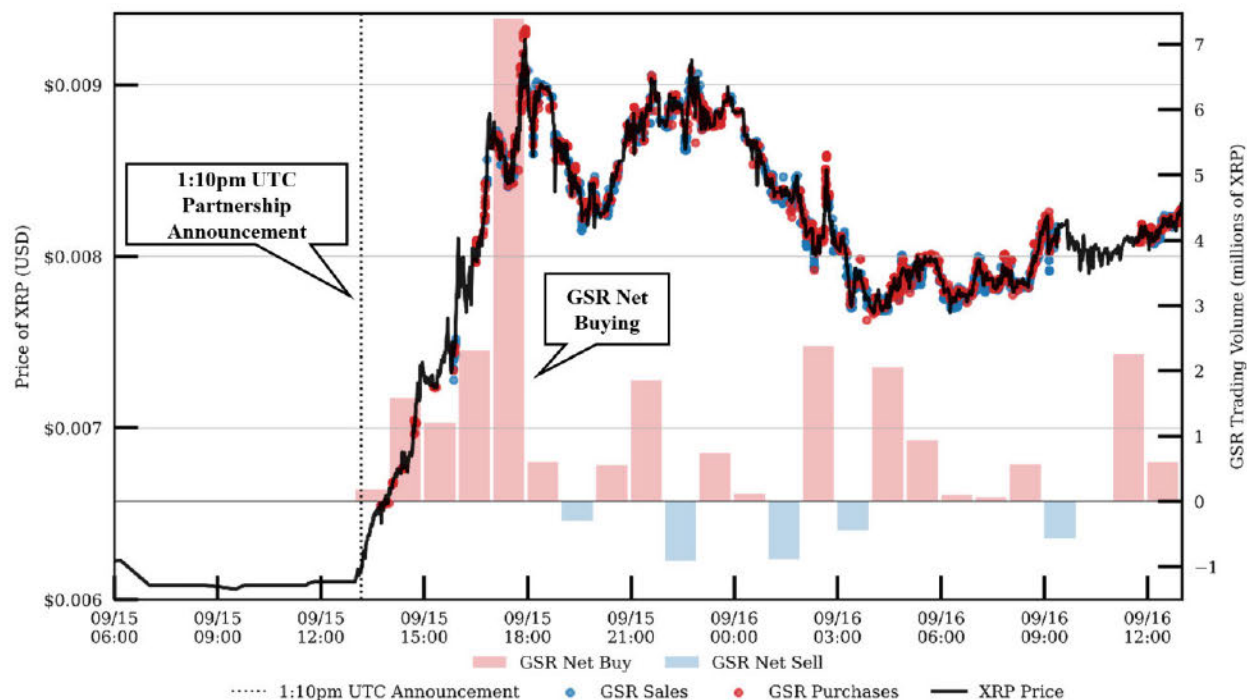
¹² https://ripple.com/ripple_press/ripple-adds-several-new-banks-global-network. This partnership announcement does not involve any bank using XRP or the XRP Ledger, but Ripple nevertheless touted the announcement as proof of Ripple's successful efforts to expand its network of banking partners that would adopt its technology for cross-border payments.

¹³ https://ripple.com/ripple_press/ripple-raises-55-million-series-b-funding.

18. Figure 1 examines GSR trading around this time to see if it traded as directed. The red bars denote hours of net buying by GSR on behalf of Ripple, while blue bars represent net selling. Net buying is calculated as total purchases minus total sales of XRP and net buying will be positive if there are more purchases than sales by GSR. Net selling is total sales minus total purchases of XRP. The red dots represent individual buy trades and the blue dots sell trades. As one can see from Figure 1, the price of XRP was flat in the six hours before GSR trading and GSR had no purchase or sale activity in the six-hour period prior to 1pm UTC. Beginning at 1pm UTC time, GSR begins net buying. This net buying directly corresponds to the time that GSR was directed to trade by Ripple. 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. 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.

Figure 1 – GSR Trading on XRP Ledger on September 15th, 2016.

This figure plots XRP transactions conducted by GSR in a 30-hour window on September 15 and 16 around Ripple's announcement on September 15, 2016. Transactions are sourced from the XRP Ledger. XRP Price, denoted by the black line, was calculated using the volume weighted average price at 1-minute intervals across all trades on the XRP Ledger involving the XRP-USD trading pair. GSR net buys and net sales are reported as bars in hourly increments. Individual GSR buy and sell prices are plotted using red and blue circles. The dashed vertical line represents the time of the news announcement. Data are displayed in UTC time zone.



19. In addition to this example of maximizing the price of XRP during a major announcement, from at least April 2016 to June 2017 certain Ripple executives also expended efforts that appear aimed at protecting the price of XRP at certain price floors. A price floor can be implemented to prevent large downward price movements that might lead to large losses for XRP holders, including Ripple, the largest XRP holder since XRP's inception. Declining prices are more likely to cause investors to sell their holdings, further exacerbating losses and making XRP appear as an unattractive investment to other buyers. In addition to having an economic incentive to make efforts to increase the price of XRP, Ripple had an economic incentive to attempt to stabilize or reverse any declining price trends in order to encourage investors to continue to hold

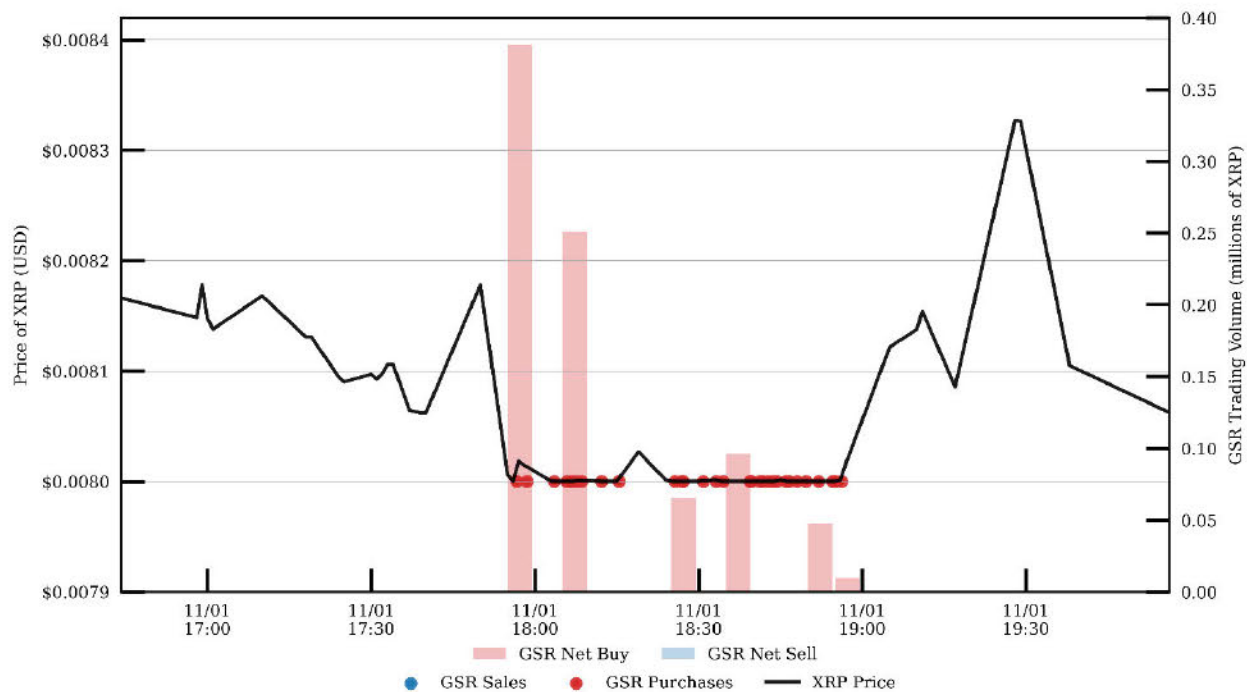
or buy more XRP. Protecting a price floor for XRP would permit Ripple to maximize revenue from its own XRP sales, all else being equal.

20. On November 1, 2016, Patrick Griffin instructed GSR to “aim to protect a \$0.008 floor.”¹⁴ By analyzing GSR transactions on the XRP Ledger, the trading and price behavior of XRP is plotted in Figure 2. Around 5pm UTC, XRP prices declined near \$0.008 USD. I make three observations. First, GSR made many purchases directly at \$0.008 USD, consistent with implementation of a price floor just as directed by Ripple. 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. Third, the prices reverted higher in the subsequent hour.

¹⁴ Email from Patrick Griffin, November 1, 2016 (Bates GSR00005000).

Figure 2 – GSR Floor Setting on XRP Ledger on November 1, 2016.

This figure plots XRP transactions conducted by GSR on November 1, 2016. Transactions are sourced from the XRP Ledger. The XRP Price, denoted by the black line, was calculated using volume weighted average price at 1-minute intervals across all trades on the XRP Ledger involving the XRP-USD trading pair. GSR net purchases and net sales are reported as bars in 5-minute increments. Individual GSR buy and sell prices are plotted using red and blue circles. Data are displayed in UTC time zone.



21. GSR also executed uneconomic trades whose purpose appears to be to push the price of XRP upward. Traditional market makers add liquidity to markets by reducing the spread between buyers and sellers. They make a profit by purchasing at a low bid price and selling at a slightly higher price. In contrast, GSR would place bid prices at levels artificially higher than other traders. The economic incentive to make bids for XRP in the market at prices above the prevailing bids would be to attempt to push the price of XRP higher. For a market maker without an existing position, overpaying by purchasing at higher prices rather than lower prices would generally be an uneconomic trade. But since Ripple held large quantities of XRP, the small additional cost of pushing the price higher would be more than offset by the gains from the large XRP positions which would then be valued at a higher price.

22. For example, on September 23, 2016, Ripple announced the creation of the Ripple Global Payments Steering Group.¹⁵ The Steering Group was purported to be a consortium of global banks that would help oversee the creation of Ripple transaction rules and promote Ripple's as of then undeveloped payment network. On September 23, 2016, with the approval of Garlinghouse, [REDACTED] directed GSR "to keep the buying light post announcement and then do the bigger slug starting Sunday night [September 25, 2016]," to coincide with Monday morning in Asia.¹⁶ On the XRP Ledger, we can see, as shown in Figure 3, that GSR made many purchases significantly above market prices.

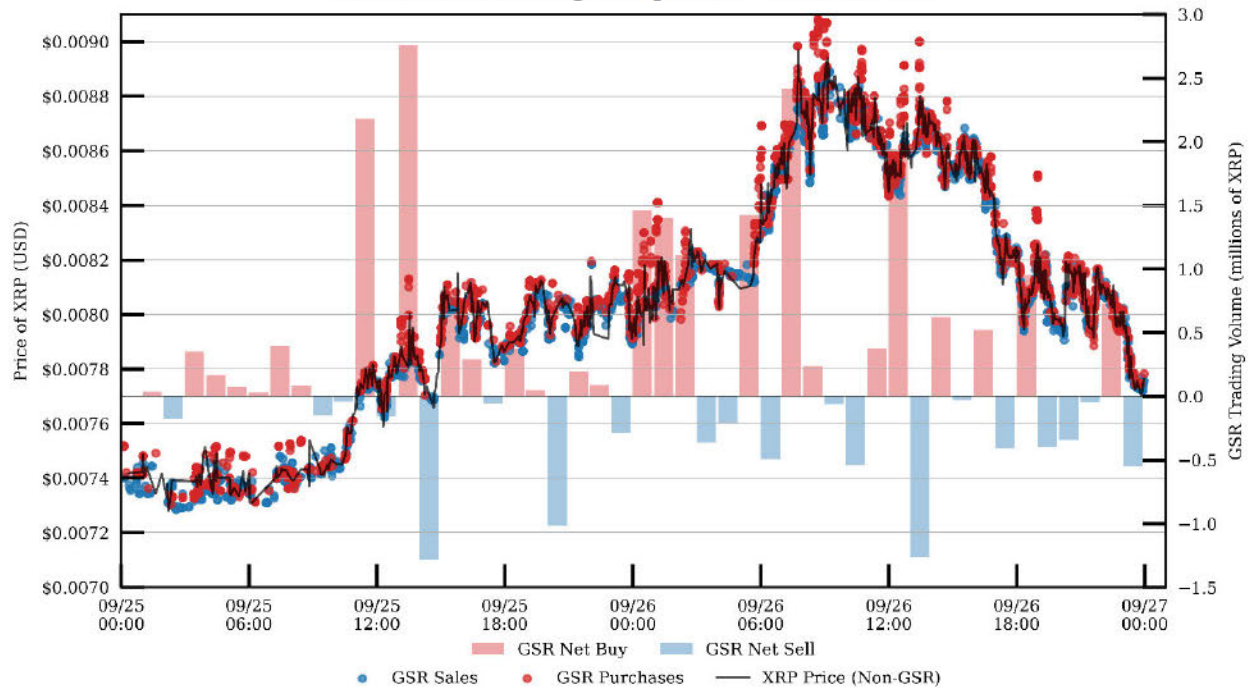
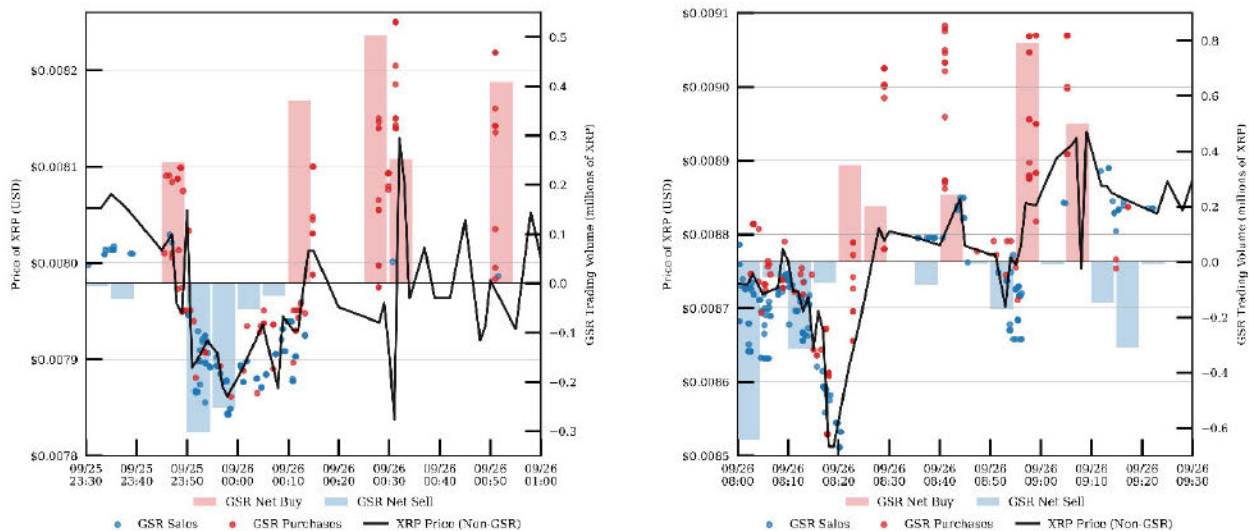
23. As shown in in Figure 3, Panel A, GSR's large purchases are consistent with placing a "bigger slug" starting on Sunday, September 25, 2016. GSR made several large purchases of XRP that both preceded and accompanied a dramatic rise in the price of XRP of over 15 percent within 24 hours. Moreover, as shown in Figure 3, Panel B, many of GSR's purchases (red dots) were consistently above average market prices (black line), and GSR on average purchased XRP at a 1.5 percent premium compared to the last trade price. 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.

¹⁵ <https://ripple.com/insights/announcing-ripples-global-payments-steering-group>.

¹⁶ GSR00006693.

Figure 3 – GSR Transactions Overpayment on September 25 and 26, 2016.

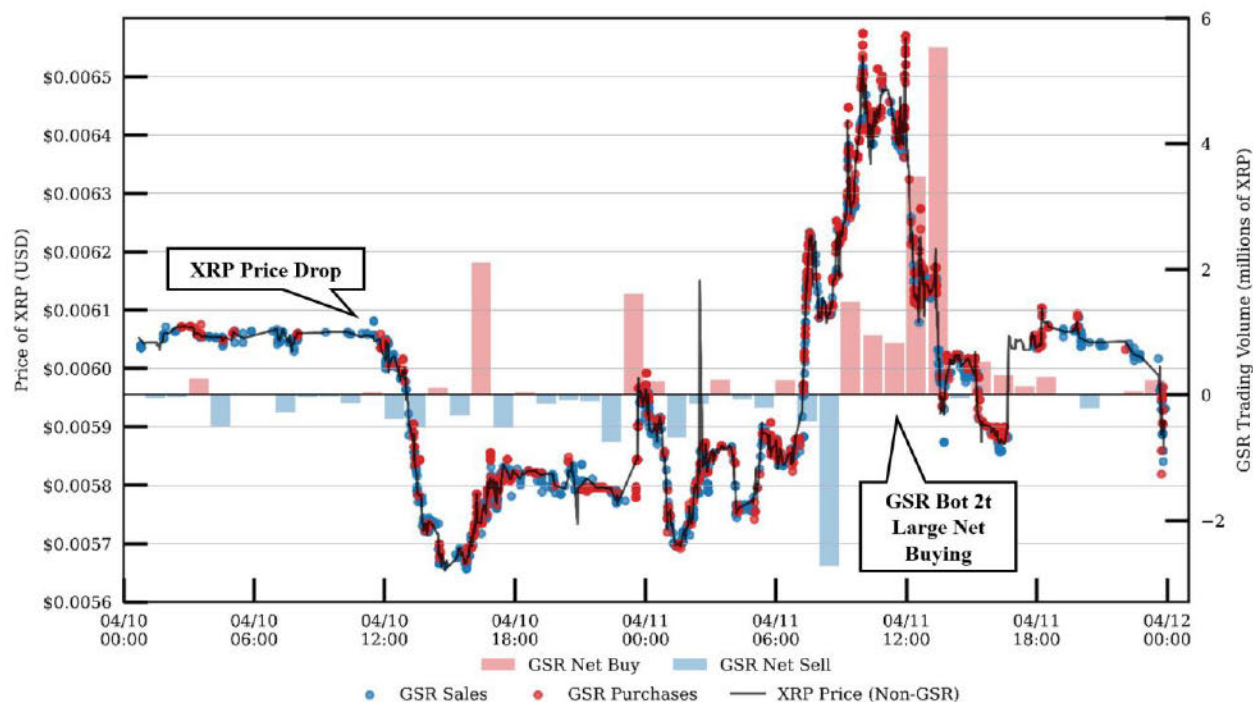
This figure plots XRP transactions conducted by GSR on September 25 and 26, 2016. Transactions are sourced from the XRP Ledger. The XRP Price was calculated using the volume-weighted average price at 1-minute intervals across all trades on the XRP Ledger involving the XRP-USD trading pair. GSR net purchases and net sales are reported as bars in hourly increments. Individual GSR buys and sell prices are plotted using red and blue circles. Data are displayed in UTC time zone.

Panel A. GSR Trading on September 25 and 26, 2016**Panel B. GSR Transaction Overpayment**

24. In at least one instance, instructions for GSR to buy XRP on behalf of Ripple that appear aimed at price support came directly from Ripple's top executives, Larsen and Garlinghouse. For example, on April 10, 2016 Garlinghouse wrote to Larsen, "Given the sell off this weekend – I think we should halt the sales entirely tomorrow and Tuesday – instead purchase \$20k each day."¹⁷ After Larsen replied, "Let's try it,"¹⁸ Ripple executives passed on the directives to GSR to buy XRP, who confirmed with an email the next day that it had followed Ripple's instructions and "reversed bot 2.t to net-buy 5% of previous 24 hour trading volume."¹⁹ 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.

Figure 4 – GSR Transactions on April 10 and 11, 2016.

This figure plots XRP transactions conducted by GSR on April 10 and 11, 2016. Transactions are sourced from the XRP Ledger. The XRP Price was calculated using volume weighted average price at 1-minute intervals across all trades on the XRP Ledger involving the XRP-USD trading pair. GSR net purchases and net sales are reported as bars in hourly increments. Individual GSR buys and sell prices are plotted using red and blue circles. Data are displayed in UTC time zone.



¹⁷ Email from Brad Garlinghouse, April 10, 2016 (Bates RPLI_SEC 0307781).

¹⁸ Email from Chris Larsen, April 10, 2016 (Bates RPLI_SEC 0307781).

¹⁹ Email from [REDACTED], April 11, 2016 (Bates GSR00011984).

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. Indeed, as discussed above, contemporaneous statements from Ripple employees support the conclusion that Ripple took these steps to increase or stabilize the price of XRP. GSR did in fact trade just as directed. GSR executed trades with the stated motive of preventing the price of XRP from going down and moving the price of XRP upward when it was directed to by Ripple and its executives. 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.

V. LARSEN COORDINATED WITH GSR TO BUY XRP WITH HIS PERSONAL FUNDS IN A MANNER CONSISTENT WITH POSITIVELY INFLUENCING XRP PRICES

26. In addition to instances where Ripple directed GSR to trade XRP in a manner consistent with positively influencing XRP prices, there are also instances where Larsen himself directed GSR to trade his personal holdings in a similar manner. For example, on February 18, 2017, Larsen emailed GSR, requesting “on my bot4, could you start buying as long as we’re below 0.006 usd.bitstamp.”²⁰ As covered in the next Section VII.A, GSR provided programmatic sales for Larsen’s personal XRP holdings and “4t” was the name of one the trading algorithms, referred to by GSR as “bots,” that conducted trades on behalf of Larsen.²¹ Like Ripple, Larsen is a large holder of XRP and stands to financially benefit from higher XRP prices through his personal sales of XRP.

²⁰ Exhibit CG-34 (Bates GSR0000104).

²¹ GSR00000467A.

27. Later in 2017, Larsen again used his personal holdings to buy XRP in a manner consistent with an effort to mitigate XRP price declines. On or around June 9, 2017, prices of XRP had declined by nearly 29% since the beginning of the month as shown on Figure 5. On June 11, 2017, Garlinghouse contacted Larsen, noting there had been “decent stability in the price over the past 36 hours.”²² Larsen responded that he personally bought a “total [of] \$800k [of XRP] by end [of] weekend” through GSR. In response, Garlinghouse speculated that Larsen’s purchases might be the reason for the recent XRP price stability.²³

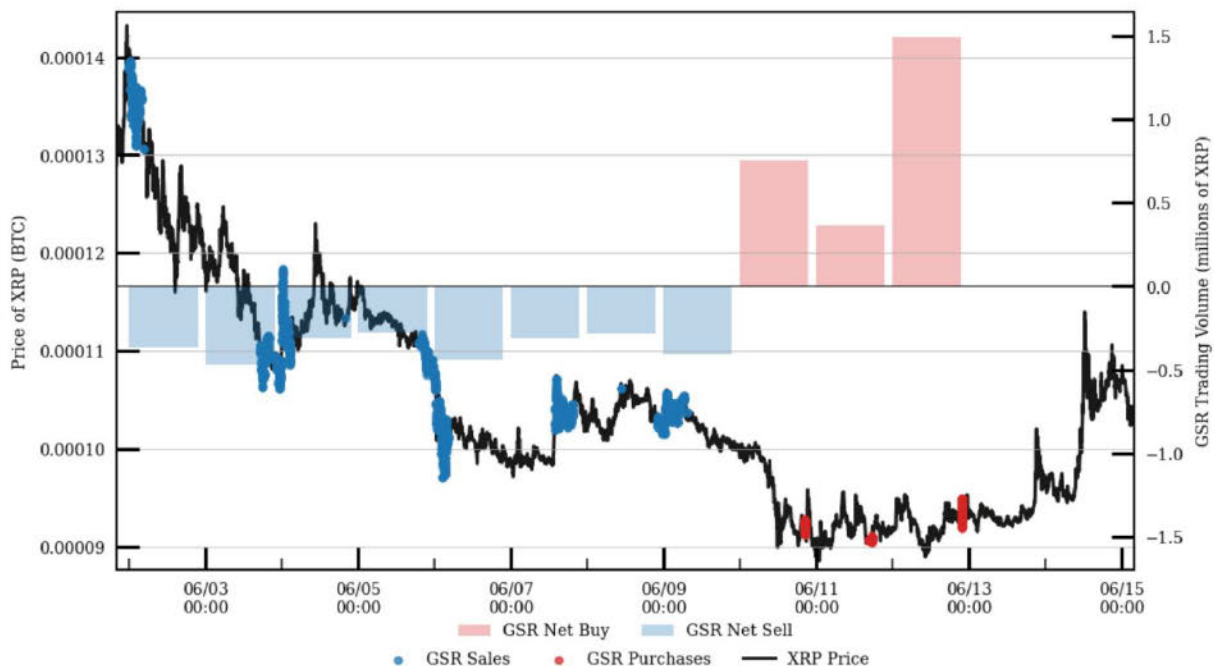
28. Figure 5 plots Larsen’s trading activity through GSR on the digital asset platform Poloniex in the XRP/BTC currency pair. In the eight days prior to June 10, Larsen was a large daily seller averaging 357,901 XRP in sales per day. Starting on June 11 and in the subsequent 72 hours, Larsen purchased a net total of 2,623,363 in XRP, or an average of 874,454 XRP per day and nearly 2.5 times more than his daily average of XRP volume in early June. Normally a seller of XRP, Larsen’s purchases 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. As can be seen in Figure 5, his buying beginning on June 10 coincided with the price of XRP stabilizing around 0.00009 XRP/BTC, and later reversing its earlier decline.

²² 2017.06.11 CL BG chat (Bates GARL_Civil_000877-78)

²³ *ibid.*

Figure 5 – Larsen Selling and Buying Activity in June 2017.

This figure plots XRP transactions conducted by GSR on behalf of Larsen from June 3 to 14, 2017. Transactions are sourced from the digital asset platform Poloniex.²⁴ The XRP Price, denoted by the black line, was calculated using the XRP-BTC price at 1-minute intervals on Poloniex.²⁵ Net purchases and net sales are reported as bars in daily increments. Individual GSR buy and sell prices on behalf of Larsen are plotted using red and blue circles. Data are displayed in UTC time zone.



VI. RIPPLE DIRECTED [REDACTED] TO SELL XRP IN A MANNER CONSISTENT WITH SEEKING TO MINIMIZE DOWNWARD PRESSURE ON XRP PRICES

29. Ripple had an economic incentive to maximize proceeds gained from XRP sales by selling large amounts of XRP while also increasing and maintaining high XRP prices. There is evidence that Ripple executives closely monitored XRP price movements and directed [REDACTED] to halt any sales activity that would further exacerbate sell-offs. This section finds that [REDACTED] selling behavior is consistent with the directives from Ripple, and that from January 2015 to at least September 2019,²⁶ [REDACTED] appears to carefully time when XRP would be sold so as to minimize the

²⁴ Filename: polo_gsr_trades.csv (Bates CIRCLE_00001699).

²⁵ Historical XRP/BTC trade data at the 1-second interval on Poloniex was sourced from CryptoTick.com.

²⁶ Detailed daily programmatic sales data for GSR is only available from January 2015 to September 2019.

negative selling impact on the price of XRP. An analysis of [REDACTED] XRP selling activity, together with the selling activity of [REDACTED] [REDACTED] Ripple's other large programmatic XRP sales partner,²⁷ finds that they sold more XRP following price increases.

30. As per [REDACTED], a member of Ripple's XRP Markets team which coordinated XRP sales, "Overall, our sales through GSR are done with sophisticated algorithms that 'drip' into the market, so the price impact should be marginal."²⁸ Specifically, Ripple set "target sell rates"²⁹ for XRP, which established a maximum amount of XRP it could sell as a percentage of the daily volume of XRP traded. Also, during times when the price of XRP experienced "downward pressure," Ripple executives including Bret Allenbach (then-CFO) and Garlinghouse discussed lowering the target sell rates, e.g., from 3.5% to 1.5%,³⁰ or even halting XRP sales in order to positively "impact the price."³¹

31. In April 2016, executives from GSR discussed trading strategies with Ripple noting that GSR "[has] analyzed the order books since Jan 1, 2015 in order to determine which days of the week there is more liquidity. We analyze the bid side of the order book in order to determine which days there is most demand for XRP" and that "this more dynamic strategy *may help maintain XRP prices higher* than the current strategy [emphasis added]."³² It was economically rational for Ripple to pursue these trading strategies because they could help maximize the amount of money Ripple could raise through its sales of XRP, as long as Ripple did not sell so much XRP

²⁷ Ripple also employed the services of [REDACTED], but it sold less than 2% of Ripple's total XRP sales between November 2014 to September 2019. Source: XRP Programmatic Sales Reporting FY14 to Date v2 (Bates RPLI_SEC 74559).

²⁸ Email from [REDACTED] on April 10, 2016 (Bates RPLI_SEC 0205600).

²⁹ *ibid.*

³⁰ Email from Bret Allenbach (CFO) on April 10, 2016 (Bates RPLI_SEC 0205602).

³¹ Email from Brad Garlinghouse on April 10, 2016 (Bates RPLI_SEC 0205601).

³² Email from [REDACTED], April 28, 2016 (Bates GSR00012857).

at one given time as to lower its price, since GSR “[has] observed that higher XRP prices result in more money-in and eventually higher volume” and help “distribute more XRP without adversely affecting the price of XRP.”³³

32. Ripple turned to its programmatic selling partners to implement its XRP selling strategy. Ripple enlisted ██████ to provide programmatic sales on behalf of Ripple from November 2014 to January 2017 and from June 2017 to at least September 2019.³⁴ ██████ provided programmatic sales on behalf of Ripple from September 2017 to at least September 2019.³⁵ ██████ develops high frequency trading algorithms, or “bots”, that programmatically place sales and purchases for XRP. ██████ employed a trading bot called bot 2, known at various times as bot 2s, 2t, and 2h, to submit orders programmatically on various trading platforms at the direction of Ripple.³⁶ For example, between December 2014 to January 2015, comments found in a historical daily sales report (also known as “liquidity extraction report”) of bot 2t seem to show ██████ and Ripple coordinating XRP sales in a manner consistent with stopping or reducing sales to mitigate impact when XRP prices are declining.³⁷ Figure 6 shows an episode from December 31, 2014 to January 8, 2015 where the price of XRP was declining and includes captions from notes contained in ██████ liquidity extraction report. As seen in the chart, ██████ often purposefully stopped selling XRP in an apparent effort to minimize the negative impact on the price of XRP, followed by instructions from Ripple to resume selling at different target sell rates when the prices stabilized.³⁸

³³ *ibid.*

³⁴ XRP Programmatic Sales Reporting FY14 to Date v2 (Bates RPLI_SEC 74559).

³⁵ *ibid.*

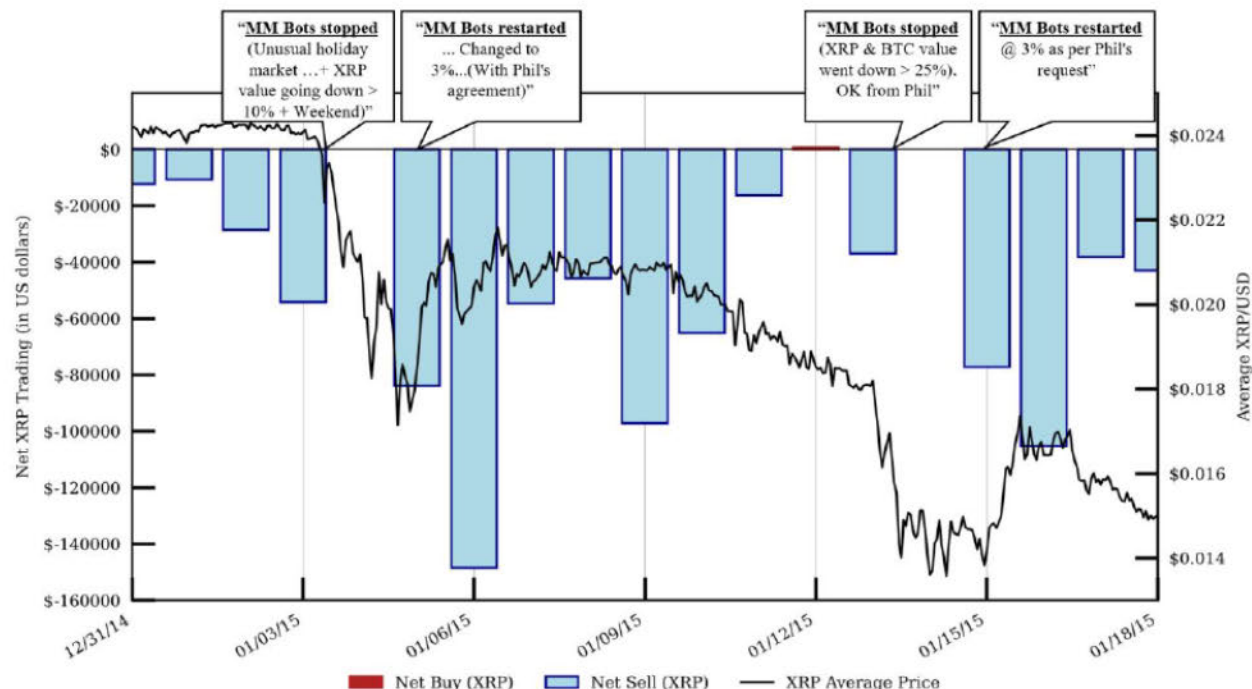
³⁶ Bot 2s was active from November 2014 to July 2015. Bot 2t was active from July 2015 to January 2016. Bot 2h was active from June 2016 to at least September 2019. Detailed daily purchases and sales of these bots are sourced from Excel Export - 2014-2016 - 2t - Liquidity extraction report (Bates RPLI_SEC 0679467-467), Excel Export 2017_OLD_2h_Liquidity_extraction_report (Bates GSR00000101), Excel Export 2018_2h_Ripple_Liquidity_Extraction_Report (Bates GSR00000102), and Excel Export 2019_2h_Ripple_Liquidity_Extraction_Report (Bates GSR00000103).

³⁷ Excel Export - 2014-2016 - 2t - Liquidity extraction report (Bates RPLI_SEC 0679467-467)

³⁸ Comments are only reported by dates without timestamps in the liquidity extraction reports.

Figure 6 – Net XRP Sales vs. Price of XRP.

This figure plots the net XRP sold by GSR as reported in GSR sales reports (blue bars) and the XRP/USD price (black dashed line). All data are sourced from GSR's Excel Export - 2014-2016 - 2t - Liquidity extraction report (Bates RPLI_SEC 0679467-467). The captions show notes from the "Comments" column on a given day in GSR's liquidity extraction report. The XRP Price, denoted by the black line, was calculated using volume weighted average price at 1-hour intervals across all trades on the XRP ledger involving the XRP-USD trading pair. Vertical gray line signifies 12pm UTC time for each day. As seen in the chart, GSR paused XRP sales when the notes indicate that XRP declined significantly (e.g., ">10%" or ">25"), and subsequently resumed sales upon either receiving specific sales targets or approval from Ripple.³⁹



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 [REDACTED] and [REDACTED] tend to sell less when prices fall and sell more when prices are stabilized or rising. This selling pattern can be observed by analyzing the daily net buy-sell imbalance of XRP by [REDACTED] and [REDACTED] on behalf of Ripple. 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

³⁹ Based on an email exchange from December 2014 to January 2015 between GSR and Ripple that discusses XRP sales, it is inferred that the person referenced in GSR's liquidity extraction report as "Phil", who is giving instructions/approval to start/stop XRP buys/sales, is [REDACTED], who at the time was the head of Ripple's XRP Markets Team. Sources: email exchange between [REDACTED] [Ripple], [REDACTED] [Ripple], [REDACTED] [GSR] and [REDACTED] [GSR] (GSR00007297) and Deposition of Patrick Griffin on June 29, 2021, at 75-76.

of XRP over the previous 30 days.⁴⁰ Imbalance regressions are often used in the finance literature to understand how different groups of traders react to past prices [(Chordia, Roll, Subrahmanyam (2002), Chordia and Subrahmanyam (2004); [REDACTED] (2003), (2007)].

34. A regression analysis of [REDACTED] and [REDACTED] trading activity shows that when the prior day returns of XRP increase, the amount of XRP that [REDACTED] and [REDACTED] sell also increases (Table 1).⁴¹ The previous day return coefficient, β_1 , is highly statistically significant and negative—consistent with net selling following a day of positive returns. Lagged 5-day returns and imbalances are added as controls. Based on this analysis of [REDACTED] and [REDACTED] net trading of XRP,⁴² 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, [REDACTED] 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.

⁴⁰ Daily circulating supply is sourced from <https://coinmarketcap.com/currencies/xrp>.

⁴¹ This regression follows the same buy-sell imbalance regression methodology as [REDACTED] (2003).

⁴² [REDACTED] trading activity is sourced from Excel Export - 2014-2016 - 2t - Liquidity extraction report (Bates RPLI_SEC 0679467-467), Excel_Export_2017_OLD_2h_Liquidity_extraction_report (Bates [REDACTED] 00000101), Excel_Export_2018_2h_Ripple_Liquidity_Extraction_Report (Bates [REDACTED] 00000102), and Excel_Export_2019_2h_Ripple_Liquidity_Extraction_Report (Bates [REDACTED] 00000103). [REDACTED] trading activity is sourced from 3.d – Ripple XRP Sales – All Trades (SEC [REDACTED]-E-0047622).

Table 1 – Regression Results of Programmatic Sellers’ Trading Activity and XRP Returns.

A regression was estimated using XRP returns and net buy-sell imbalance calculated for each date between January 1, 2015 and September 12, 2019. *Imbalance* is defined as the number of XRP purchased minus number of XRP sold per day by [REDACTED] and [REDACTED] on behalf of Ripple, normalized by dividing by the average daily circulating supply of XRP over the previous 30 calendar days. Dates where all named parties reported no activity were excluded from analysis. This regression was performed using heteroscedasticity-consistent standard errors (HC3). The coefficient β_1 is signed negative, indicating that as prior day returns increase, the named parties sell more XRP tokens (or buy fewer). For ease of interpretation of coefficient, results are scaled by 100,000. Z-statistics for the regression coefficients are presented in parenthesis. *p < 0.05, **p < 0.01, ***p < 0.001.

$$Imbalance_t = \alpha + \sum_{i=1}^5 \beta_i * Return_{t-i} + \sum_{i=1}^5 \lambda_i * Imbalance_{t-i} + \varepsilon_{t,R}$$

Dep. Var.	α	XRP Return					Buy-Sell Imbalance					Adj. R ²
		β_1	β_2	β_3	β_4	β_5	λ_1	λ_2	λ_3	λ_4	λ_5	
[REDACTED] and [REDACTED] Trading on Behalf of Ripple												
Imbalance _{<i>t</i>}	-2.26 (-6.06) ***	-14.96 (-2.98) **	-6.89 (-1.64)	0.02 (0.01)	-2.59 (-0.73)	0.64 (0.02)	0.45 (6.56) ***	0.06 (1.07)	0.03 (0.58)	0.04 (0.80)	0.09 (2.39) *	0.285

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. In an earlier mentioned email from [REDACTED] [REDACTED] (VP of Finance) to GSR where she anticipates the rise in the price of XRP based on a Ripple news announcement, she writes, “We want to keep the bots off for now but expect to make a news announcement on Thursday. If the news has positive impact and price rises, we would like to start selling into that. However, if price is not rising we will want to hold off.”⁴³ This again 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.

⁴³ Email from [REDACTED] [REDACTED] June 1, 2016 (Bates GSR00004438).

VII. LARSEN AND GARLINGHOUSE EMPLOYED GSR TO SELL THEIR XRP IN A MANNER THAT MINIMIZED THE NEGATIVE PRICE IMPACT OF THEIR XRP SALES, AND BLOCKCHAIN ANALYSIS CONFIRMS THAT THEY TRANSFERRED LARGE AMOUNTS OF PERSONAL XRP HOLDINGS TO GSR

A. Larsen and Garlinghouse Agreements with GSR

36. Both Larsen and Garlinghouse entered into “Liquidity Extraction Activity” agreements⁴⁴ with GSR and retained GSR to sell XRP. These agreements have a “Market Maintenance” clause that stipulates how GSR is required to sell XRP “in a controlled manner taking care not to de-stabilize the global Tokens [XRP] market.”⁴⁵ The earliest agreement between Larsen and GSR also adds specific language related to de-stabilization, which is that XRP sales should not “cause a ten (10) percent decline in the weighted average interday price of XRP.”⁴⁶ That agreement also limited daily sales to “five (5) percent of total network XRP trading volume in the twenty-four (24) hour period immediately preceding any sale of [Larsen’s] XRP.”⁴⁷ These 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.

B. Blockchain Tracing of Funds Leaving Larsen’s Addresses

37. Based on analysis of the XRP blockchain, I conclude that Larsen made significant use of GSR’s liquidity extraction services described in the previous Section VII.A to sell his XRP. Larsen directly transferred 1.5 billion XRP (\$495 million) to GSR out of a total of 4.0 billion XRP

⁴⁴ 2015 GSR Larsen agreement (Bates LARSEN-SEC-LIT-00004869-70); GSR Loan and Purchase Agreement_Chris Larsen Trust (final) (Bates GSR00008433-442); and 2017 GSR Garlinghouse Liquidity Extraction agreement (Bates GSR00000673-80).

⁴⁵ *ibid.*

⁴⁶ 2015 GSR Larsen agreement (Bates LARSEN-SEC-LIT-00004869-70).

⁴⁷ *ibid.*

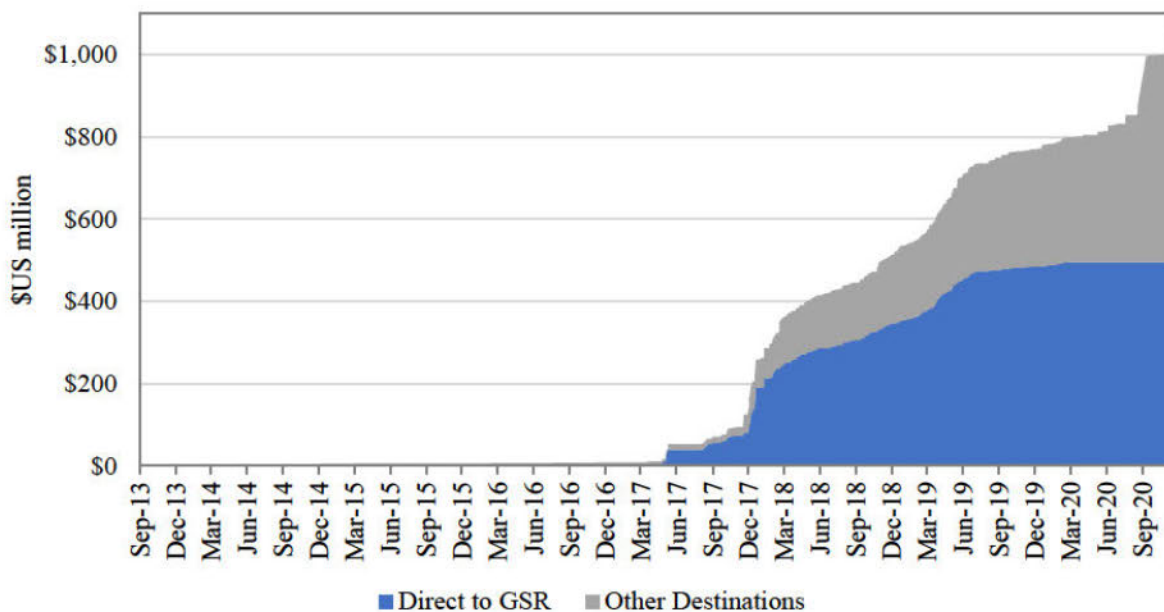
(\$1.1 billion) transferred out of his identified addresses.⁴⁸ This can be seen in Figure 7 which shows the cumulative amount of XRP transferred out of Larsen's identified addresses over time, including direct transfers to GSR. Other destinations receiving direct transfers of XRP from Larsen's identified addresses include digital asset platforms, other entities such as Coil (a startup where Larsen is a board member), or unidentified addresses. Unidentified addresses could be "over-the-counter" (OTC) trading counterparties or friends of Larsen to whom he sold XRP, as mentioned in his deposition.⁴⁹ Additional detail regarding where XRP flowed from Larsen's identified accounts as well as the methodology for the blockchain tracing can be found in Appendix D and Appendix E.

⁴⁸ The US dollar equivalent shown is the value of the XRP on the date it first left one of Larsen's identified addresses. The XRP-USD exchange rate is obtained from CoinMarketCap. Larsen's identified addresses comprise of a list of addresses produced to the SEC by Larsen (Bates LARSEN_NAT 00000102).

⁴⁹ Chris Larsen deposition at 80-83. September 14, 2021.

Figure 7 – Cumulative Value of Direct Transfers Out of Larsen’s Identified XRP Addresses

This figure plots the cumulative value, in US dollars, of the XRP that was transferred out of Larsen’s identified addresses. The amount that was directly transferred to GSR is shaded in blue. The US dollar value is based on the XRP-USD exchange rate, obtained from CoinMarketCap, on the day that the XRP was transferred out of Larsen’s identified addresses. Note: Larsen began transferring XRP out of his identified addresses beginning September 2013, but the amounts cannot be seen on the chart because of the scale.



38. The previous analysis is conservative because it looks only at direct transactions from Larsen to GSR. Larsen could have moved funds between blockchain addresses over multiple transfers, or ‘hops’. 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. Additional XRP moved from Larsen’s identified addresses to GSR addresses over multiple hops. 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). 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.

Table 2 – Cumulative Value of XRP Sent from Larsen to GSR Over up to Seven Hops

This table shows the cumulative amount of XRP sent to GSR from Larsen's identified addresses, given the number of transfers, as well as the USD equivalent on the date XRP left the identified addresses. For example, 1,496 million XRP was directly sent to GSR over 1 hop and 1,926 million was traced to GSR over up to seven hops. There is a small amount of XRP traced to GSR over 8 hops that is not shown because of rounding; blockchain analysis did not identify additional XRP sent to GSR beyond 8 hops.

Number of Hops	Cumulative XRP Transferred to GSR (million)	USD Equivalent (million)
1	1,496	495
Up to 2	1,519	499
Up to 3	1,860	568
Up to 4	1,901	590
Up to 5	1,906	592
Up to 6	1,916	596
Up to 7	1,926	599

Values rounded to the nearest 1 million XRP and 1 million USD.

C. Blockchain Tracing of Funds Leaving Garlinghouse's Addresses

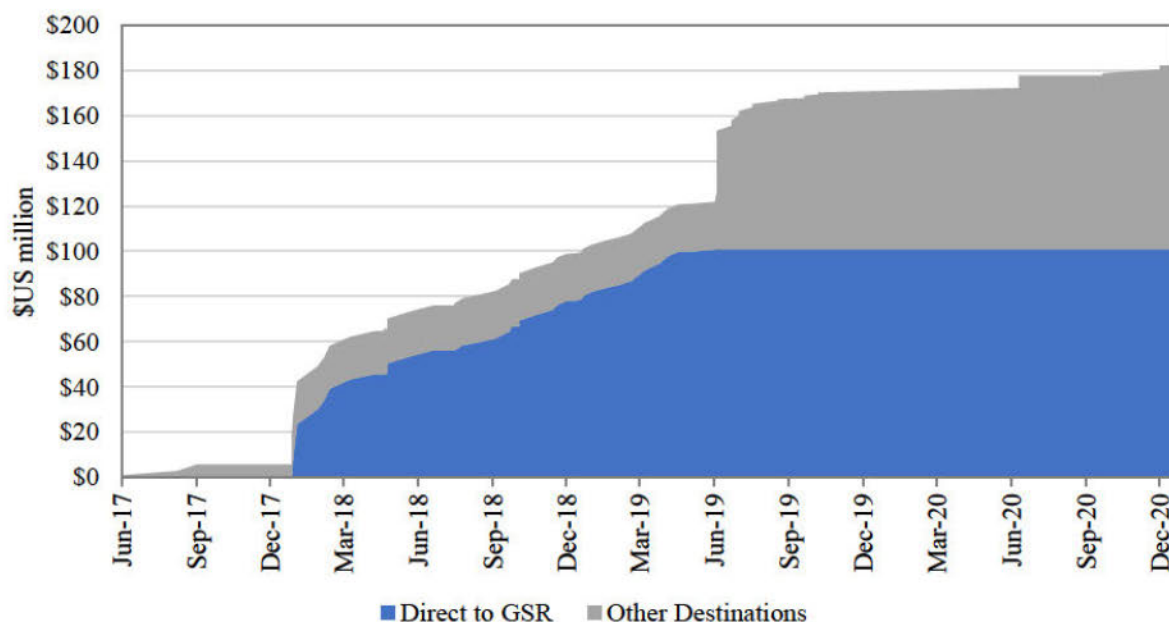
39. Similar to the Larsen analysis above, I also conclude that Garlinghouse made significant use of GSR's liquidity extraction services to sell his XRP. Garlinghouse directly transferred 167 million XRP (\$104 million) to GSR out of a total of 377 million XRP (\$186 million) transferred out of his identified addresses.⁵⁰ 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. Additional detail regarding where XRP flowed from Garlinghouse's identified accounts

⁵⁰ The US dollar equivalent shown is the value of the XRP on the date it first left one of Larsen's identified addresses. The XRP-USD exchange rate is obtained from CoinMarketCap. Garlinghouse's identified addresses comprise of a list of XRP addresses produced to the SEC by Garlinghouse [Garlinghouse Subpoena Response Spreadsheet, "Request 4" Tab (Bates GARL00000001-1) and Garlinghouse XRP Award Addresses (Bates GARL00000002-9)].

as well as the methodology for the blockchain tracing can be found in Appendix D and Appendix E.

Figure 8 – Cumulative Value of Direct Transfers Out of Garlinghouse’s Identified XRP Addresses

This figure plots the cumulative value, in US dollars, of the XRP that was transferred out of Garlinghouse’s identified addresses. The amount that was directly transferred to GSR is shaded in blue. The US dollar value is based on the XRP-USD exchange rate, obtained from CoinMarketCap, on the day that the XRP was transferred out of Garlinghouse’s identified addresses.



40. The total amount that Garlinghouse transferred to GSR could be as high as 277 billion XRP (\$139 million)⁵¹ because additional XRP moved from Garlinghouse’s identified addresses to GSR addresses through up to two hops, as shown in Table 3. Unlike with Larsen’s accounts, blockchain analysis does not identify XRP going to GSR beyond two hops.

⁵¹ The US dollar equivalent shown is the value of the XRP on the date it first left one of Larsen’s identified addresses. The XRP-USD exchange rate is obtained from CoinMarketCap.

Table 3 – Cumulative Value of XRP Sent from Garlinghouse to GSR Over up to Two Hops

This table shows the cumulative amount of XRP sent to GSR from Garlinghouse's identified addresses, given the number of hops, as well as the USD equivalent on the date XRP left the identified addresses. The blockchain analysis did not identify additional XRP sent to GSR beyond two hops.

Number of Hops	Cumulative XRP Transferred to GSR (million)	USD Equivalent (million)
1	167	104
Up to 2	277	139

Values rounded to the nearest 1 million XRP and 1 million USD.

VIII. RIPPLE ENTERED INTO PARTNERSHIP AND OTC AGREEMENTS WHICH INCLUDED TERMS THAT WOULD MINIMIZE DOWNWARD PRESSURE ON XRP PRICES

41. Lock-up provisions are common on Initial Public Offerings (IPOs) of shares, typically last 180 days, and are a means to prohibit or slow insiders, venture capital, and other pre-IPO shareholders from selling shares [Field and Hanka (2001)]. The motivation behind these restrictions is to limit the supply of saleable shares or sellers and thus reduce the downward pressure on shares prices. Similar to these IPO practices, Ripple implemented lock-up periods and selling restrictions on the resale of XRP. By restricting the amount these purchasers and partners could resell on the open market for XRP, Ripple limited the supply of XRP tokens, thereby minimizing downward pressure on the price of XRP as I describe in more detail below.

42. Ripple made use of lock-up periods and selling restrictions in its institutional sales. For example, in October 2014 when [REDACTED],⁵² purchased [REDACTED] worth of XRP, it was subject to a lock-up period of [REDACTED].⁵³ When Ripple sold [REDACTED] worth of XRP in June 2016 to [REDACTED],⁵⁴ Ripple required a [REDACTED] lock-up period and a subsequent [REDACTED]

⁵² [https://www.linkedin.com/company/\[REDACTED\]/about](https://www.linkedin.com/company/[REDACTED]/about).

⁵³ XRP II Master Agreement – [REDACTED] 11.29.2014 (Bates RPLI SEC 0259585-593).

⁵⁴ [https://fortune.com/\[REDACTED\]](https://fortune.com/[REDACTED])

period where XRP sales were limited to [REDACTED] of the average daily volume.⁵⁵ Subsequent XRP bulk purchase agreements, for example in 2018 to [REDACTED], an investment management firm, also included a “Lockup Period” and a “Daily Sale Limitation.”⁵⁶

43. When distributing XRP as compensation or incentives to service providers and partners, Ripple also made use of lock-up and selling restrictions. In its 2017 agreement with [REDACTED], which also helped Ripple sell XRP on the open markets, XRP payments from Ripple to [REDACTED] were subject to a lock-up period of [REDACTED], and sales after this lock-up period were limited “to no more than [REDACTED] of daily XRP notional value trading volume on all venues where XRP is listed.”⁵⁷ In 2019, Ripple entered into an agreement with [REDACTED] to develop a digital asset wallet and provided an “XRP Incentive” of [REDACTED].⁵⁸ In that agreement, [REDACTED] subsequent selling of this XRP incentive could not exceed [REDACTED] of the three-day average total trade volume of XRP.⁵⁹ Overall, these lock-up provisions and sales restrictions are consistent with Ripple taking steps to protect the price of XRP.

IX. RIPPLE HAD STRONG INCENTIVES TO MAXIMIZE XRP PRICES

A. Funding Operational Costs

44. Revenue from XRP sales comprise Ripple’s key source of revenue. As seen in Figure 9, from 2013 to 2020, in each year revenue from XRP sales accounted for over 90% of Ripple’s total revenue, and in some years was greater than 99% of total revenue.

⁵⁵ 2016-06-09 [REDACTED] summary of XRP purchase, (Bates RPLI_SEC 0000626-631) and 2016-06-23 [REDACTED] summary of XRP purchase, (Bates RPLI_SEC 0000636-641).

⁵⁶ 2018-02-22 [REDACTED] Purchase agreement, (Bates RPLI_SEC 0233130-148).

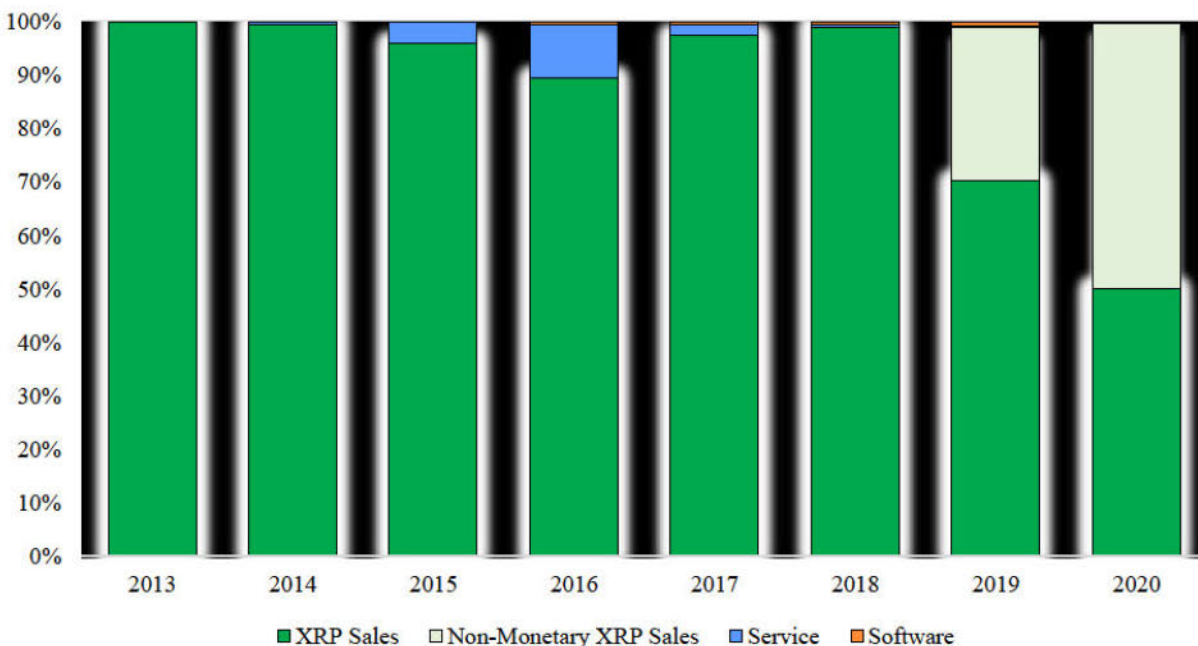
⁵⁷ 2017-02-14 [REDACTED] MM and programmatic market activity agreement, (Bates RPLI_SEC 0899145-151).

⁵⁸ 2019-05-24 [REDACTED] Incentive agreement, (Bates RPLI_SEC 0298094-102).

⁵⁹ *ibid.*

Figure 9 – Ripple Revenue Stream Proportions, 2013-2020.

This figure displays Ripple’s revenue streams as a proportion of total revenue from 2013 to 2020. The bars for each year aggregate the XRP sales, XRP non-monetary transactions,⁶⁰ service and software revenue to show the total revenue. Data are sourced from the income statements from Ripple audited annual financial statements.⁶¹



45. Without revenue from XRP sales, Ripple would have faced enormous operating deficits. This is shown in Figure 10, which plots Ripple’s operating expenses (orange line) against Ripple’s revenue excluding revenue from XRP (blue line). Without revenue from XRP sales, Ripple would have operated with significant annual operating deficits (signified by the gap

⁶⁰ Ripple’s auditors define non-monetary XRP transactions as follows: “Non-monetary XRP transactions revenue consists of transactions where the Company delivers XRP to customers for consideration other than cash or other monetary consideration and is recognized upon delivery of XRP. Revenue for non-monetary XRP transactions is determined based on the value of consideration expected to be received from the customer. This is typically the value of the XRP delivered to the customer.” Consolidated Financial Statements-as of December 31, 2019 (Bates RPLI_SEC 0301113-1160).

⁶¹ Ripple Financial Statements 2013 and 2014 - with notes (Bates RPLI_SEC 0090938-962),

Ripple - 2015 FS (Bates RPLI_SEC 0426161-187)

Ripple Financial Statements 2016 and 2017 OCR (Bates NY-9875_T_00017816-854)

Ripple Financial Statements 2017 and 2018 OCR (Bates RPLI_SEC 0267872-911)

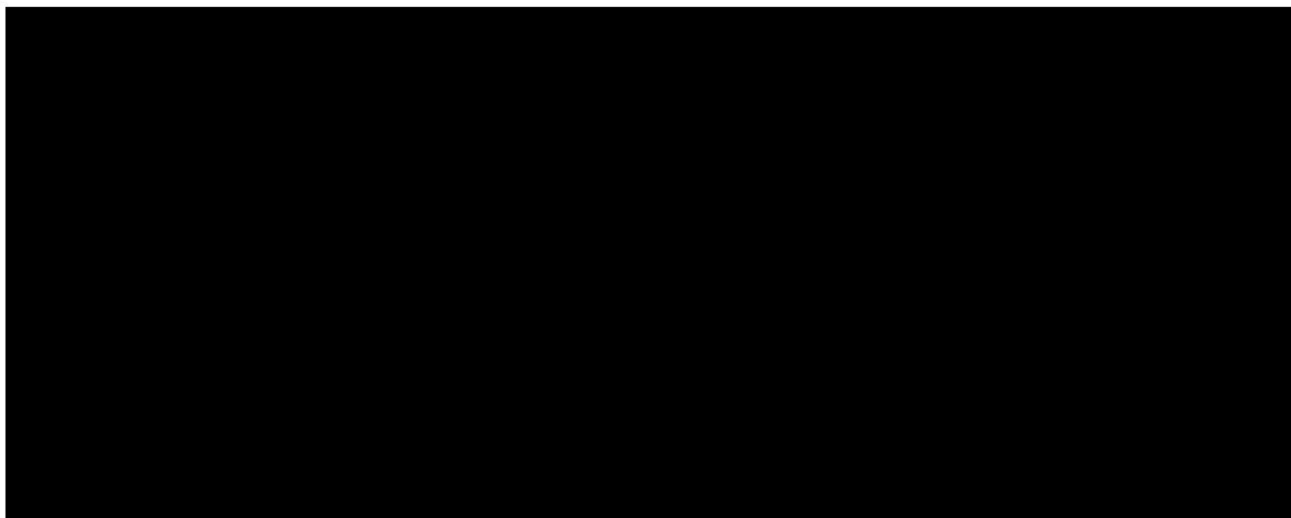
Consolidated Financial Statements-as of December 31, 2019 (Bates RPLI_SEC 0301113-1160)

2020 and 2019 Audited Financial Statements OCR (Bates RPLI_SEC 0920429-475)

between orange and blue lines) ranging from [REDACTED] per year from 2017 to 2020.

Figure 10 – Ripple Total Non-XRP Revenue vs. Total Operating Expenses, 2013-2020.


This figure plots Ripple’s total operating expenses (orange line) against total Ripple revenue excluding revenue from XRP sales (blue line). Without revenue from selling XRP, Ripple would have operated with large annual operating deficits ranging from [REDACTED] from 2017 to 2020, which can be seen as the gap between the orange and blue lines. Data comes from the income statements from Ripple audited annual financial statements.



46. From 2013 to 2020, Ripple has also received multiple rounds of outside capital funding, totaling \$284 million, net of issuance fees.⁶² While this funding has helped to cover Ripple’s operational deficits to a certain extent, as seen in Figure 11, starting in 2017 Ripple has been dependent on XRP sales to fund its operations. Had Ripple not sold XRP to fund its operations, it would have had an annual funding gap of [REDACTED] in 2017 which would have grown to nearly [REDACTED] by the end of 2020, as denoted by the red line in Figure 11. Without additional funding Ripple could not have stayed in operation, given its cost structure, without its sales of XRP. Indeed, an early Ripple pitch deck stated that part of Ripple’s business model

⁶² Value calculated from “Cash flows from financing activities” in the cash flow statements from Ripple audited annual financial statements.

included keeping a significant portion of XRP and “occasionally” selling XRP “to fund itself.”⁶³ However, since 2017 Ripple has been dependent on selling XRP to fund its operations.



B. Funding for Shares Repurchases

47. Sales of XRP have not only provided critical funding for Ripple’s operations but have also enabled Ripple to undertake private share repurchases that have rewarded existing shareholders, who are likely mostly comprised of early investors, founders, and employees of

⁶³ Ripple Financial Services, July 2013 (Bates RPLI_SEC 0088287).

Ripple.⁶⁴ Ripple has repurchased a total of [REDACTED] in shares previously issued to its early investors and founders (Figure 12). Without XRP sales, Ripple would have had a significant cash deficit (denoted by the red line in Figure 11 above) and would not have had the cash to pay for shares repurchases. However, with XRP sales, Ripple has been able to fund shares repurchases that have rewarded early investors, founders or employees handsomely, as Ripple's private valuation apparently skyrocketed from \$100 million in 2015 to \$10 billion in 2020—a hundred-fold increase.⁶⁵



⁶⁴ It is possible that early investors, founders or employees may have sold their shares in private markets to other entities or individuals.

⁶⁵ Ripple was valued at \$100 million after its funding round in 2015 (<https://www.wsj.com/articles/BL-DGB-40105>), and later valued at \$10 billion after its funding round in 2020 (<https://www.cnn.com/2019/12/20/ripple-creator-of-xrp-cryptocurrency-is-now-valued-at-10-billion.html>). This valuation does not include the holdings of XRP held in escrow or circulating supply of XRP in market held by public hands.

⁶⁶ Ripple Financial Statements 2013 and 2014 - with notes (Bates RPLI_SEC 0090938-962),

Ripple - 2015 FS (Bates RPLI_SEC 0426161-187)

Ripple Financial Statements 2016 and 2017 OCR (Bates NY-9875_T_00017816-854)

Ripple Financial Statements 2017 and 2018 OCR (Bates RPLI_SEC 0267872-911)

Consolidated Financial Statements-as of December 31, 2019 (Bates RPLI_SEC 0301113-1160)

2020 and 2019 Audited Financial Statements OCR (Bates RPLI_SEC 0920429-475)

C. Funding from Outside Investors vs. Through XRP Sales

48. As established in the previous section, Ripple needed to sell XRP because outside sources of funding, which include venture and institutional investors, and sales of non-XRP related software and services⁶⁷ did not provide enough capital to fund its annual operational costs. Internally at Ripple, there was discussion that not being completely dependent on outside institutional investors was beneficial. According to David Schwartz (CTO), Ripple's revenue stream from XRP sales provided an important source of funding that would enable Ripple to be less dependent on outside funding. Specifically, he argues, "XRP price matters because it's a current and future revenue stream, securing our business and maintaining a level of independence of the company from outside funding. The value of the company's XRP holdings is significant and we have an obligation to be sensible stewards."⁶⁸

49. When companies raise funds by issuing equity to outside investors, their management loses a portion of control over the company since their share of equity is diluted with each round of new investments. This is the case when Ripple received venture capital funding from its outside investors.⁶⁹ However, the sales of XRP are not subject to a reduction of shareholder voting rights for executives because holders of XRP do not have any voting rights. This provided a further incentive to raise more funds through selling XRP and taking actions to increase its price. In other words, by selling XRP instead of equity, Ripple could enjoy the benefits of capital raising through sale of XRP, without the costs typically associated with such sales. Those costs typically

⁶⁷ https://www.crunchbase.com/organization/ripple-labs/company_financials.

⁶⁸ David Schwartz Deposition Exhibit 84 (RPLI_SEC 0576405). In his deposition (pp 407-408), Schwartz states that his document, "Why Should We Care About XRP Right Now?" was imported into the referenced document under discussion. The quotation comes from the top of the "Why Should We Care About XRP Right Now?" section.

⁶⁹ For example, Ripple's Series A funding round provided voting rights to investors and entitled them to appoint a director to Ripple's Board of Directors, as seen in Ripple Labs, Inc. Consolidated Financial Statements As of December 31, 2014 At 16 (Bates RPLI_SEC 0090955).

include giving up control of its operations and the costs and scrutiny of complying with regular investor disclosures of financial records.

50. Because sales of XRP helped to fund its operations with less strings attached relative to raising equity, Ripple had the incentive to increase both its sales of XRP and the price of XRP.

D. Executive Compensation

51. Another incentive for Ripple and its executives to actively manage and increase the price of XRP is that Ripple executives and employees owned XRP and received compensation and bonuses in XRP. As detailed in Section VII, both Larsen and Garlinghouse received and subsequently transferred large amounts of XRP, valued at \$1.1 billion and \$186 million respectively. The average CEO of the top 350 publicly traded company makes approximately \$9.5 million per year through shares and shares options awards.⁷⁰ In contrast, Larsen and Garlinghouse on average transferred \$120 million per year out of their addresses,⁷¹ more than 12 times the average annual executive shares and shares option awards at the top 350 publicly traded companies. Yet, Ripple's non-XRP revenue, as shown in Figure 10, is trivial compared to the annual revenue of these companies.

52. Other Ripple executives also received compensation in XRP. For example, a Ripple General Manager was entitled to and received annual bonuses from Ripple of one million XRP.⁷² This suggests that the team of Ripple managers and executives who received XRP, including

⁷⁰ <https://www.epi.org/publication/ceo-compensation-2018>.

⁷¹ Average is based on every full year that Larsen and Garlinghouse transferred funds out of their identified addresses, i.e., 2014-2020 for Larsen and 2018-2020 for Garlinghouse.

⁷² Asheesh Birla deposition at 55. June 23, 2021.

Larsen and Garlinghouse, were incentivized to manage and increase the price of XRP and minimize downward pressure on the price of XRP.

E. XRP vs. Stock Similarities

53. Based on my expertise in investments, IPOs,⁷³ and financial markets, I find that Ripple used XRP in a similar manner as companies use stock. Although Ripple had publicly stated plans to develop uses for XRP beyond the ways that a company uses stock (e.g., to potentially one day serve as a bridge currency for banking transactions), Ripple ultimately primarily used XRP to fund operations and enrich its executives. Companies sell shares either through initial public offerings (“IPOs”) or seasoned equity offerings (“SEOs”) to fund operations and new investments [Ritter and Welch (2002) and DeAngelo, DeAngelo, and Stulz (2010)]. IPOs typically have lock-up provisions on these shares to limit supply and selling pressure. As previously described, Ripple took actions to lock-up XRP tokens to limit supply and selling pressure.

54. Companies also use equity or options on equity as a means to deliver substantial compensation to company executives and top managers [Murphy (2013)]. Ripple used and managed XRP in an almost identical capacity to pay Ripple executives and founders, as well as other key employees who sold significant amounts of XRP over time. Ripple employees who held XRP were incentivized to work together to increase the price of XRP and minimize downward pressure on the price of XRP in the same way that managers and executives holding company shares work to increase the share value of their company. Companies also use funding from IPOs and SEOs to fund new operations, and Ripple similarly funded the vast majority of its operations through XRP sales. Overall, in the way that XRP funded operations and incentivized executives

⁷³ See [REDACTED] (2007) for IPOs. Expertise in areas of investments and financial markets are outlined in many papers and teaching expertise in Appendix A.

and managers through XRP sales, Ripple used XRP in an extremely similar capacity as firms use publicly traded equity.

55. However, Ripple enjoyed the benefits of capital raising through sale of XRP, without the costs typically associated with such sales. XRP did not grant holders any formal voting rights in the governance of Ripple. Thus, Ripple executives did not have to give up any control of company operations as they normally would when selling dilutive shares with voting rights. Additionally, by not issuing publicly traded stock Ripple was not obligated to provide regular investor disclosures of financial records and corporate activities that companies typically make.

56. Another more peculiar Ripple practice not typically present with registered companies is Ripple's close relationship with market makers, wherein Ripple directed them to trade not only in such a way as to sell XRP to raise revenue, but also to buy XRP both to provide a price floor and to push the price upward. Companies may enter repurchase agreements to purchase shares in aftermarket trading, but not in a manner where they actively seek to set price floors at certain prices or push prices upward during news announcements. In other words, publicly traded companies are not allowed to use trading strategies to influence their stock price, but Ripple employed multiple market makers to manage the trading aspects in XRP. The increasing and high price of XRP over the period enabled Ripple executives to profit greatly.

Executed October 13, 2021



 Ph.D.

X. APPENDIX A: CURRICULUM VITAE

[REDACTED]

[REDACTED]

[REDACTED]

ACADEMIC APPOINTMENTS

Sept 2015 – Present	[REDACTED]
Sept 2012 – Aug 2015	[REDACTED]
Spring 2013	[REDACTED] at [REDACTED]
Sept 2009 – Aug 2012	[REDACTED]
July 2008 – Feb 2009	[REDACTED] at [REDACTED]
Jan 2004 – Aug 2009	[REDACTED]
Jan 2005 – May 2005	[REDACTED]
Jan 2003 – Dec 2003	[REDACTED] at [REDACTED]
May 2003 – Jul 2003	[REDACTED]
Aug 1997 – May 2003	[REDACTED]

RESEARCH INTERESTS

Cryptocurrencies, Market Manipulation, Conflicts of Interest, CDOs, MBS, Credit Ratings, International Finance, Insider Trading, Institutional and Individual Investors, Real Estate, Rational and Behavioral Pricing, Hedge Funds

PUBLISHED OR FORTHCOMING ARTICLES

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Section	Text
1	[REDACTED]
2	[REDACTED]
3	[REDACTED]
4	[REDACTED]
5	[REDACTED]
6	[REDACTED]
7	[REDACTED]
8	[REDACTED]
9	[REDACTED]
10	[REDACTED]
11	[REDACTED]
12	[REDACTED]
13	[REDACTED]
14	[REDACTED]
15	[REDACTED]
16	[REDACTED]
17	[REDACTED]
18	[REDACTED]
19	[REDACTED]
20	[REDACTED]
21	[REDACTED]
22	[REDACTED]
23	[REDACTED]
24	[REDACTED]
25	[REDACTED]
26	[REDACTED]
27	[REDACTED]
28	[REDACTED]
29	[REDACTED]
30	[REDACTED]
31	[REDACTED]
32	[REDACTED]
33	[REDACTED]
34	[REDACTED]
35	[REDACTED]
36	[REDACTED]
37	[REDACTED]
38	[REDACTED]
39	[REDACTED]
40	[REDACTED]
41	[REDACTED]
42	[REDACTED]
43	[REDACTED]
44	[REDACTED]
45	[REDACTED]
46	[REDACTED]
47	[REDACTED]
48	[REDACTED]
49	[REDACTED]
50	[REDACTED]
51	[REDACTED]
52	[REDACTED]
53	[REDACTED]
54	[REDACTED]
55	[REDACTED]
56	[REDACTED]
57	[REDACTED]
58	[REDACTED]
59	[REDACTED]
60	[REDACTED]
61	[REDACTED]
62	[REDACTED]
63	[REDACTED]
64	[REDACTED]
65	[REDACTED]
66	[REDACTED]
67	[REDACTED]
68	[REDACTED]
69	[REDACTED]
70	[REDACTED]
71	[REDACTED]
72	[REDACTED]
73	[REDACTED]
74	[REDACTED]
75	[REDACTED]
76	[REDACTED]
77	[REDACTED]
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80	[REDACTED]
81	[REDACTED]
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84	[REDACTED]
85	[REDACTED]
86	[REDACTED]
87	[REDACTED]
88	[REDACTED]
89	[REDACTED]
90	[REDACTED]
91	[REDACTED]
92	[REDACTED]
93	[REDACTED]
94	[REDACTED]
95	[REDACTED]
96	[REDACTED]
97	[REDACTED]
98	[REDACTED]
99	[REDACTED]
100	[REDACTED]

London School of Economics, Texas Christian University,

[illegible]

The diagram consists of a vertical column of 14 horizontal bars. Each bar is black with a yellow outline. The bars are arranged in a column, with the longest bar in the center and the shortest bars at the top and bottom. The lengths of the bars vary significantly, with some being very short and others being long. The bars are arranged in a column, with the longest bar in the center and the shortest bars at the top and bottom.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

XI. APPENDIX B: RECENT TESTIMONY AND COURT-FILED EXPERT REPORTS

Testimony in the last four years and court-filed expert reports

Case Name: [REDACTED]

Case No.: [REDACTED] United States District Court, Eastern District of
Arkansas, Central Division)

Date: [REDACTED]

Case Name: [REDACTED]

Case No.: [REDACTED] (United States District Court, Western District of
Louisiana, Shreveport Division)

Date: [REDACTED]

XII. APPENDIX C: LIST OF DOCUMENTS RELIED UPON

2015 [REDACTED] Larsen agreement, LARSEN-SEC-LIT-00004869-70.

2016-06-09 [REDACTED] summary of XRP purchase, RPLI_SEC 0000626-631.

2016-06-23 [REDACTED] summary of XRP purchase, RPLI_SEC 0000636-641.

2017 [REDACTED] Garlinghouse Liquidity Extraction agreement, [REDACTED] 00000673-80.

2017-02-14 [REDACTED] MM and programmatic market activity agreement,
RPLI_SEC 0899145-151.

2017-05-25 [REDACTED] Programmatic Market Activity Agreement, [REDACTED] 00017429.

2017.06.11 CL BG chat, GARL_Civil_000877-78.

2018-02-22 [REDACTED] Purchase agreement, RPLI_SEC 0233130-148.

2018-03-02 [REDACTED] amended programmatic market maker agreement, [REDACTED] 00018580.

2019-05-24 [REDACTED] Incentive agreement, RPLI_SEC 0298094-102.

2019-09-05 [REDACTED] Xrapid master agreement, [REDACTED] 0000098.

2020 and 2019 Audited Financial Statements OCR, RPLI_SEC 0920429-475.

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<https://www.prnewswire.com/news-releases/ripples-xpring-makes-1-billion-xrp-grant-to-drive-xrp-adoption-and-advance-coils-monetized-platform-for-creators-300902194.html>

Consolidated Financial Statements-as of December 31, 2019, RPLI_SEC 0301113-1160.

[REDACTED]

David Schwartz Deposition Exhibit 84, RPLI_SEC 0576405.

DeAngelo, H., DeAngelo, L., and Stulz, R. (2010). Seasoned equity offerings, market timing, and the corporate lifecycle. *Journal of Financial Economics*, 2010, vol. 95, issue 3, 275-295.

Deposition of Patrick Griffin at 75-76, June 29, 2021.

Email from Brad Garlinghouse, April 10, 2016, RPLI_SEC 0205601.

Email from Brad Garlinghouse, April 10, 2016, RPLI_SEC 0307781.

Email from Bret Allenbach, April 10, 2016, RPLI_SEC 0205602.

Email from [REDACTED] [REDACTED] June 1, 2016, GSR00004438.

Email from Chris Larsen, April 10, 2016, RPLI_SEC 0307781.

Email from [REDACTED], April 11, 2016, GSR00011984.

Email from [REDACTED], April 28, 2016, GSR00012857.

Email from Patrick Griffin, September 14, 2016, GSR00020001.

Email from Patrick Griffin, November 1, 2016, GSR00005000.

Email from [REDACTED], April 10, 2016, RPLI_SEC 0205600.

Excel Export - 2014-2016 - 2t - Liquidity extraction report, RPLI_SEC 0679467-467.

Excel_Export_2017_OLD_2h_Liquidity_extraction_report, GSR00000101.

Excel_Export_2018_2h_Ripple_Liquidity_Extraction_Report, GSR00000102

Excel_Export_2019_2h_Ripple_Liquidity_Extraction_Report, GSR00000103

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{counter_currency}+{counter_issuer}](https://data.ripple.com/v2/exchanges/{base_currency}+{base_issuer}/{counter_currency}+{counter_issuer}).

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https://data.ripple.com/v2/transactions/{transaction_hash}.

[REDACTED]

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GSR00000467A.

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<https://twitter.com/chrislarsensf/status/1308459310574264325>.

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Q1 2017 XRP Markets Report, <https://ripple.com/insights/q1-2017-xrp-markets-report>.

Q2 2017 XRP Markets Report, <https://ripple.com/insights/q2-2017-xrp-markets-report>.

Q3 2017 XRP Markets Report, <https://ripple.com/insights/q3-2017-xrp-markets-report>.

Q4 2017 XRP Markets Report, <https://ripple.com/insights/q4-2017-xrp-markets-report>.

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Ripple - 2015 FS, RPLI_SEC 0426161-187.

Ripple Financial Statements 2013 and 2014 - with notes, RPLI_SEC 0090938-962.

Ripple Financial Statements 2016 and 2017 OCR, NY-9875_T_00017816-854.

Ripple Financial Statements 2017 and 2018 OCR, RPLI_SEC 0267872-911.

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XRP Programmatic Sales Reporting FY14 to Date v2, RPLI_SEC 74559.

Any other documents or materials identified in my report, including data obtained from CoinMarketCap and CryptoTick.

XIII. APPENDIX D: IDENTIFICATION OF GSR ADDRESSES

Summary of Sources

57. The data are sourced from the 2014-2016 GSR liquidity extraction report⁷⁴ (“extraction report”), detailing GSR’s activities with respect to Client “Ripple Labs” and Bot “2t”, as well as publicly available blockchain data.⁷⁵

Context: The Liquidity Extraction Report

58. The “Daily Summary” tab of the extraction report describes daily trading activities of GSR on behalf of Ripple via Bot 2t. The “Comments” column (column S) reports, among other events, payouts to Ripple and commission fees received by GSR. Many cells in the “Comments” column contain transaction hashes on the XRP Ledger, which is inferred to correspond with the aforementioned payouts and commission fees based on other context given in the “Comments” cells and the balance changes of USD and EUR documented in columns Q and R. It is also inferred that “TPWR” as used in the “Comments” column refers to an address (or set of addresses) controlled by Ripple that receives the aforementioned payouts, and “GSR” as used in the “Comments” column refers to an address (or set of addresses) controlled by GSR that receives the aforementioned commission fees.

59. In the “Details” tab of the extraction report, sums of XRP amounts are given daily and correspond with the amount of “Total XRP” owned by GSR for the corresponding date in the

⁷⁴ Excel Export - 2014-2016 - 2t - Liquidity extraction report (Bates RPLI_SEC 0679467-467).

⁷⁵ This report used XRP blockchain data from two sources: i) an application programming interface (API) provided by Ripple (Ripple Data API v2), available at https://data.ripple.com/v2/transactions/{transaction_hash}, https://data.ripple.com/v2/exchanges/{base_currency}+{base_issuer}/{counter_currency}+{counter_issuer} and <https://data.ripple.com/v2/accounts/{address}/exchanges>; and ii) the full history of the XRP Ledger for use in Google’s BigQuery data warehouse, available at <https://github.com/WietseWind/fetch-xrpl-transactions>. The latter source is provided by Wietse Wind, founder of XRPL Labs (<https://wietse.com/bio>).

“Daily Summary” tab;⁷⁶ it is inferred that addresses listed in column A of the “Details” tab are GSR-controlled. In particular, it is inferred that [REDACTED]⁷⁷ is a GSR-controlled address.

60. Descendants of a certain address ‘N’ are defined to be any address ‘M’ such that ‘N’ activated ‘M’, where activation is meant in the conventional sense that ‘M’ first received XRP from ‘N’.⁷⁸ A genealogy of address ‘N’ is the recursively-generated tree with root ‘N’ and branches given by the descendants of ‘N’, the descendants of the descendants of ‘N’, and so on. A depth-first search is performed using XRPScan’s API⁷⁹ to construct the genealogy of [REDACTED]. This genealogy tree has depth four, i.e., there are at most four edges between the root and any leaf.

Identification of GSR Addresses Used in Figures 1-4

61. The term “GSR” as used in Figures 1-4 refers to a set of addresses whose identification is explained in this section. Every string in the “Comments” column in the “Daily Summary” tab of the extraction report with more than 60 characters was extracted and, after removing punctuation and whitespace characters, verified to be a valid transaction hash on the XRP Ledger, with one exception.⁸⁰ For each such transaction hash, the date of the transaction was retrieved as well as the associated sending address from the aforementioned BigQuery tables. The resulting set of sending addresses (“candidate wallets”) was analyzed to determine the number of transactions, out of those listed in the “Comments” column, each candidate wallet initiated, as well as the dates of the first and last instances of such transactions. The results can be seen in Table 4.

⁷⁶ For example, the amount in cell F43, “Details” tab, corresponding to December 1, 2014, matches the amount in cell G3, “Daily Summary” tab, also corresponding to December 1, 2014.

⁷⁷ [REDACTED] is an abbreviation for XRP address rPy[REDACTED].

⁷⁸ <https://xrpl.org/accounts.html#creating-accounts>.

⁷⁹ <https://api.xrpscan.com/api/v1/account/{address}/activations>.

⁸⁰ The exception occurs in cell S705, “Daily Summary” tab, with the string “<https://blockchain.info/tx/e5b6ba00fe8c1754bd0e36eecbad5456473eaf61965737d8c0c7b16a55cef2dc>”, corresponding to a transaction made by GSR on the Bitcoin blockchain regarding a purchase of BTC.

Table 4 – Activity of Candidate Wallets.

This table provides the summary of the activity of the candidate wallets as discussed in Appendix D. The 195 transaction hashes identified in the “Comments” column of the extraction report were attributed to the candidate wallet that initiated the transaction, and the set of such transactions for each candidate wallet is described.

Address	Number of Transactions	Date of First Transaction	Date of Last Transaction
[REDACTED]	2	November 1, 2016	December 2, 2016
	6	February 15, 2016	November 1, 2016
	3	March 11, 2015	March 11, 2015
	1	March 20, 2015	March 20, 2015
	14	September 10, 2015	November 5, 2015
	20	January 14, 2015	August 21, 2015
	1	March 17, 2015	March 17, 2015
	117	August 21, 2015	January 21, 2017
	1	March 29, 2016	March 29, 2016
	1	August 18, 2016	August 18, 2016
	1	September 28, 2016	September 28, 2016
	23	February 24, 2015	March 19, 2015
	5	March 11, 2015	March 11, 2015

62. The only candidate wallets that made transactions in 2016 are [REDACTED]

[REDACTED] The former two, [REDACTED] and [REDACTED], are owned by Poloniex and Bitstamp respectively,⁹⁴ and their presence in the candidate wallet set is a result of GSR buying or selling XRP through the respective off-chain digital asset platform.⁹⁵ The fourth address, [REDACTED] is used by GSR to collect commission fees and corresponds with “GSR” as used in the “Comments” column

81 [REDACTED]
 82 [REDACTED]
 83 [REDACTED]
 84 [REDACTED]
 85 [REDACTED]
 86 [REDACTED]
 87 [REDACTED]
 88 [REDACTED]
 89 [REDACTED]
 90 [REDACTED]
 91 [REDACTED]
 92 [REDACTED]
 93 [REDACTED]

⁹⁴ Identities sourced from <https://bithomp.com/explorer/rDCgaaSBAWYfsxUYhCk1n26Na7x8PQGmkq> and <https://bithomp.com/explorer/rGFuMiw48HdbnrUbKRYuitXTmfrDBNTCnX>.

⁹⁵ For example, line 3, cell S705, “Daily Summary” tab.

of the “Daily Summary” tab of the extraction report. The fifth address, [REDACTED], is unidentified, but it can reasonably be excluded from consideration since it was responsible for only one transaction mentioned in the “Comments” column; moreover, this single transaction corresponds to an “order from Patrick to sell... XRP for... [REDACTED].”⁹⁶ The sixth address, [REDACTED] is the recipient of “TPWR” payouts throughout the extraction report; the single transaction appearing in the “Comments” column for which [REDACTED] is responsible corresponds to an event where GSR “received 50k from TPWR for buying,”⁹⁷ which explains its presence in the candidate wallet set. The final candidate wallet of the six that made at least one transaction in 2016, [REDACTED] was responsible for by far the greatest number of transactions, as seen in Table 4. It is possible to conclude that [REDACTED] is GSR-controlled and is responsible for the aforementioned payout and commission fee transactions. Moreover, it can be inferred that, as far as the extraction report indicates, [REDACTED] is the only GSR-controlled wallet with payout responsibilities in 2016.

63. A table of transactions was constructed in which either the sending address or the receiving address is a candidate wallet; the subset of this table of successful transactions⁹⁸ was retrieved in which either the sending address or the receiving address is [REDACTED]. All such transactions in which the *receiving* address is [REDACTED] are of the Payment type, none of which are transfers of XRP.⁹⁹ Of the 109 addresses that make Payments to [REDACTED] at least once in 2016, all but four are members of the [REDACTED] genealogy, so it is inferred that these 105 addresses are GSR-controlled. The remaining four addresses that are not members of the genealogy are [REDACTED] [REDACTED]

⁹⁶ Cell S630, “Daily Summary” tab.

⁹⁷ Cell S671, “Daily Summary” tab.

⁹⁸ Encoded as “tesSUCCESS” on the XRP Ledger.

⁹⁹ This, among other factors, suggests that other addresses are exchanging XRP for non-XRP assets (e.g., USD) on the XRP Ledger on behalf of [REDACTED] which in turn uses the non-XRP assets for payouts and commission fees.

████ and █████ These were previously identified as Poloniex, Bitstamp, “TPWR,” and “GSR” (the recipient of commission fees), respectively.

64. The 105 addresses that make at least one Payment to █████ in 2016 and which are not Poloniex, Bitstamp, “TPWR,” or “GSR,” as discussed above, constitute the set of addresses termed “GSR” in Figures 1-4.

XIV. APPENDIX E: METHODOLOGY FOR BLOCKCHAIN ANALYSIS AND FLOW OF XRP FROM LARSEN AND GARLINGHOUSE ADDRESSES

A. Methodology for Blockchain Tracing

65. The blockchain tracing analysis starts with i) lists produced to the SEC that identify XRP addresses that are under Larsen's or Garlinghouse's control¹⁰⁰ and ii) publicly available XRP blockchain data which includes the full history of every transaction.¹⁰¹ From the lists produced to the SEC, there are 28 Larsen-identified addresses and 19 Garlinghouse-identified addresses. Then, the "first-in, first-out" (FIFO) forensic accounting methodology is applied to trace the flow of XRP out of those Larsen-identified and Garlinghouse-identified addresses. The XRP from these addresses is traced until one of the following scenarios: i) XRP reaches a "GSR-associated" address,¹⁰² ii) XRP reaches an "identified address" such as a digital asset exchange or other known entities on the XRP blockchain,¹⁰³ iii) XRP reaches a non-identified address with over 1,000 transactions (labeled as "high-activity address"),¹⁰⁴ iv) XRP is returned to one of the Larsen-

¹⁰⁰ List of Chris Larsen Addresses (Bates LARSEN_NAT 00000102); Garlinghouse Subpoena Response Spreadsheet, "Request 4" Tab (Bates GARL00000001-1); Garlinghouse XRP Award Addresses (Bates GARL00000002-9).

¹⁰¹ This report used XRP blockchain data from two sources: i) an application programming interface (API) provided by Ripple (Ripple Data API v2), available at https://data.ripple.com/v2/transactions/{transaction_hash} and ii) the full history of the XRP Ledger for use in Google's BigQuery data warehouse, available at <https://github.com/WietseWind/fetch-xrpl-transactions>. The latter source is provided by Wietse Wind, founder of XRPL Labs (<https://wietse.com/bio>).

¹⁰² "GSR-associated" addresses were identified from liquidity extraction reports produced to the SEC (Bates RPLI_SEC 0679467-467, GSR00000102, GSR00000103, GSR00000441, GSR00000442, GSR00000444, GSR00000446, GSR00000447, GSR00000448, GSR00000449, GSR00000452, GSR00000453, GSR00000454, GSR00000455, GSR00000460, GSR00000461, GSR00000462, GSR00000463, GSR00000464, GSR00000465, GSR00000466, GSR00000467). More details can be found in Appendix D.

¹⁰³ The identities of certain addresses on the XRP blockchain can be derived from publicly available sources online. These include data from XRP blockchain explorers (blockchain explorers enable users to view blockchain data from a web interface), e.g., bithomp.com which lists the identity behind certain XRP addresses, and from social media sites such as twitter.com.

¹⁰⁴ Addresses that have had over 1,000 transactions and were labelled "high-activity" because it is possible that they are digital asset platforms that have not been identified.

identified or Garlinghouse-identified addresses, v) less than 5 XRP is flowing out of an address,¹⁰⁵ or vi) XRP is transferred over 13 hops.¹⁰⁶

66. For the purposes of this report, funds are only traced if they involve “Payment” and “AccountDelete” transactions of XRP. Payment transactions entail direct transfers of a certain asset from an address to another address. AccountDelete transactions entail a deletion of an address (its transaction history remains in the ledger history) and a transfer of all assets in that address to another address. There exist Payment transactions of other assets, such as USD, which are excluded from this analysis. Other types of transactions excluded for the purpose of this tracing analysis are other XRP balance-affecting changes on the ledger, such as: i) “offers” – buy/sell offers exchanging XRP for another asset at a given exchange rate, ii) “checks” – IOUs that can be cashed by the receiving party up to an expiration time and iii) “payment channels” – safeboxes where XRP is stored and can be retrieved by the receiving party. To exclude the above balance-affecting transactions means that this report assumed such transactions or changes did not actually occur.

B. Flow of XRP from Larsen and Garlinghouse Addresses

67. This section provides a summary of the flow of XRP out of Larsen’s and Garlinghouse’s identified addresses based on i) direct transfers (1 hop only) and ii) tracing XRP over multiple hops.

¹⁰⁵ Tracing was not done for transactions less than 5 XRP because: i) tracing minute amounts is computationally intensive and does not impact the results significantly, so a lower bound is necessary, and ii) 5 XRP has typically been the largest fee that has been charged in the course of a transaction.

¹⁰⁶ Due to the exponential growth in the number of addresses and transactions to trace for each additional hop, the analysis stopped at 13 hops for the Larsen-identified addresses. Less than 20,000 XRP was traced that went beyond 13 hops before reaching one of the criteria above, representing less than 0.001% of the XRP flowing out of Larsen-identified addresses. XRP flowing out of Garlinghouse-identified addresses was not transferred over two hops before it hit one of the other criteria above.

68. As noted in the tracing methodology described above, the XRP flowing from the identified addresses could have been transferred to other XRP addresses up to 13 times before reaching an identified destination, such as a digital asset platform. Hence, it is possible that the ownership of the XRP changed hands between when it left one of the identified addresses and when it reached a digital asset exchange, e.g., through an over-the-counter (OTC) sale, as an exchange for a good or service, as an investment or as a donation. Indeed, this happened with some of Larsen's XRP since, as alluded to the main report, he sold XRP in OTC sales and to friends who themselves could have subsequently sold their XRP on digital asset platforms. In general, fewer transfers of a digital asset provides more confidence that the digital asset is still in the possession of the original holder. As such this Appendix provides an accounting of funds both i) directly transferred over 1 hop from the identified addresses and ii) transferred over multiple hops.

69. In general, the point of the tracing is not to pinpoint where all the funds went and exactly when they were transferred to other parties. Nevertheless, it is possible to infer that significant amounts of XRP originating from Larsen's and Garlinghouse's identified addresses were transferred and traced to GSR as well as digital asset platforms where they could have been sold. Whether or not the traced XRP was actually sold at digital asset platforms would require having detailed account data from all digital asset platforms where XRP was traced to have reached, which was not available at the time of this report's writing.

Direct Transfers of XRP

Figure 13 – Visualization of Direct transfers from the Larsen-Identified Addresses.

This figure illustrates the flow of funds from Larsen’s identified XRP addresses, from left to right. The thickness of each category denotes the relative size, in XRP, of funds traced. The largest recipient of funds was GSR. “Other Addresses” are addresses that were not identified.

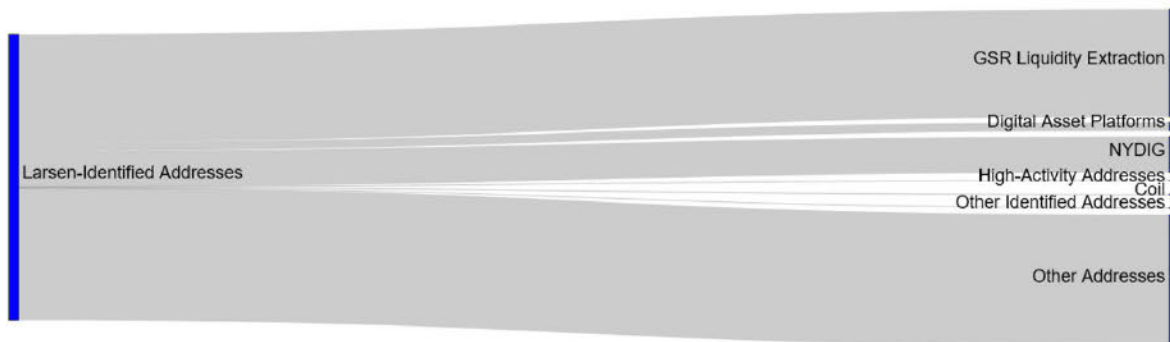


Table 5 – Direct Transfer Amounts from the Larsen-Identified Addresses.

This table provides the summary of blockchain analysis of the flow of funds out of Larsen’s identified addresses via 1 hop only. The US dollar (USD) equivalent value shown is the value of the XRP at the time that it left one of the Larsen-identified addresses. Analysis is as of December 22, 2020.

Address Type	XRP Transferred (million)	USD Equivalent (million)
GSR Liquidity Extraction	1,496	495
NYDIG ¹⁰⁷	500	117
Bitstamp (Digital Asset Platform)	87	51
Coinbase (Digital Asset Platform)	27	7
Coil (Micropayments Start-up Funded by Ripple) ¹⁰⁸	17	5
Kraken (Digital Asset Platform)	9	3
Other Identified Addresses (Internet Archive & XRP Tip Bot)	0.3	0.1
Other Addresses (not Identified)	1,840	394
Total	3,976	1,072

Values rounded to the nearest 1 million XRP and 1 million USD, except for “Other Identified Addresses” which is rounded to the nearest hundred thousand.

¹⁰⁷ NYDIG is a technology and financial services firm providing digital asset services to institutions and private clients (<https://nydig.com/>); Larsen publicly disclosed that he moved XRP to NYDIG in September 2020 (<https://twitter.com/chrislarsensf/status/1308459310574264325>).

¹⁰⁸ <https://www.prnewswire.com/news-releases/ripples-xpring-makes-1-billion-xrp-grant-to-drive-xrp-adoption-and-advance-coils-monetized-platform-for-creators-300902194.html>.

Figure 14 – Visualization of Direct transfers from the Garlinghouse-Identified Addresses.

This figure illustrates the flow of XRP from Garlinghouse’s identified XRP addresses. The largest flows were to GSR. Analysis is as of December 22, 2020.

**Table 6 – Direct Transfer Amounts from the Garlinghouse-Identified Addresses.**

This table provides the summary of blockchain analysis of the flow of funds out of Garlinghouse’s identified addresses via 1 hop only. The US dollar (USD) equivalent value shown is the value of the XRP on the date that it left one of the Garlinghouse-identified addresses. Analysis is as of December 22, 2020.

Address Type	XRP Transferred (million)	USD Equivalent (million)
GSR Liquidity Extraction	167	104
Ripple	62	25
Bitstamp (Digital Asset Platform)	36	21
Bitfinex (Digital Asset Platform)	2	1
Coinbase (Digital Asset Platform)	0.3	0.1
Kraken (Digital Asset Platform)	0.2	0.1
Other Addresses (not Identified)	110	35
Total	377	186

Values rounded to the nearest 1 million XRP and 1 million USD, except for Coinbase and Kraken which are rounded to the nearest hundred thousand.

Tracing of XRP over Multiple Hops

Figure 15 – Visualization of Flow of Funds from the Larsen-Identified Addresses.

This figure illustrates the flow of funds from Larsen’s identified XRP addresses, from left to right. The thickness of each category denotes the relative size, in XRP, of funds traced. The largest recipient of funds was GSR, followed by digital asset platforms.

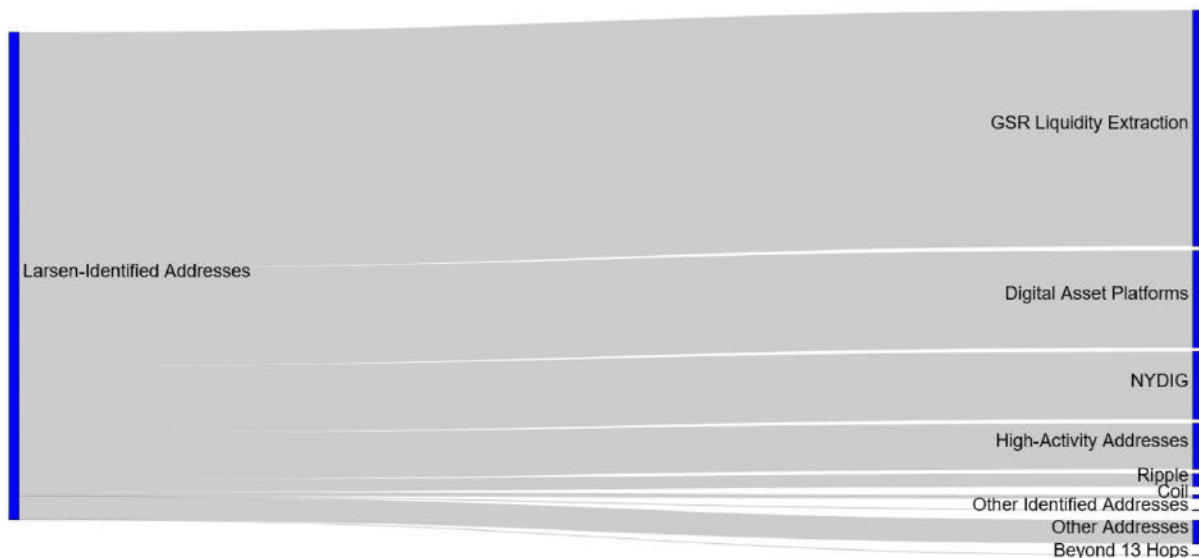


Table 7 – Value of XRP Traced from the Larsen-Identified Addresses.

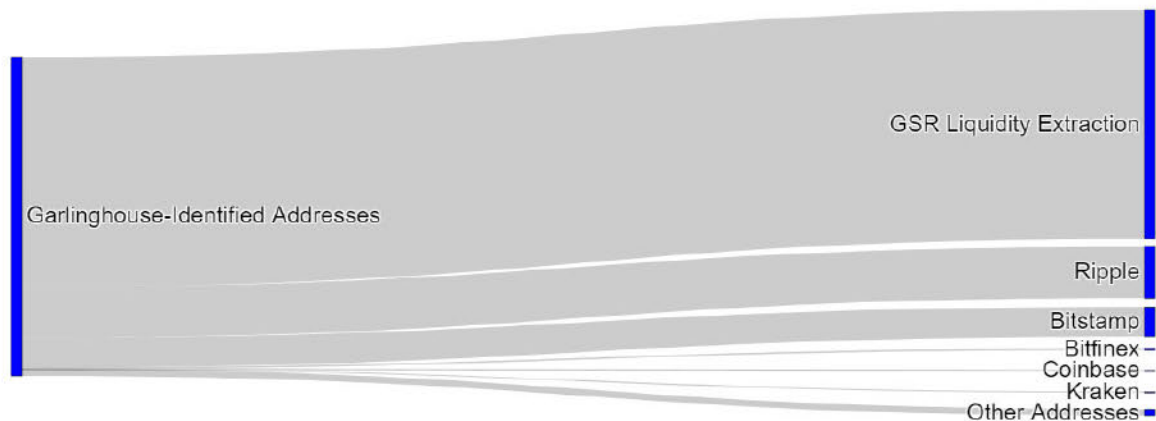
This table provides the summary of blockchain analysis of the flow of funds out of Larsen’s identified addresses. The US dollar (USD) equivalent value shown is the value of the XRP on the date that it left one of the Larsen-identified addresses. Analysis is as of December 22, 2020.

Address Type	XRP Traced (million)	USD Equivalent (million)	Weighted Average Number of Hops
GSR Liquidity Extraction	1,926	599	1.5
Digital Asset Platforms	794	244	2.8
NYDIG ¹⁰⁹	550	131	1.1
High-Activity (Addresses with > 1,000 Transactions)	377	54	3.2
Ripple	106	27	2.0
Coil (Micropayments Start-up Funded by Ripple) ¹¹⁰	30	5	1.9
Other Identified Addresses (e.g., Internet Archive)	1.0	0.1	4.8
Other Addresses (not Identified) ¹¹¹	193	13	2.6
Total	3,976	1,072	1.9

Values rounded to the nearest 1 million XRP and 1 million USD, except for “Other Identified Addresses” which is rounded to the nearest hundred thousand.

Figure 16 – Visualization of Flow of Funds from the Garlinghouse-Identified Addresses.

This figure illustrates the flow of XRP from Garlinghouse’s identified XRP addresses. The largest flows were to GSR. Analysis is as of December 22, 2020.

**Table 8 – Value of XRP Traced from the Garlinghouse-Identified Addresses.**

This table provides the summary of blockchain analysis of the flow of funds out of Garlinghouse’s identified addresses. The US dollar (USD) equivalent value shown is the value of the XRP on the date that it left one of the Garlinghouse-identified addresses. Analysis is as of December 22, 2020.

Address Type	XRP Traced (million)	USD Equivalent (million)	Weighted Average Number of Hops
GSR Liquidity Extraction	277	139	1.4
Ripple	62	25	1.0
Bitstamp (Digital Asset Platform)	36	21	1.0
Bitfinex (Digital Asset Platform)	2	1	1.0
Coinbase (Digital Asset Platform)	0.3	0.1	1.0
Kraken (Digital Asset Platform)	0.2	0.1	1.0
Other Addresses (not Identified)	0.0001	0.0001	1.0
Total	377	186	1.2

Values rounded to the nearest 1 million XRP and 1 million USD, except for Coinbase and Kraken which are rounded to the nearest hundred thousand and “Other Addresses” which is rounded to the nearest hundred.

¹⁰⁹ NYDIG is a technology and financial services firm providing digital asset services to institutions and private clients (<https://nydig.com/>); Larsen publicly disclosed that he moved XRP to NYDIG in September 2020 (<https://twitter.com/chrislarsensf/status/1308459310574264325>).

¹¹⁰ <https://www.prnewswire.com/news-releases/ripples-xpring-makes-1-billion-xrp-grant-to-drive-xrp-adoption-and-advance-coils-monetized-platform-for-creators-300902194.html>.

¹¹¹ The XRP that was traced beyond 13 hops is included in “Other Addresses (not identified)”.

Exhibit 2

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

EXPERT REPORT OF 

OCTOBER 4, 2021

*U.S. Securities and Exchange Commission v. Ripple Labs, Inc., Bradley Garlinghouse, and
Christian A. Larson*

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1. Introduction

1.1 Assignment

1. I have been engaged by the U.S. Securities and Exchange Commission (“SEC”) to provide expert testimony in the matter of *U.S. Securities and Exchange Commission v. Ripple Labs, Inc., et al.*, pending in the United States District Court for the Southern District of New York.

2. The SEC retained me to independently analyze and render opinions on the perspective of a reasonable purchaser of XRP on Ripple’s statements, actions, and product offerings.¹ The purchasers I am considering in this matter primarily include individuals, institutional investors, and financial services companies. The purchases of XRP were made through trades on the XRP Ledger, on digital asset trading platforms, and in private over-the-counter (OTC) transactions throughout the period that Ripple offered XRP for sale from 2013 to the filing of the SEC’s Complaint on December 22, 2020 (“Issuance Period”). My report is limited to the Issuance Period.

1.2 Qualifications

3. [REDACTED]
[REDACTED] assisting various government agencies with investigating possible securities violations and financial fraud in the digital assets space. This experience includes analyzing fraudulent blockchain investment schemes, tracking money laundering on the blockchain, and discovering and proving manipulative trading activity related to digital assets. [REDACTED]
[REDACTED]

¹ I also was retained to provide analysis and/or a rebuttal to Defendants’ expert reports, if and as needed.

[REDACTED]

[REDACTED]

[REDACTED] I have provided expert consulting in blockchain, digital assets, and forensic data analytics for private companies, federal agencies, and foreign securities regulators. My work providing expert consulting related to digital assets has ranged from examining documents and representations related to initial coin offerings to providing detailed analysis of blockchain data, including flows of funds on the blockchain, smart contract activity, on-blockchain trading data, and decentralized finance platforms. I have also developed and managed the development of scripts and algorithms to process and analyze large collections of blockchain data.

4. In addition, I am the Founder and Managing Director of an investment partnership, [REDACTED] began operating in [REDACTED] and legally formed in [REDACTED] was originally primarily focused on making investments in the digital asset space, and since its founding I have profitably allocated capital to many digital asset investments. In addition to analyzing hundreds of companies, projects, coins, and tokens in the digital asset space, I have developed and executed successful cryptocurrency arbitrage strategies. These activities have given me an intimate familiarity with many different participants in the digital asset space including retail users and traders, institutional investors, cryptocurrency miners, software developers, entrepreneurs, and venture capital investors. I have practical firsthand experience with using blockchains as well as the trading platforms, software platforms, and institutional products built on top of them. In addition to my experience in digital asset investments, I have [REDACTED] of experience evaluating and investing in companies, public equities, commodities, real estate, bonds, currencies, and derivatives of those asset classes. I

have managed automated quantitative strategies as well as discretionary investment strategies across many different asset classes, with emphasis on equities and equity options. As part of this work, I routinely analyze the investment thesis – that is, the relative risks and rewards of an investment and the circumstances in which the investment makes the most sense – for hundreds of investments, including digital assets. I received a [REDACTED]

[REDACTED], and an [REDACTED]

5. Appendix A to this report contains my curriculum vitae with more details about my professional background. [REDACTED] [REDACTED]

[REDACTED] I have been assisted by additional staff members of Integra to analyze data and documents related to this matter. My conclusions are my own and are based on my independent analysis and review of their work. Integra is compensated by the SEC at a rate of \$520 per hour (Engagement Director), \$330 per hour (Data Scientist), and \$235 per hour (Data Analyst) for their work.

1.3 Documents Considered

6. Appendix B to this report contains a complete list of documents and data sources I relied upon to complete the analysis in this report. Included in that list are public statements and press releases from Ripple and company insiders and transaction data related to what Ripple advertises as its core software product—a product for financial institutions Ripple at some point called On-Demand Liquidity (“ODL”). I also reviewed and considered other documents and data sources, including trading data, blockchain data, technical documentation, and social media posts from websites like Twitter, Reddit, Quora, Bitcoin Talk, and XRP Chat.

2. Summary of Findings

7. Based on my review and analysis of Ripple's public statements made throughout the Issuance Period, documents, and design decisions made by Ripple and/or its founders, and on my professional experience in the digital asset space, I find the following:

8. The design of XRP as a fixed-supply coin², as well as statements made by Ripple, were consistent with promoting an investment use case for XRP. Based on my experience in the digital asset space, I conclude that a reasonable purchaser would have had an expectation of future profit derived from the efforts of Ripple. Specifically, purchasers would have expected or hoped to profit by later re-selling their XRP at a higher price on a secondary market after XRP substantially increased in value. Due to basic supply and demand dynamics, any asset that has a variable price but fixed quantity tends to increase in value with increased demand for that asset. Therefore the design of the XRP blockchain using a fixed-supply coin for its native asset created a direct financial link between the price of XRP and the success of Ripple's efforts to develop and market software products that could gain users and attract high transaction volumes in XRP. Ripple also promoted a variety of its achievements, initiatives, and strategy that created a well-understood bullish thesis for the price of XRP and encouraged speculative investment flows into the digital asset. This promotional activity included advertising new partnerships with financial institutions, highlighting the experience and expertise of Ripple's team members, making public statements about why XRP was poised to increase in price, publishing positive commentary about the future growth trajectory of Ripple's products, and describing the plans for developing

² Consistent with the standard usage in the crypto space, in this report 'coin' denotes the native or fundamental digital asset of a blockchain, e.g. XRP is a coin and the native asset for the XRP Ledger, and 'token' refers to a digital asset that is represented on a blockchain but that is not the native asset of that blockchain, e.g. COMP is a token on the Ethereum blockchain. In my report, my use of the terms 'coin' and 'token' is not intended to supply an opinion that the digital asset has the characteristics of a currency or any other particular classification of asset.

the XRP ecosystem³. Although Ripple’s development of the blockchain and broader XRP ecosystem, along with its promotion of the bull case for buying XRP, would not guarantee a profit, it would create the hope that a purchaser could passively earn profits by owning XRP while Ripple took steps to increase the value of the coin. In my experience as an investor and close observer of the digital asset space, the statements, actions, background, and competence of the founders and companies that create and support a blockchain project are extremely important to the decision-making process of purchasers of digital assets.

9. Based on Ripple’s public statements, the design of XRP as a fixed-supply variable-price coin, and the creation of the XRP escrow accounts, I also conclude that there are certain elements in Ripple’s and its founders’ design of XRP, the XRP Ledger, and a variety of software products that appealed more to a purchaser of XRP interested in making a profit than to financial institutions seeking to embrace Ripple’s stated vision of utilizing XRP as a bridge asset for cross-border asset transfers. Financial institutions desiring a solution for international wire transfers and other cross-border payment mechanisms would be better served by a variable-supply, fixed price solution, such as offered by fiat currency. Using XRP to complete cross-border payments requires two exchange transactions (from the source currency to XRP and from XRP to the destination currency) and involves paying the fees and trading losses (i.e. “slippage”⁴) associated with both of those transactions. If both trades are not conducted simultaneously or if an institution needs to carry an inventory of XRP, this approach also

³ In this report “ecosystem” refers broadly and collectively to all the software, people, and organizations who are involved with a blockchain project, such as retail investors, institutional investors, miners, software developers, software products, companies, merchants, trading platforms and market makers.

⁴ “Slippage” is a trading term referring to trading losses incurred from executing trades against a bid-ask spread; it is the difference between the displayed market price of a trade and the actual price upon which the trade was executed. Slippage is generally higher i) in less liquid markets and ii) when larger trades are executed.

involves tying up capital in a volatile asset with an uncertain future price that has nothing to do with the source or destination currencies intended to be transmitted abroad.

3. Background

3.1 Digital Assets

10. Digital assets, such as XRP, are assets wherein transactions or account balances involving those assets are recorded and maintained on digital ledgers using blockchain technology. Cryptographically-signed transactions denominated in these digital assets are validated and grouped together into “blocks,” or in the case of XRP these blocks are called “ledgers.” A “blockchain,” also called the “XRP Ledger” in the case of the digital ledger on which XRP balances and transactions are maintained and recorded, comprises a chronological collection of successive blocks that have been accepted by a software-defined consensus mechanism. This blockchain data is typically stored for the collective use of anyone who wishes to interact with the data or transaction history associated with a given digital asset. The primary digital asset that is recorded on a given blockchain is referred to as that blockchain’s “native asset.” For example, Bitcoin (“BTC”) is the native asset of the Bitcoin blockchain and XRP is the native asset of the XRP Ledger.

11. Each blockchain has different fundamental characteristics related to the extent to which it is: 1) decentralized, i.e. controlled, operated, and governed by a distributed collection of independent people and organizations; 2) permissioned, i.e. restricted or freely accessible for use by any person or organization; 3) secure, i.e. resistant to fraudulent or invalid transactions. The transaction speed and capacity of the blockchain, among other properties, also differ from one blockchain to another as a result of making tradeoffs in this design space.

12. Blockchains may provide computational features beyond just the record-keeping function of maintaining a digital asset ledger. For example, the Ethereum blockchain includes “smart contracts” which are software-defined applications with code stored directly on the blockchain. Smart contracts contain instructions for a wide range of tasks, including automating financial transactions between parties, storing data on the blockchain, and defining new digital tokens which are themselves digital assets. The XRP blockchain includes additional functionality for “IOUs”, which are liabilities issued by private third-party entities (referred to by Ripple as “gateways”) and denominated in a wide range of underlying fiat currencies or digital assets.

3.2 Trading Platforms

13. Digital assets are often traded in public marketplaces, also called “exchanges” or “trading platforms.” Some popular examples of digital asset trading platforms are Coinbase, FTX, and Bitstamp. On these platforms, digital assets may be traded for fiat currencies (i.e. government-issued currencies such as the U.S. Dollar or the British Pound) or other digital assets. “Centralized exchanges” carry out this trading task on a private server, without recording trades directly on the blockchain. “Decentralized exchanges,” on the other hand, record all trades directly on the blockchain, making every trade publicly viewable. In the case of the XRP blockchain, both types of trading platforms, along with alternate trading venues such as futures and derivatives markets, are components of the overall ecosystem.

4. Ripple Platform Overview

4.1 History of Ripple, XRP, and Product Offerings

14. The predecessor to Ripple was founded in 2012 as a technology company in the blockchain space. Also in 2012, the XRP blockchain was released to the public and went live for

the first time with a maximum supply of 100 billion XRP created.⁵ Of this 100 billion XRP, 80 billion XRP was distributed to Ripple and 20 billion XRP was distributed to several key individuals.⁶

15. In the early years, Ripple released products geared towards prospective individual users and traders. In 2013, Ripple released an iPhone app called the Ripple Client which enabled individuals to send and receive XRP as well as other assets such as BTC and USD.⁷ After several upgrades, Ripple Client was rebranded in 2014 as Ripple Trade, with Ripple recognizing that “Trading has rapidly become the number one use case of Ripple.”⁸ This trading predominantly involved buying and selling XRP, as can be seen in Figure 1 which shows that the top three markets on the XRP Ledger circa February 2014 were the XRP/USD, XRP/CNY and XRP/BTC trading pairs. The screenshot shown in Figure 1 is from the RippleCharts product that Ripple “revamped” in February 2014, which at the time provided detailed trading data including real-time XRP prices and a real-time feed of trades executed. When the revamp was announced, Ripple also noted that it sought to design its products around the trading use case for XRP, noting, “To revamp RippleCharts from the inside out, we solicited feedback from Ripple’s lively **trading** community. [emphasis added]”⁹

⁵ Ripple. Q3 2019 XRP Markets Report (2019). <https://ripple.com/insights/q3-2019-markets-report/>.

⁶ Ripple. Answer of Defendant Ripple Labs, Inc. to Plaintiff’s First Amended Complaint (2021). Page 16, paragraph 46.

⁷ Ripple. Inside the Code of Ripple Client: the Newest Mobile Payment App for iOS (2013). <https://ripple.com/insights/inside-the-code-of-ripple-client-the-newest-mobile-payment-app-for-ios/>.

⁸ Ripple. Introducing the New Ripple Trade Client (2014). <https://ripple.com/insights/introducing-the-new-ripple-trade-client/>.

⁹ Ripple. RippleCharts Revamp (2014). <https://ripple.com/insights/ripplecharts-revamp/>.

Figure 1. “Top Markets” from RippleCharts circa February 2014¹⁰

16. Starting in 2015 and over the following six years Ripple rolled out a series of software products aimed at facilitating the transfer of funds for institutional financial organizations. In October 2015 Ripple introduced the Interledger Protocol, a product that aimed to facilitate “efficient payments across payment networks” among banks and other financial institutions.¹¹ Next, the RippleNet Committee was announced, laying the foundation for various products geared towards global payments problems.¹² In 2017 xCurrent was launched as the common messaging technology for RippleNet and utilized the Interledger Protocol¹³. xVia was launched the same year to provide an API¹⁴ for payment originators to interface with RippleNet banking partners. In October 2018 xRapid was launched. Later re-named to On Demand

¹⁰ *ibid.*

¹¹ Ripple. Implementing the Interledger Protocol in Ripple (2015). <https://ripple.com/insights/implementing-the-interledger-protocol/>.

¹² Ripple. RippleNet. <https://ripple.com/rippletnet/>. See also Ripple’s “Our Story” page at <https://ripple.com/company/> and additional background about the RippleNet Committee at <https://ripple.com/rippletnet-committee/>.

¹³ Ripple. xCurrent (2017). https://ripple.com/files/xcurrent_brochure.pdf.

¹⁴ API stands for “application programming interface” which is a set of standards or protocol that enables computers or software systems to communicate with each other through a shared interface.

Liquidity (ODL), the xRapid product was designed to facilitate cross-border transactions between financial institutions by using XRP as a bridge currency.¹⁵

4.2 Overview of ODL Usage

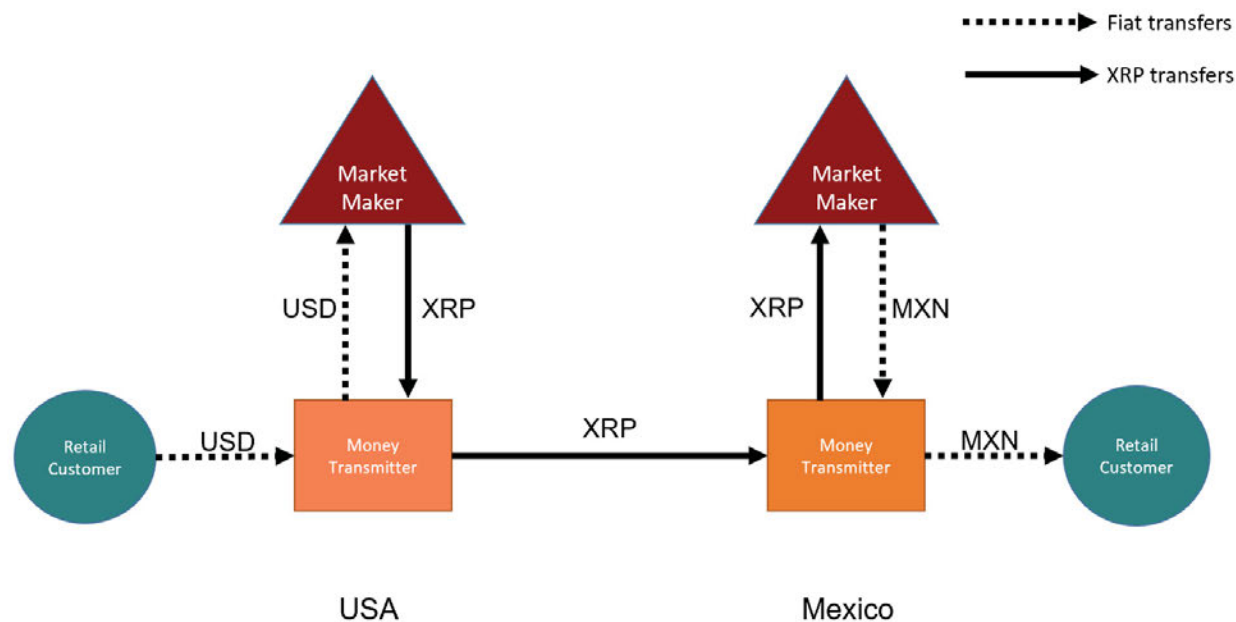
17. ODL, originally called xRapid, has been a cornerstone of an effort by Ripple to create a commercially successful product that utilized XRP as a required asset.¹⁶ ODL was intended to facilitate cross-border transactions between money transmitters' domestic and foreign accounts by coordinating a three-step process: 1) trading XRP in exchange for the source fiat currency (i.e., buying XRP and selling the source currency), 2) transferring XRP from the source country to the destination country on the XRP Ledger, and 3) trading XRP in exchange for the destination currency (i.e., selling XRP and buying the destination currency).

18. The overall effect of these steps is to exchange the source currency for the destination currency and to send money from the source country to the destination country. Figure 2 illustrates the flow of assets involved with an ODL transaction. In this example a money transmitter uses ODL to complete a remittance payment from the United States to Mexico on behalf of retail customers. The money transmitter trades on a trading platform with a market maker in each country.

¹⁵ Ripple. Ripple Highlights Record Year, xRapid Now Commercially Available (2018). <https://ripple.com/insights/ripple-highlights-record-year-xrapid-now-commercially-available/>.

¹⁶ Ripple. On Demand Liquidity (2021). <https://ripple.com/rippletnet/on-demand-liquidity/>.

Figure 2. Example of ODL Transaction for Remittance Payment Between USA and Mexico.



19. Ripple promoted the growth of ODL users and transaction volumes. Figure 3 shows an excerpt from a 2019 announcement, where Ripple highlights growing usage trends for ODL.¹⁷

Figure 3. Excerpt from November 6, 2019 Announcement on the Ripple Website.

In less than a year since the commercialization of ODL, we have seen tremendous growth and customer interest with two dozen customers signed on to use the product. Some of the notable customers committed to using ODL include MoneyGram, goLance, Viameerica, FlashFX and Interbank Peru. There have been more than 7x the number of transactions using ODL from the end of Q1 to the end of October.

20. The transaction volumes processed through ODL rose very quickly throughout the second half of 2019 and the first half of 2020, and nearly all this growth was due to a single customer, MoneyGram. Ripple took an ownership stake in MoneyGram in 2019, and the two companies put an agreement in place for MoneyGram to use ODL for some of its cross-border

¹⁷ Ripple. RippleNet Growth: Announcing More Than 300 Customers (2019). <https://ripple.com/insights/ripplet-growth-announcing-more-than-300-customers/>.

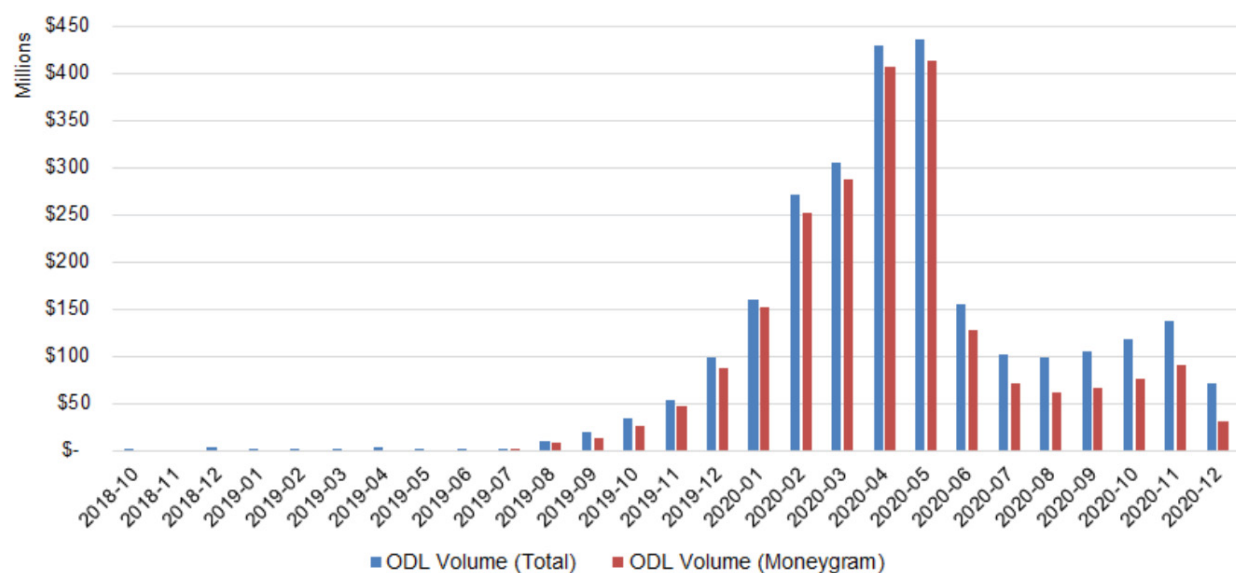
transactions. Ripple subsidized MoneyGram's ODL transaction activity with payments in XRP that began at 2.5% of MoneyGram's ODL transaction volumes, with different subsidy levels at different volume tiers. This initial percentage depended on achieving certain volume targets, and the total subsidy agreement had a maximum payout of \$110 million.¹⁸ Since every ODL transaction required MoneyGram to potentially lose money to fees and slippage by completing two exchanges on two different trading platforms, Ripple provided additional subsidies to MoneyGram. As such, MoneyGram reports that it received \$61.5 million in "market development fees" from Ripple in 2019 and 2020.¹⁹

21. The total monthly ODL transaction volumes starting at the commencement of the ODL product launch²⁰ are shown in Figure 4, along with the ODL transaction volumes made by MoneyGram. This chart shows that MoneyGram was responsible for nearly all ODL activity. Starting in June 2020 MoneyGram significantly reduced its ODL transactions, and overall ODL volumes fell sharply as a result.

¹⁸ Ripple. Metric - Work Order (Execution Version).pdf (2019). Page 5.

¹⁹ MoneyGram. MoneyGram International Reports Fourth Quarter and Full-Year 2020 Financial Results (2021). <https://ir.moneygram.com/news-releases/news-release-details/moneygram-international-reports-fourth-quarter-and-full-year-5>.

²⁰ ODL was launched in October 2018 during Ripple's 2018 Swell Conference (See: <https://ripple.com/insights/the-ripple-drop-on-the-ground-at-swell-2019/>).

Figure 4. Monthly ODL Volumes of All Transactions and MoneyGram Transactions

22. By subsidizing MoneyGram to induce ODL activity, Ripple successfully created a pattern of quickly accelerating product growth throughout the period from June 2019 to June 2020. The rapid growth of ODL was an important aspect of Ripple’s bull case (“bull case” refers to an optimistic thesis for why an asset will appreciate in price) for purchasing XRP. In the Q4 2019 Market Report, Ripple highlighted this product growth by saying: “In 2019, dollar value transacted through ODL increased more than a hundred times between Q1 and Q4, and specifically from Q3 to Q4 by 550% ... showcasing high customer demand for leveraging digital assets, specifically XRP, in cross-border transactions.”²¹

5. Features of XRP Coin Economics and Suitability as a Bridge Asset

5.1 XRP’s Fixed-Supply Cap Allows Purchasers to Profit from Ripple’s Success

23. All else equal, for any digital asset with a fixed-supply cap, increased demand for the coin increases the price of the coin. This is a basic economic result of supply and demand.

²¹ Ripple. Q4 2019 XRP Markets Report (2020). <https://ripple.com/insights/q4-2019-xrp-markets-report/>.

XRP was deliberately created with a maximum fixed-supply cap of 100 billion coins along with a variable price dictated by market forces. The total supply of coins essentially never changes,²² while the price has historically fluctuated significantly over time. The anticipated use of Ripple's ODL product by financial institutions would tend to increase the demand for and price of XRP, all else being equal. Other drivers of increased appetite for holding XRP include speculative or investment-driven demand for the coin, as well as individuals or businesses choosing to hold an inventory of XRP to make transfers directly in XRP. Due to the fixed-supply cap, all these sources of increased demand to hold XRP would tend to push up the price of XRP.

24. The fixed-supply, variable price coin model takes on further importance because of Ripple's efforts to promote the growth of the XRP ecosystem and to develop financial products that use XRP to conduct transactions. Based on my experience investing in digital assets, a reasonable purchaser of XRP would understand that if Ripple's ambitious cross-border payment business were successful, the ensuing demand for XRP would tremendously increase the price of XRP.

25. Ripple directly and publicly made the case for this relationship between increased demand for XRP and the future price of XRP. In an interview with Bloomberg Technology, for example, Garlinghouse ties Ripple's efforts to provide payments solutions with increased demand and higher prices, all enabled by XRP's fixed-supply model:

*When Ripple uses XRP we're solving a payments problem. I believe that the more utility you draw, the more demand you're going to drive. And for most of these digital assets you have fixed supply. If you have fixed supply and increasing demand it's going to drive price up.*²³

²² Technically, a trace amount of XRP is destroyed as a fee in each transaction, which means that the total supply of XRP is currently decreasing at a very slow and negligible rate.

²³ YouTube. Ripple CEO Garlinghouse Sees Real Value in Bitcoin at 2:06. <https://www.youtube.com/watch?v=akLQEacOT3w&t=126s>. (2017).

In another statement to CNBC, Garlinghouse confirms Ripple's commitment to increasing the demand for XRP, stating, "We're driving velocity and demand of XRP."²⁴

26. Potential purchasers of XRP would have understood the simple economics behind the message being promoted by Ripple on this subject: XRP, as designed, provided a mechanism for passive XRP owners to benefit financially from Ripple's success as a provider of financial service products built on the XRP Ledger,²⁵ as a developer of the XRP ecosystem, and as a driver of demand for XRP.

5.2 Alternative to Fixed-Supply Cap Model

27. The fixed-supply model used by XRP is the opposite of the fixed-price model of a fiat currency, such as U.S. Dollars, or a "stablecoin," which is a digital asset designed to maintain a pegged value against such a fiat currency. A stablecoin issuer takes active managerial steps to ensure that the available token supply grows or shrinks to match the demand and keeps the price stable over time. There are several significant advantages to using a fiat currency or a stablecoin for cross-border currency transfers.

28. First, the variable price of XRP means that two cross-asset trades are always required to conduct a single cross-border payment: one from the source currency to XRP, and one from XRP to the destination currency. Both of these exchange transactions incur possible fees and slippage, including from price spreads between what buyers and sellers are willing to bid and offer. However, when using a traditional cross-border payment system there is a single foreign exchange transaction, for example from U.S. Dollars to Mexican Pesos. This currency

²⁴ CNBC. Ripple is sitting on close to \$80 billion and could cash out hundreds of millions per month — but it isn't (2016). <https://www.cnbc.com/2018/01/16/why-ripple-is-not-cashing-out-its-xrp-holdings.html>.

²⁵ Although some Ripple products did not use XRP, this report focuses on what Ripple communicated publicly, including its assertions that usage of its products by financial institutions would ultimately lead to greater demand for XRP. This is further discussed in Section 7.

exchange can be accomplished with a single trade on the interbank market for extremely low fees and slippage due to the deep liquidity in those markets.²⁶ Even a stablecoin solution only requires one trade between assets that fluctuate against one another such as a U.S. Dollar stablecoin and a Euro stablecoin. And, moving between U.S. Dollars and a U.S. Dollar stablecoin can be accomplished with no fees.²⁷ Ripple’s CTO David Schwartz discussed this shortcoming of using XRP for cross-border payments in a post on XRP Chat on November 11, 2016: “So the last piece [referring to ‘obstacles to using XRP for cross-border payments’] will be bringing the spreads down. To go from X [to] Y directly, you pay one spread. To go X [to] XRP [to] Y you pay two spreads.”²⁸

29. Second, anyone buying XRP to facilitate cross-border payments would have to bear the substantial price volatility of XRP.²⁹ These volatility-related costs could be large compared to the margins earned in the course of fulfilling remittance or cross-border payment transactions. In fact, banking regulators have determined that the volatility of non-stablecoin digital assets like XRP warrant the maximum possible risk weighting for the purpose of calculating capital requirements.³⁰ This outright gamble on the XRP price is not a desirable activity for traditional financial institutions or market makers with conservative balance sheets (meaning that those institutions prefer to avoid holding risky assets).

²⁶ From January 3, 2007 to January 3, 2008, the daily realized bid-ask spread for USD to MXN was 0.0174%, and the daily realized bid-ask spread for USD to EUR was 0.0045%. *See Journal of Banking and Finance*. Order flow, bid-ask spread and trading density in foreign exchange markets at 600 (2012). <https://www.sciencedirect.com/science/article/pii/S0378426611002603>.

²⁷ Circle. Circle USDC Fee Schedule (2018). <https://support.usdc.circle.com/hc/en-us/articles/360015471331>.

²⁸ XRP Chat. Fortune’s Poll about XRP, BTC & ETH at 2 (2016). <https://www.xrpchat.com/topic/2409-fortunes-poll-about-xrp-btc-eth/page/2/>.

²⁹ From January 1, 2018 to October 15, 2020, the average annualized volatility for XRP based on 1-month volatility was high at 65.1%. *See Journal of Empirical Finance*. Volatility Cascade in Cryptocurrency Trading at 252 (2021). <https://www.sciencedirect.com/science/article/pii/S092753982100030X>.

³⁰ The Basel Committee on Banking Regulation has recommended a 1,250% risk weighting for non-stablecoin digital assets such as XRP, meaning banks must retain additional capital to cover the full value of their XRP holdings. *See Basel Committee on Banking Regulation*. Prudential Treatment of Cryptoasset Exposures (2021).

5.3 Perspective of a Reasonable Purchaser with Respect to XRP's Fixed-Supply Model

31. The correlation between the success of the platform and price of the coin is fantastic for investment-oriented purchasers of XRP, but not for the purchasers who are exclusively interested in the utility use of the cross-border payment product. From the perspective of a reasonable investment-oriented purchasers, the fixed-supply and variable-price model provides a direct link between 1) the success of Ripple's efforts to build the XRP ecosystem and stimulate demand for XRP and 2) the financial performance of the purchaser's investment in XRP. From the perspective of a utility-oriented purchaser, as discussed above, the fixed-supply and variable price model of XRP presents significant disadvantages. Exchanging directly between two fiat currencies would alleviate all of these issues, and these shortcomings help to explain why ODL has been heavily subsidized by Ripple.

6. XRP Sale and Escrow Mechanics

6.1 Process to Sell on Open Markets Through Programmatic Sales

32. Ripple has engaged in sales of XRP into the open market to provide funding for the company. In a 2019 interview with the Financial Times, Garlinghouse acknowledged "[w]e would not be profitable or cash flow positive [without selling XRP]."³¹ Ripple regularly reported the amount of its XRP sales in its quarterly market reports starting in 2017. These ongoing sales of XRP in part provided the necessary capital to build Ripple's products, grow the ecosystem and sign new partners, as described in more detail in Section 7.6.

³¹ Financial Times. The art of redefining success, MoneyGram and Ripple edition (Updated) (2020). <https://www.ft.com/content/3f2fb6bc-e17a-4179-a0a4-152a3e0db1d6>.

33. Many of Ripple’s XRP sales were “programmatic sales” executed by market makers that had partnered with Ripple, meaning that a third party was responsible for selling the XRP into the open market on behalf of Ripple using proprietary trading algorithms. For example, in its Q3 2017 market report Ripple announced that “the company sold \$71.5 million worth of XRP programmatically as a small percentage of overall exchange volume.”³² The highest reported quarterly XRP programmatic sales totaled \$251.51 million in Q2 2019³³, while the lowest reported figure was \$1.75 million in Q1 2020.³⁴

34. Selling large amounts of XRP – and increasing the supply of XRP to the market – has the potential to exert downward pressure on the price of XRP, and Ripple made sure to publicly mention that it conducted its programmatic sales in such a way as to minimize this effect. Ripple described the nature of its programmatic sales of XRP in the Q2 2019 XRP Markets Report:

“Ripple’s programmatic XRP sales have been done with the goal of minimizing market impact. The company did this through limiting XRP programmatic sales to what it considers a small percentage of traded volume, which was executed across multiple exchanges.”³⁵

35. As can be seen in the above excerpt, Ripple’s programmatic sales of XRP were made to the public “across multiple exchanges.” This means that Ripple did not limit its sales of XRP to the financial institutions that could be reasonably expected to use the ODL platform—to the contrary, based on the pseudonymous nature of the trading venues where XRP was sold to the public, Ripple likely did not know who its counterparties were in those XRP sales.

³² Ripple. Q4 2017 XRP Markets Report (2018). <https://ripple.com/insights/q4-2017-xrp-markets-report/>.

³³ Ripple. Q2 2019 XRP Markets Report (2019). <https://ripple.com/insights/q2-2019-xrp-markets-report/>.

³⁴ Ripple. Q1 2020 XRP Markets Report (2020). <https://ripple.com/xrp/q1-2020-xrp-markets-report/>.

³⁵ Ripple. Q3 2019 XRP Markets Report (2019). <https://ripple.com/insights/q3-2019-markets-report/>.

6.2 Over-the-Counter Sales

36. In addition to the programmatic sales into the open market, Ripple reported direct over-the-counter (OTC) sales of XRP to outside organizations. The Q1 2017 XRP Markets Report describes the nature of these sales: “In Q1 market participants purchased \$6.7MM directly from XRP II, LLC, Ripple’s registered and licensed money service business (MSB). These buyers tend to be institutional in nature and their purchases include restrictions that help mitigate the risk of market instability due to large subsequent sales.”³⁶

37. There are two important things to note about these institutional purchases. First, at times they include sales restrictions that help mitigate the risk of downward price pressure due to large subsequent sales into the open market. Second, these purchases are significant because they signaled institutional interest in the XRP ecosystem which would be indicative of XRP’s broader capital market potential. These points would appeal to an individual purchaser with a long-term investment mindset, and were repeatedly communicated by Ripple in the XRP Markets Reports.

6.3 Compensating Partners in XRP

38. Creating new partnerships with financial institutions was a key aspect of the bull case for XRP. Ripple’s compensation to attract and maintain some of those partnerships was publicly known to be made in XRP.³⁷ Ripple’s distributions of XRP to business partners were another mechanism (in addition to Ripple’s sales of XRP described in the XRP Market Reports) by which Ripple effectively sold XRP into the broader XRP ecosystem.

³⁶ Ripple. Q1 2017 XRP Markets Report (2017). <https://ripple.com/insights/q1-2017-xrp-markets-report/>.

³⁷ Ripple. Ripple Rolls Out \$300M RippleNet Accelerator Program to Grow Volume and XRP Utility (2017). <https://ripple.com/insights/ripple-rolls-300m-rippletnet-accelerator-program-grow-volume-xrp-utility/>.

39. MoneyGram regularly updated its investors in public filings to the U.S. Securities and Exchange Commission about the compensation it received from Ripple, and that the compensation was in the form of XRP payments. In a February 28, 2020, 10-K filing, MoneyGram said “In June 2019, we entered into a commercial agreement with Ripple to utilize Ripple’s ODL platform (formerly known as xRapid), as well as XRP, to facilitate cross-border non-U.S. Dollar exchange settlements. The company is compensated by Ripple in XRP for developing and bringing liquidity to foreign exchange markets.”³⁸ Another public filing issued by MoneyGram four days earlier specified that the value of this compensation in U.S. Dollars was \$8.9 million during the fourth quarter of 2019.³⁹ MoneyGram also stated in an interview to TheBlock, a news site covering digital assets, that the XRP earned as compensation from Ripple was sold as soon as it was received.⁴⁰ Since Ripple gave XRP to MoneyGram, and MoneyGram sold that XRP to the open market via digital asset trading platforms, the overall effect of these XRP payments was to sell additional XRP into the open market in exchange for cash.

40. In addition to partnerships forged with financial institutions, some Ripple partnerships with other, non-financial, organizations were also completed by transferring XRP. [REDACTED] a web platform allowing content creators to be compensated for their content through micropayments, received a grant of 1 billion XRP from Ripple that was worth approximately

³⁸ MoneyGram. Form 10-K 2019 Annual Report at 44 (2020). <https://ir.moneygram.com/financials-and-filings/annual-reports>.

³⁹ MoneyGram. Form 8-K Current Report Issued February 24, 2020 (2020). <https://ir.moneygram.com/financials-and-filings/annual-reports>.

⁴⁰ The Block. ‘We sell XRP as soon as we receive it,’ says MoneyGram on Ripple incentive payments (2020). <https://www.theblockcrypto.com/daily/58860/we-sell-xrp-as-soon-as-we-receive-it-says-moneygram-on-ripple-incentive-payments>.

\$265 million at the time the grant was announced.⁴¹ [REDACTED] press release stated that the XRP would be “deployed towards driving adoption of XRP and the InterLedger Protocol.”⁴²

6.4 Escrow

41. In December 2017 Ripple created 55 escrow accounts, simply called “escrows” on the XRP blockchain. As described on the XRP Ledger Blog, each escrow held 1 billion XRP owned by Ripple, and exactly one escrow would release its stored XRP every month for the following 55 months.⁴³ This action effectively locked away 55% of the total supply of XRP and reduced the circulating float (meaning the amount of coins immediately available to be sold) of XRP.

42. Over the following years, Ripple continued to place a substantial amount of the coins back into new escrows as soon as they were released each month, and these actions were announced by Ripple and visible to the public. As of December 22, 2020, Ripple had replaced 29.2 billion XRP that were already released back into escrows again. In addition to the 19 billion XRP still remaining from the original creation of the escrows in 2017, this resulted in a total of 48.2 billion XRP locked in escrows on December 22, 2020.⁴⁴

43. Although Ripple continued to sell XRP into the open market on a regular basis, this significant restriction of the XRP supply would have greatly encouraged potential investment-oriented purchasers of XRP to earn a speculative investment profit with their

⁴¹ Coindesk. Ripple to Give Away 1 Billion XRP in Massive Bid to Fund Online Content (2019).

<https://www.coindesk.com/ripple-is-giving-away-1-billion-xrp-in-massive-bid-to-fund-online-content>.

⁴² PR Newswire. Ripple’s Xpring Makes 1 Billion XRP Grant to Drive XRP Adoption and Advance [REDACTED] Monetized Platform for Creators (2019). [https://www.prnewswire.com/news-releases/ripples-xpring-makes-1-billion-xrp-grant-to-drive-xrp-adoption-and-advance-\[REDACTED\]-monetized-platform-for-creators-300902194.html](https://www.prnewswire.com/news-releases/ripples-xpring-makes-1-billion-xrp-grant-to-drive-xrp-adoption-and-advance-[REDACTED]-monetized-platform-for-creators-300902194.html).

⁴³ XRP Ledger Blog. An Explanation of Ripple’s XRP Escrow (2017). <https://ripple.com/insights/explanation-ripples-xrp-escrow/>.

⁴⁴ XRParcade. Ripple Escrow: Unraveling the Mystery (2020). <https://www.xrparcade.com/2020/03/02/ripple-escrow-unraveling-the-mystery/>.

purchase. Indeed, when the escrow was announced, Ripple CEO Brad Garlinghouse wrote about how this would benefit “investors”:

Today we are permanently removing that uncertainty by committing to place 55 billion XRP into a cryptographically-secured escrow account by the end of 2017. By securing the lion’s share of our XRP, investors can now mathematically verify the maximum supply of XRP that can enter the market.⁴⁵

The reduced float would tend to increase the price of XRP, directly by reducing selling pressure and indirectly by assuring the public that there was an upper limit to how much XRP would be sold by Ripple on the open market through trading platforms in any given month going forward. Ripple’s ongoing replacement of released XRP into new escrows reinforced the positive effect of this reduction in circulating supply by showing a commitment to keeping those coins away from trading platforms for even longer.

6.5 XRP Buyback Purchases Made by Ripple

44. At times Ripple communicated to the public that it would purchase XRP with open market transactions, an action that would effectively support the price of XRP. The fundraising activities described in Section 6.1 and Section 6.2 involved repeated sales of XRP, so it is noteworthy that Ripple also signaled to the market at times that it would do the opposite by purchasing XRP.

45. In the Q2 2020 XRP Markets Report Ripple announced buybacks with the following statement: “A healthy, orderly XRP market is required to minimize cost and risk for customers, and Ripple plays a responsible role in the liquidity process...Ripple has been a buyer in the secondary market and may continue to undertake purchases in the future at market prices.”⁴⁶

⁴⁵ Ripple. Ripple to Place 55 Billion XRP in Escrow to Ensure Certainty of Total XRP Supply (2017). <https://ripple.com/insights/ripple-to-place-55-billion-xrp-in-escrow-to-ensure-certainty-into-total-xrp-supply/>.

⁴⁶ Ripple. Q2 2020 XRP Markets Report (2020). <https://ripple.com/insights/q2-2020-xrp-markets-report/>.

46. The next quarterly report also included a description of Ripple’s ongoing plans to purchase XRP. The section of the report called ‘XRP Purchases’ stated: “As indicated in the Q2 2020 XRP Markets Report, Ripple is purchasing – and may continue to purchase – XRP to support healthy markets.”⁴⁷

47. Ripple’s buyback activity would increase demand for and therefore tend to increase the price of XRP and to instill confidence in other purchasers that Ripple will continue to support the price of the coin going forward, thereby helping to sustain an orderly secondary market for XRP. Although the buyback activity would not have mattered to purely utility-oriented purchasers of XRP, buybacks are very important signals for investment-oriented purchasers. Open market purchases, and the public communications about those purchases, alter the potential risk and reward of an investment in XRP by increasing buying pressure on the coin and by reducing the probability and severity of a possible crash in the price of XRP. Like the escrow accounts described in Section 6.3, the buyback activities executed by Ripple would also have the effect of reducing the effective float of the coin.

6.6 Perspective of a Reasonable Purchaser with Regards to Ripple’s XRP Sales and Escrow

48. The manner and mechanism of Ripple’s ongoing sales, distribution, escrow, and buybacks of XRP would have been extremely important to a potential investment-oriented purchaser of XRP for the following reasons: 1) the programmatic sales comprised an ongoing fundraising process that provided necessary capital for Ripple to develop the XRP ecosystem, as described further in Section 7.6 of this report; 2) the direct sales to business partners as well as XRP payments to companies like MoneyGram brought new financial institutions into the XRP

⁴⁷ Ripple. Q3 2020 XRP Markets Report (2020). <https://ripple.com/insights/q3-2020-xrp-markets-report/>.

ecosystem; 3) the lock-up provisions as well as the ongoing public escrow activities, both publicized by Ripple, amounted to public commitments to reduce the float of XRP and reduce the risk of significant selling pressure via XRP being dumped on markets; and 4) buybacks of XRP, first announced in 2020, by Ripple placed direct upward pressure on the price of XRP and reduced the float of XRP. All of these factors supported the bull case, and price, of XRP.

49. On the other hand, a reasonable purchaser of XRP that is exclusively considering the utility use of the coin would be less concerned with some of these heavily promoted sales and distribution mechanisms. For example, buybacks of XRP or an escrow mechanism to restrict the supply of XRP by more than half of the total supply do not benefit a purely utility-oriented purchaser. The announced resale lock-ups in general are similarly neutral for this category of purchaser, and would actually be a negative factor for the particular institutional holders of XRP who are subject to the lock-ups and face constraints on their ability to sell XRP. The one aspect of Ripple's distribution of XRP that unequivocally benefits a purchaser of XRP for cross-border payments was the existence of direct XRP subsidy payments to such purchasers, e.g., MoneyGram, to incentivize their use of XRP and Ripple products.

7. Ripple Communications and Promotional Statements

7.1 Promotional Factors Considered by an Investment-Oriented Purchaser

50. Based on my experience as an investor in digital assets as well as my close observation of the digital asset space, I believe that a reasonable investment-oriented purchaser of XRP would consider at least the following factors when purchasing XRP: 1) an explanation of the investment bull case for the digital asset, i.e. an explanation of the company's own view about why its digital asset will increase in value over time; 2) announcements of any important strategic partnerships; 3) descriptions of the qualifications of the team members who will

develop and manage the project; 4) the target addressable market for the platform or product; 5) plans for the use of funds being raised; and 6) plans to provide a liquid trading market for the digital asset. Ripple communicated about each of these topics extensively in public venues, which in my opinion had the effect of generating significant investor interest in purchasing XRP.⁴⁸

51. This section considers, from the perspective of a reasonable investment-oriented purchaser of XRP, public statements made by Ripple. Ripple made public statements across various platforms, ranging from its own website, social media platforms, finance and digital asset news sites, and investor forums. Ripple’s election to communicate with the public on this last venue – investor-oriented forums – suggests that Ripple targeted its communications to potential purchasers who were considering purchasing XRP as an investment. Such forums include:

- The 2018 Yahoo Finance All Markets Summit: Crypto, promoted as an event to “examine the growing market and investor interest in cryptocurrencies...[and] discuss crypto investing with CEOs, engineers, policy makers and legal experts.”⁴⁹ For this event, Ripple CEO Brad Garlinghouse was a highly anticipated speaker on the topic: “Beyond Bitcoin: Ripple and \$XRP.”⁵⁰
- The 2017 CoinDesk Consensus: Invest conference, billed as “the world’s first digital asset investor outlook event...[which] offers attendees the chance to get connected with

⁴⁸ Although these topics are of particular interest to purchasers of digital assets, this list is not exhaustive. Due to the presence of other factors in purchasing decisions, addressing these points does not guarantee an increase in price. Supply and demand, and therefore the prices, of speculative assets are driven by many complicated factors beyond the scope of this report.

⁴⁹ Yahoo Finance All Markets Summit: Crypto, February 7, 2018. <https://www.yahoo.com/news/yahoo-finance-markets-summit-crypto-february-7-2018-223531903.html>.

⁵⁰ *ibid.* Also, when Garlinghouse was introduced by the Yahoo Finance interviewer, “Brad here today is the CEO of Ripple. This is a company that has surely been at lot in the news recently. I have to say just anecdotally that as we’ve gone through this day and seen a lot of great speakers, a lot of terrific panelists, everyone keeps stopping me and asking, when’s Garlinghouse, when’s Garlinghouse?”

how to invest, store, trade and judge value in this new asset class.”⁵¹ Ripple’s Head of XRP Markets, Miguel Vias, spoke at this event and when asked what advice he had for investors looking to “incorporate some crypto into their portfolio,” he encouraged the audience to consider digital assets where “the use case makes sense” and follows that by explaining the case for Ripple and XRP: “One of the reasons I joined Ripple is the XRP use case made a ton of sense to me...So for me it was simple – utility will drive value eventually to this because there's a company behind it that's pushing a particular use case and it makes sense.”⁵²

- The 2020 Barron’s Cryptocurrency Investors’ Forum, which featured “essential conversations around the state and future of digital currency, and how to approach investing in this asset class.”⁵³ At this forum, Ripple VP of Global Institutional Markets Breanne Madigan spoke on the panel, “Weighting Crypto in a Portfolio,” and, similarly to Vias, suggested that investors seeking to enter to digital asset markets consider XRP.⁵⁴
- Online forums specifically discussing the investment use case for XRP. Ripple CTO David Schwartz participated in several of these forums, including the “[XRP] Ripple Speculation Thread” on BitcoinTalk.com,⁵⁵ the “XRP Trading and Speculation” discussion forum on XRChat.com,⁵⁶ and multiple Q&A posts on Quora.com where he directly answered questions regarding the investment case for XRP.⁵⁷ For example, on

⁵¹ Consensus: Invest, November 28, 2017. <https://events.bizzabo.com/consensusinvest>.

⁵² YouTube. Trade Desk: Advancing the Asset. <https://youtu.be/jdFuiRVNUoM?t=2120> (2017).

⁵³ The Cryptocurrency Investor Forum, December 3, 2020. <https://barronscustomevents.com/grayscale>.

⁵⁴ Video interview of Breanne Madigan with Barron’s and Grayscale Investments’ “The Cryptocurrency Investor Forum” on December 3, 2020. See <https://barronscustomevents.com/grayscale> from 1:46:09 to 1:47:52.

⁵⁵ Examples include: <https://bitcointalk.org/index.php?topic=1381669.msg18859629#msg18859629> and <https://bitcointalk.org/index.php?topic=1381669.msg19787105#msg19787105>.

⁵⁶ An example is provide in the subsequent Section.

⁵⁷ Examples include: <https://www.quora.com/If-banks-use-Ripple-for-payments-but-don-t-need-to-buy-XRP-then-who-will-buy-XRP-and-why-will-its-price-increase-Does-it-make-any-sense-to-invest-in-XRP>,

Quora a potential investor in XRP asks, “If banks use Ripple for payments but don’t need to buy XRP, then who will buy XRP and why will its price increase? Does it make any sense to invest in XRP?” Schwartz answers by describing how Ripple’s strategy of building a payment system for financial institutions will increase the demand for XRP, which as described in Section 5.1 would increase the price of XRP. He writes, “If we’re successful with this strategy, and XRP is used as a settlement currency for some fraction of RippleNet payments, that could set up sources of demand for XRP...That’s just one way adoption of XRP as a settlement asset could cause significant increases in demand for holding XRP.”⁵⁸

52. Ripple’s Insights blog, of which many posts are discussed in this section, was also directed, in part, towards purchasers considering XRP as an investment. In fact, on multiple occasions Ripple specifically refers to potential purchasers of XRP as an “investor” or “investors”.⁵⁹ For example, in a post from October 2017 titled, “10 Things You Need to Know About XRP”, Ripple lists reasons why XRP should be attractive relative to other digital assets such as “XRP is the most scalable digital asset”, “XRP is the best digital asset for payments” and “XRP scales faster than Bitcoin.”⁶⁰ Ripple ends the list with “10. It’s easy to buy” and then

<https://www.quora.com/Are-those-who-invested-in-XRP-in-possible-danger-of-losing-their-investments-as-Ripple-does-not-extend-exclusivity-to-XRP-on-its-network> and <https://www.quora.com/If-a-large-amount-of-banks-were-to-adopt-xrapid-and-started-using-xrp-how-would-that-impact-the-tokens-value>.

⁵⁸ Quora Post: If banks use Ripple for payments but don’t need to buy XRP, then who will buy XRP and why will its price increase? Does it make any sense to invest in XRP?” <https://www.quora.com/If-banks-use-Ripple-for-payments-but-don-t-need-to-buy-XRP-then-who-will-buy-XRP-and-why-will-its-price-increase-Does-it-make-any-sense-to-invest-in-XRP>.

⁵⁹ In addition to the following example, see also <https://ripple.com/insights/ripple-to-place-55-billion-xrp-in-escrow-to-ensure-certainty-into-total-xrp-supply/> (announcement of 55 billion XRP escrow by Garlinghouse) and <https://ripple.com/insights/bitstamp-now-trading-xrp/> (quotation from Miguel Vias, Head of XRP Markets at Ripple), both referenced in my report.

⁶⁰ Ripple. 10 Things You Need to Know about XRP (2017). <https://ripple.com/insights/10-things-need-know-xrp/>.

specifically addresses “individual investor[s]”, as seen in Figure 5,⁶¹ providing a link that directed to a Ripple webpage⁶² with a guide on where to purchase XRP.

Figure 5. Screenshot from Ripple’s Insights Blog Post, “10 Things You Need to Know About XRP”

10. It’s easy to buy

There are different ways to buy XRP depending on who you are. If you’re a financial institution, it’s best to contact Ripple directly. If you’re an individual investor, you’ve got [many ways to buy](#) – you can visit any one of the digital exchanges that lists XRP and do it that way.

7.2 Ripple Communications on the Investment Use Case

53. Ripple executives made statements linking the company’s efforts to increases in the price of XRP. As such, Ripple’s public statements reflected its view that XRP would make a good investment if Ripple succeeded in its vision to use XRP to disrupt the global payments system. Such communications would have appealed to potential purchasers who were interested in XRP as an investment.

54. Ripple executives made public statements on the XRP Chat online platform. XRP Chat is a social media website and one of the leading forums for discussion about XRP and Ripple. The most popular forum, by number of posts, on XRP Chat is the “XRP Trading and Price Speculation” forum which currently has over 200,000 posts discussing issues related to the trading and investment case for XRP, as noted in its sub-header: “Speculation about trading and price of XRP. Technical trading tips, fundamental analysis.”⁶³

⁶¹ *ibid.*

⁶² Ripple. XRP Buying Guide (2017). Archived version available at: <https://web.archive.org/web/20171211225351/https://ripple.com/xrp/buy-xrp/>.

⁶³ See <https://www.xrpchat.com/> and <https://www.xrpchat.com/forum/17-xrp-trading-and-price-speculation/>, accessed on August 18, 2021. The sub-header of the forum, “Speculation about trading and price of XRP. Technical trading tips, fundamental analysis,” points to the trading and investment use case of XRP. “Fundamental analysis” is the analysis of a company’s inherent business and financial model as pertains to its value and growth potential; in the context of this forum on XRP Chat and as seen in the proceeding example, this includes discussions about Ripple’s business model and its effect on the price of XRP.


55. On this forum, user “Vertigo2131” initiated a post titled, “Valuation Models - XRP The Digital Currency Vs. Ripple the Company” and asks how Ripple’s success might impact the valuation of XRP.⁶⁴ In response, David Schwartz, Ripple’s CTO representing himself as a “Ripple employee” and writing under his publicly known pseudonym “Joel Katz”,⁶⁵ provides a detailed, step-by-step response (Figure 6) explaining how the success of Ripple’s business model would translate into higher demand for XRP and thus higher XRP prices for those holding XRP as a speculative asset.

⁶⁴ XRP Chat. Valuation Models – XRP The Digital Currency Vs. Ripple the Company (2017). <https://www.xrpchat.com/topic/5280-valuation-models-xrp-the-digital-currency-vs-ripple-the-company/>.

⁶⁵ Schwartz’s Twitter profile (@JoelKatz) around the time of his engagement with this post contained the following information: “David Schwartz @JoelKatz Improving global settlement with blockchain tech. Chief Cryptographer at Ripple; one of the original architects of the XRP network.” *See*. https://web.archive.org/web/20170616010746if_/https://twitter.com/JoelKatz.

Figure 6. David Schwartz's Response to Question Regarding the Impact of Ripple on XRP's Valuation.

JoelKatz



Ripple Employee

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Posted May 25, 2017

Featured Comment Popular Post

Here's how I've been explaining it recently:

- 1) There's a business that Ripple has providing transaction processing software to banks. It can work without XRP and without any blockchain tech. It improves international payments because it uses end to end messaging to track payment progress, ensure all necessary compliance information is in the transaction in the first place, precisely knows the fees ahead of time, and provides prompt, reliable confirmation of delivery. This is a big enough improvement that banks will use it even if the actual money moves the same way it does now.
- 2) Ripple has built a public blockchain with a native asset. It has various nice features -- a distributed exchange, good governance, fast transactions, high transaction volume, native multisign, key rotation, payment channels, and so on.
- 3) The hard part about getting banks to use a blockchain isn't the blockchain, it's everything else. It's governance, compliance, integration with banking systems, and so on. our software does all that stuff, so if routing a payment through XRP is a penny cheaper, the bank can take it. Then we have to make XRP cheaper somewhere that matters.
- 4) We don't target the biggest corridors like USD→EUR because they're efficient. We target an inefficient, but fairly high volume, corridor. For example, EUR→INR. Market makers have very small profit margins, so even a small incentive to place good EUR↔XRP and XRP↔INR offers can beat what banks are getting now through the correspondent banking system.
- 5) Once we get one corridor, we hang other countries off each end of the corridor, expanding the reach of XRP.
- 6) Now, say you're a company like Seagate that pays out money all over the globe. If you have to make payments to five countries in our corridors, you'd rather hold one pile of XRP than five piles of different currencies. That increases demand.
- 7) Now, say you're a company like Apple with a huge pile of cash. If you want to snap up other assets cheap, you'll need to hold the asset the people selling want. If they're going into any of our corridors, they'll want XRP, so you would want to hold it.
- 8) If that succeeds, it could increase the price of XRP.
- 9) Ripple holds a huge pile of XRP and will be the dominant XRP holder for the foreseeable future. But we're primarily VC financed and we get revenue from selling software to banks. We don't use our XRP as a bank account but as a strategic weapon. (Though we do sell some for revenue, we just don't need to for salaries or to keep the lights on.)
- 10) Anyone who gets XRP from us as part of some deal with a lockup has their incentives aligned with ours. They want the long-term price of XRP to go up too.

I think that pretty much covers our vision. There is, of course, no guarantee of success. This is a pretty crazy thing we're trying to do. But we have 160 full time employees and have raised tens of millions of dollars. We've hired many amazing people, and our track record speaks for itself.

bitisbetter, Jasombre, TastySoda and 173 others

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56. In public statements, Garlinghouse has also made the case that Ripple's successful efforts could translate into higher XRP prices. For example, when the price of XRP increased dramatically in March and early April 2017, Garlinghouse attributed XRP's large price increase to Ripple's efforts. In a public statement on Coindesk, one of the leading digital asset news sites,

Garlinghouse commented, “We have had a significant rally in XRP prices, but it is reflective of a lot of work we have done to make Ripple a very compelling solution.”⁶⁶ Later in the same article he even more strongly linked Ripple’s actions to XRP’s success: “One of the big differences between XRP and many other digital currencies is that we are solving a real-world problems for banks and providing ROI. This has been giving us credibility in the broader cryptocurrency space. [emphasis added]”⁶⁷

57. Garlinghouse at times emphasized that Ripple’s success would be measured by the long-term rise in price of XRP rather than simply short-term price swings. On multiple occasions, he conveyed this point using similar language as he used in an interview at the 2018 Yahoo Finance summit for digital asset investors:

*“I’ll tell you the exact same thing I tell people inside the company: The price of XRP over three hours, over three days, over three weeks, or even three months, that is not success. That’s not how I measure success. I think about success over the next three to five years.”*⁶⁸

58. Garlinghouse similarly connects the success of Ripple’s efforts to the price of XRP in a press conference where he is asked whether, given that it is possible that banks can implement RippleNet without having to use XRP, “the expansion or growth of RippleNet is not correlated to the value or the price of XRP?”⁶⁹ In response, Garlinghouse answers, “I actually think they’re very correlated,” and explains how partnering with such banks provides the

⁶⁶ Coindesk. Use or Speculation: What’s Driving Ripple’s Price to All-Time Highs? (2017). <https://www.coindesk.com/use-or-speculation-whats-driving-ripples-price-to-all-time-highs>.

⁶⁷ *ibid.*

⁶⁸ Yahoo Finance. Ripple CEO Brad Garlinghouse: 'There's a lot of FUD about XRP' (2018). <https://www.yahoo.com/news/ripple-ceo-brad-garlinghouse-theres-lot-fud-xrp-181425025.html>.

⁶⁹ YouTube. Ripple CEO Brad Garlinghouse Korea Reporter Meeting. <https://youtu.be/JOAuXEYu9Pg?t=1837> (2018).

opportunity for Ripple to cross-sell its XRP payments solution, xRapid, thereby necessitating the use of XRP at those banks.⁷⁰

59. Ripple's quarterly XRP Markets Reports also linked the success of its banking partnerships with the increase in the price of XRP. The reports, many written by Miguel Vias, Head of XRP Markets, also more broadly linked Ripple's efforts to the price of XRP. For example, in the wake of XRP's large price increase in Q2 2017, the XRP Markets Report listed four Ripple initiatives that "clearly contributed to XRP's incredible second quarter" and were "instrumental in helping to drive XRP interest," including partnerships with financial institutions and the escrows previously described in Section 6.4.⁷¹ Vias again highlighted Ripple's instrumental role in causing the price of XRP to increase when he was quoted in an article by CoinTelegraph, a digital asset news site, about the surge in XRP prices at the end of Q2 2017:

*"While the recent surge in XRP is certainly influenced by Bitcoin's scalability issues, much of the recent momentum is due to the announcement that MUFG [the world's third largest bank according to Ripple]⁷² joined Ripple's steering group, GPSG. Unlike other digital assets, XRP has a clear use case and people are beginning to recognize that."*⁷³

60. Finally, in an interview with a finance and technology news site in 2014, Larsen also publicly communicated that Ripple "created a lot of value in XRP."⁷⁴ While describing how Ripple would develop the XRP ecosystem, Larsen connected Ripple's efforts to the increased value of XRP, stating, "All we're concerned about is trust, utility and liquidity, grow the network, that will actually be the best thing for the value of XRP."⁷⁵ Later in the interview, when

⁷⁰ *ibid.*

⁷¹ Ripple. Q2 2017 XRP Markets Report (2017). <https://ripple.com/insights/q2-2017-xrp-markets-report/>.

⁷² Ripple. MUFG Joins Ripple's Global Payments Steering Group (2017). <https://ripple.com/insights/mufg-joins-ripples-global-payments-steering-group>.

⁷³ CoinTelegraph. Ripple Price Surge Continues, Altcoin Takes Advantage Of Bitcoin Scaling Troubles (2017). <https://cointelegraph.com/news/ripple-price-surge-continues-altcoin-takes-advantage-of-bitcoin-scaling-troubles>.

⁷⁴ YouTube. Chris Larsen discusses Ripple. https://youtu.be/_SpdX36p6ao?t=827 (2014).

⁷⁵ YouTube. Chris Larsen discusses Ripple. https://youtu.be/_SpdX36p6ao&t=1376s (2014).

asked, why people should trust Ripple if it “controls the disbursement of the Ripple [referring to XRP] and could potentially modify the money supply [of XRP]”, Larsen emphasized that Ripple is focused on increasing the value of XRP:

“For those that are skeptical I would just say it's a different approach. Give us time, hopefully we'll earn their trust over time that we're doing this in a way that adds the most value to the protocol. At the end of the day that's all that matters and you know we're constantly learning we're constantly trying to maximize how we do that but we think it actually could be a real strength in making sure that things are being done to just add as much you know kind of partnerships and value as we possibly can to the protocol.”⁷⁶

7.3 Ripple Communications on Partnership Milestones

61. One of the key aspects for evaluating whether a company or project has a viable business model is whether it has “traction”, i.e., to what extent is there is “product/market-fit” where actual customers have signed up to use the company’s product or service such as to demonstrate that it solves a real problem.⁷⁷ In the case of Ripple, whose stated core business model is to provide “financial institutions” with “the most advanced blockchain technology for global payments,”⁷⁸ showing traction meant needing to demonstrate that financial institutions were signing up to partner with Ripple for its payment solutions.⁷⁹ As such, Ripple made it a point to publicly announce and feature its partnerships with financial institutions, as well as connect those partnerships with the success of its business model. Ripple also publicly connected the success of its partnerships with the increased demand for and value of XRP, even though

⁷⁶ YouTube. Chris Larsen discusses Ripple. https://youtu.be/_SpdX36p6ao?t=1493 (2014).

⁷⁷ See, for example, the discussion on the importance of “traction” and “product/market fit” to investors by Steve Blank, a leading expert on technology startups and an adjunct professor at Stanford: <https://steveblank.com/raising-money/>.

⁷⁸ Ripple. <https://ripple.com> (2021). Accessed on August 18, 2021.

⁷⁹ Although some of these partnerships involved Ripple products that did not use XRP, this report focuses on what Ripple communicated publicly, including its assertions that usage of its products by financial institutions would ultimately lead to greater demand for XRP. This is further discussed in the remainder of this section.

some of these partnerships at the time did not involve the use of XRP. This section focuses primarily on Ripple’s announcements regarding these financial institution partnerships.

62. In Ripple’s 2014 Year in Review, Ripple listed one of its key achievements as having “refined market fit and gained traction.”⁸⁰ In the section of the report describing this traction, Ripple highlighted its partnerships with Fidor Bank, its first banking partner, and with Cross River and CBW Bank, the first U.S. Banks to partner with Ripple.⁸¹ Ripple publicly touted its subsequent partnerships with financial institutions through press releases and posts on its Insights blog. Ripple’s notable milestones, e.g., reaching 100 financial institution partners, were also prominently announced.⁸²

63. Ripple’s quarterly XRP Markets Reports frequently highlighted new banking partnerships and at times also touted their positive impact on the price of XRP. For example, the Q1 2017 XRP Markets Report provided reasons for the large increase in the price of XRP at the end of March 2017 and noted as a “particularly important” development that Ripple signed partnerships with “MUFG, the world’s third largest bank, 47 banks in Japan and [expanded] into the Middle East and India through NBAD [National Bank of Abu Dhabi] and Axis Bank.”⁸³ The report clearly connected Ripple’s growing bank partnerships to increased demand for XRP, which would increase XRP’s value:

Markets are clearly connecting the dots that banks which join the Ripple network today are prospective users of XRP liquidity in the future. Growing bank membership of the Ripple network creates opportunities for Ripple to deepen

⁸⁰ Ripple. Ripple Labs 2014: A Year in Review (2014). <https://ripple.com/insights/views/ripple-labs-2014-a-year-in-review/>.

⁸¹ *ibid.*

⁸² Ripple. RippleNet Grows to More Than 100 Financial Institutions (2017). <https://ripple.com/insights/rippletnet-grows-to-over-100-financial-institutions/>.

⁸³ Ripple. Q1 2017 XRP Markets Report (2017). <https://ripple.com/insights/q1-2017-xrp-markets-report/>.

*those customer relationships and cross-sell liquidity solutions built on XRP, all of which should be beneficial to the asset.*⁸⁴

64. Then, against the backdrop of another large increase in the price of XRP in Q4 2017, that quarter's XRP Markets Report again connected the XRP price increase with new banking partnerships and also directly mentioned that these partnerships were important "milestones" for potential purchasers of XRP:

*In late Q4, XRP markets began to connect the dots once again. Of particular importance were the American Express/Santander partnership announcement, the activation of escrow and the connection of Korean banks to the Japan Bank Consortium... each one of these client milestones increases the probability that institutions will eventually use XRP and xRapid to take advantage of more efficient liquidity, just like Cuallix does today. As digital asset markets grow and evolve, newer market participants will continue to look to milestones such as these to gauge XRP's potential.*⁸⁵

65. Another type of partnership that would have appealed to a purchaser interested in the investment use case for XRP was solidified by an agreement between Ripple and a provider of retirement investment accounts. Ripple announced that purchasers could buy XRP through Bitcoin IRA's retirement accounts.⁸⁶ Bitcoin IRA is a trading platform that enables users to purchase digital assets using a tax-advantaged retirement account. The only possible use case for a purchaser buying XRP on Bitcoin IRA would be for the purpose of making an investment (not to make cross-border payments). And, when joint statements from Ripple and Bitcoin IRA were released on the date of the announcement, Ripple underscored how its partnerships with financial institutions would increase the ownership of XRP and make XRP compelling to "forward thinking" individuals looking to purchase XRP using a retirement account:

⁸⁴ *ibid.*

⁸⁵ Ripple. Q4 2017 XRP Markets Report (2018). <https://ripple.com/insights/q4-2017-xrp-markets-report/>.

⁸⁶ Ripple. It's Never Been Easier to Access and Store XRP (2017). <https://ripple.com/insights/its-never-been-easier-to-access-and-store-xrp/>.

*As institutional adoption of Ripple's enterprise blockchain solution has grown, people increasingly understand the future opportunity for banks, payment providers and other institutions to use XRP as an on- demand liquidity solution for cross-border payments. Bitcoin IRA, Kingdom Trust and BitGo offer a forward-thinking way for individuals in the U.S. to access and store XRP.*⁸⁷

7.4 Ripple Communications on Qualifications of Team Members

66. The quality of a project's team is of paramount importance to a reasonable purchaser in the digital asset space, who wants to know whether the team associated with the coin is able to deliver with respect to the vision outlined by the team behind the coin or project. Ripple publicly announced new team members' roles and highlighted how they would help develop the XRP ecosystem and increase demand for XRP.

67. Shortly after Ripple hired Phil Rapoport, Director of Markets and Trading, it published a post interviewing him and connecting his role with attracting traders to the XRP ecosystem. After discussing Rapoport's background from Columbia University and Goldman Sachs, the interview shifts to Rapoport's role which would involve "thinking a lot about market structure and macroeconomic questions that might arise in the future, and making sure that the Ripple ecosystem feels welcoming for traders and finance professionals."⁸⁸ When asked, "Why should traders get involved in Ripple now?" Rapoport replies that "the investment [in XRP] has barely even started. This is going to be a tremendous opportunity from many angles and a theme you'll want to be close to."⁸⁹

68. Similarly, when Miguel Vias, the head of Ripple's XRP markets team was hired, Ripple published a post on its blog, stating, "In his new role, Vias will utilize his considerable

⁸⁷ *ibid.*

⁸⁸ Ripple. Interview with Phil Rapoport, Director of Markets and Trading at Ripple Labs (2013). <https://ripple.com/insights/interview-with-phil-raपोport-director-of-markets-and-trading-2/>.

⁸⁹ *ibid.*

expertise building liquidity for new financial products by working with market makers, traders, investors and exchanges to strengthen the XRP markets and set the stage for large-scale institutional adoption.”⁹⁰ Ripple highlighted Vias’ background as a former executive of CME Group, a large derivatives exchange, and connected how his background would help drive greater adoption and demand for XRP, with Vias stating, “My experience in OTC markets and at an exchange will aid in charting a path toward wholesale XRP adoption.”⁹¹

69. When Ripple added Zoe Cruz to its board of directors it also connected her industry background, including as an executive from Morgan Stanley and founder of an investment management firm, with growing the usage of and demand for XRP.⁹² On Ripple’s Insights blog, Garlinghouse is quoted as saying, “With her 35 years of experience in finance and foreign exchange, Zoe will offer us a unique perspective and invaluable guidance on how to accelerate RippleNet growth and XRP usage across the network globally.”⁹³

70. Ripple also touted the technical credentials of its team and how its engineers were building a superior blockchain that is faster and more scalable than others. When a group including several engineers was hired in 2014, Ripple highlighted its “world class team of cryptographers, security experts, distributed network developers, Silicon Valley, and Wall Street veterans.”⁹⁴ That year, Ripple also announced the hiring of a “C++ Guru” who would work on “rippled”, the codebase of the XRP Ledger protocol software.⁹⁵ In later blog posts, Ripple

⁹⁰ Ripple. CME Group Executive Miguel Vias Joins Ripple (2016). <https://ripple.com/insights/cme-group-executive-miguel-vias-joins-ripple/>.

⁹¹ *ibid.*

⁹² Ripple. Zoe Cruz Joins Ripple’s Board of Directors (2017). <https://ripple.com/insights/zoe-cruz-joins-ripples-board-directors/>.

⁹³ *ibid.*

⁹⁴ Ripple. Welcome Abiy, Peter, Mark, Yong-Soo, and Tom to Ripple Labs (2014). <https://ripple.com/insights/welcome-abiy-peter-mark-tushar-yong-soo-and-tom-to-ripple-labs/>.

⁹⁵ Ripple. Ripple Labs Welcomes C++ Guru Howard Hinnant (2014). <https://ripple.com/insights/ripple-labs-welcomes-c-guru-howard-hinnant/>.

highlighted its team’s “engineering practices” and “continued efforts to scale the performance of the XRP Ledger”, including efforts that enabled Ripple to regard itself as “The Most (Demonstrably) Scalable Blockchain.”⁹⁶ Moreover, Ripple claimed that XRP was “The Best Digital Asset for Payments” because “When you line up the top digital assets for these attributes [speed, cost, and scalability], it’s clear that XRP is the winner.”⁹⁷

71. The impressive credentials and capabilities of new additions to Ripple’s management team, along with public statements by Ripple executives about the how the new team members would likely advance the adoption of Ripple products, XRP, and the XRP Ledger, would have provided a basis for confidence to a potential purchaser of XRP that Ripple could execute its strategy and ultimately grow the demand for XRP.

7.5 Ripple Communications on Platform Growth Projections

72. The size of a company’s target addressable market is an important consideration for investors evaluating the growth potential and value of early-stage companies such as Ripple. Investors want to know whether a given company solves a big enough problem that is related to a large market of potential customers. When discussing both Ripple’s potential growth and XRP’s potential value, Ripple executives often touted how Ripple was solving a problem in the multi-trillion-dollar payments industry and thus would create a lot of value for XRP.

73. In an interview as part of “The Cryptocurrency Investor Forum,” Breanne Madigan, Ripple’s former Head of Global Institutional Markets, described how XRP would benefit from its large addressable market:

⁹⁶ Ripple. The Most (Demonstrably) Scalable Blockchain (2017). <https://ripple.com/insights/demonstrably-scalable-blockchain/>.

⁹⁷ Ripple. How XRP Stacks Up Against Other Digital Assets (2017). <https://ripple.com/xrp/xrp-stacks-digital-assets/>.

“So for people who are newer coming in, take a look at a few individual crypto assets. Understand their utility, their core value proposition, what problem are they solving. Look at the total addressable market there. For example, in payments because of trapped capital, there’s trillions and trillions of dollars of market opportunity that XRP as a digital asset is solving for. So that’s a huge addressable market. So there you would see a driver for value creation.”⁹⁸

74. When asked about the nature of the large increase in the price of XRP in 2017 at the 2018 Yahoo Finance summit, Garlinghouse similarly tied the growth potential of XRP to Ripple’s large addressable market:

“We’re solving a problem measured in the trillions of dollars and if we can, if we can activate that asset, if we can make global commerce more efficient there’s an opportunity to drive a lot of velocity, a lot of demand, and a lot of volume across XRP. We are just at the starting line.”⁹⁹

In another interview, Garlinghouse also tied his optimism regarding the long-term price of XRP to Ripple’s large addressable market:

*The price of XRP will take care of itself over a three to five year period. **We’re building something that I think can transform a multi-trillion-dollar problem around how liquidity is managed.** If we are successful in doing that, I am very optimistic about the future. [emphasis added]¹⁰⁰*

75. Ripple’s Insights blog also frequently alluded to Ripple’s multi-trillion-dollar addressable market. For example, a 2017 article presenting Ripple’s vision described how the “\$180 trillion worth of cross-border payments made every year, with a combined cost of more than \$1.7 trillion a year” could be addressed through Ripple’s vision for the “Internet of value.”¹⁰¹ In another article featuring a report by McKinsey & Company on the global payments

⁹⁸ Video interview of Breanne Madigan with Barron’s and Grayscale Investments’ “The Cryptocurrency Investor Forum” on December 3, 2020. See <https://barronscustomerevents.com/grayscale> starting at 1:47:22.

⁹⁹ Video interview of Brad Garlinghouse at the Yahoo Finance All Markets Summit: Crypto at 9:06. February 9, 2018. <https://finance.yahoo.com/news/ripple-ceo-brad-garlinghouse-theres-lot-fud-xrp-181425025.html>.

¹⁰⁰ YouTube. Ripple CEO Brad Garlinghouse Korea Reporter Meeting. <https://youtu.be/JOAuXEY9Pg?t=1984> (2018).

¹⁰¹ Ripple. The Internet of Value: What It Means and How It Benefits Everyone (2017). <https://ripple.com/insights/the-internet-of-value-what-it-means-and-how-it-benefits-everyone/>.

market, Ripple made it a point to emphasize how **“payments offer \$135 trillion in flows, bringing in \$240 billion** in revenue [emphasis added by Ripple]” and discussed how banks were starting “to accept distributed ledger technology for commercial solutions.”¹⁰²

7.6 Ripple Communications on Use of Funds and Development Plans

76. When investment-oriented purchasers evaluate a company or project as a potential investment, they want to understand how the funds collected will be deployed by management to grow the venture. Ripple publicly described how it would use XRP sales, whether directly through programmatic or over-the-counter sales, or indirectly through compensating partners with XRP (see Sections 6.1, 6.2, and 6.3), to develop the XRP ecosystem and ultimately add value to XRP.

77. The Q1 2018 XRP Markets Report describes how Ripple would use funds released from the escrow “in a variety of ways to help invest in the XRP ecosystem.”¹⁰³ Similar language was used in many subsequent reports, sometimes with more detail on how funds from sales of XRP released from the escrow would be used by Ripple:

- “used in a variety of ways to help support the XRP ecosystem.” (Q2 2018, Q3, 2018, Q1 2019)¹⁰⁴
- “used in a variety of ways to help support the XRP ecosystem, including the RippleNet Accelerator Program and Xpring investments like Securitize.” (Q4 2018)¹⁰⁵

¹⁰² Ripple. McKinsey: Corporates Need Faster Payments, Too (2016). <https://ripple.com/insights/mckinsey-corporates-need-faster-payments/>.

¹⁰³ Ripple. Q1 2018 XRP Markets Report (2018). <https://ripple.com/insights/q1-2018-xrp-markets-report/>.

¹⁰⁴ Ripple. Q2 2018 XRP Markets Report (2018), Ripple. Q3 2018 XRP Markets Report (2018), Ripple. Q1 2019 XRP Markets Report (2019). <https://ripple.com/insights/q2-2018-xrp-markets-report/>, <https://ripple.com/insights/q3-2018-xrp-markets-report/>, <https://ripple.com/insights/q1-2019-xrp-markets-report/>.

¹⁰⁵ Ripple. Q4 2018 XRP Markets Report (2019). <https://ripple.com/insights/q4-2018-xrp-markets-report/>.

- “used in a variety of ways to develop use cases for XRP, including Xpring initiatives and RippleNet partnerships (such as MoneyGram).” (Q2 2019)¹⁰⁶

As seen above, Ripple communicated that it used XRP to fund the development of the “XRP ecosystem.” This includes the RippleNet Accelerator Program, which sought to drive adoption among financial institutions by offering volume rebates and marketing incentives.¹⁰⁷ In particular, Ripple spent millions of dollars to incentivize and subsidize MoneyGram to use its ODL product.¹⁰⁸

78. Another key use of funds from XRP sales is to increase the liquidity of the trading market for XRP. According to Ripple’s website, “Since 2012, Ripple has methodically sold XRP and used it to incentivize market maker activity to increase XRP liquidity and strengthen the overall health of XRP markets.”¹⁰⁹ More specifically, Ripple has stated that it uses XRP to provide “incentives to market makers who offer tighter spreads for payments.”¹¹⁰ These incentives are critically important because, as described in Section 5.2, tight spreads are a prerequisite for Ripple’s ODL solution to be economically viable for cross-border payments by financial institutions.

79. On other forums, Ripple’s executives also communicated that the proceeds of Ripple’s XRP sales would be used by Ripple to grow the adoption of XRP and develop the XRP ecosystem. On XRP Chat, David Schwartz (CTO) referred to Ripple’s “large stash of XRP” as a

¹⁰⁶ Ripple. Q2 2019 XRP Markets Report (2019). <https://ripple.com/insights/q2-2019-xrp-markets-report/>.

¹⁰⁷ Ripple. Ripple Rolls Out \$300M RippleNet Accelerator Program to Grow Volume and XRP Utility (2017). <https://ripple.com/insights/ripple-rolls-300m-rippletnet-accelerator-program-grow-volume-xrp-utility/>.

¹⁰⁸ See Sections 4.2 and 6.3.

¹⁰⁹ Ripple. Market Performance (2021). <https://web.archive.org/web/20201206204539/https://ripple.com/xrp/market-performance/>.

¹¹⁰ Ripple. Ripple Escrows 55 Billion XRP for Supply Predictability (2017). <https://ripple.com/insights/ripple-escrows-55-billion-xrp-for-supply-predictability/>.

“secret weapon” that it could deploy to incentivize financial institutions to use Ripple.¹¹¹ In a similar manner, on the “r/Ripple” channel on the Reddit online forum, Schwartz described Ripple’s “stash of XRP” as a “strategic weapon” to spur increased liquidity in specific XRP-fiat currency trading pairs (referred to by Schwartz as “payment corridors”) to enable financial institutions to use such payment corridors.¹¹² On the BitcoinTalk forum, Schwartz also communicated that Ripple’s stock of XRP “funds the development and ensures there’s a healthy company standing behind the network.”¹¹³

80. Larsen also describes, broadly, how Ripple uses proceeds from XRP to build the XRP ecosystem. In his interview with Money & Tech, he stated how Ripple’s “job number one”—which involves “aggressively recruiting for cryptographers and developers, ... incredibly talented technology folks, business development folks, product folks [for] building stuff that's super valuable”—is to “use the value that we're being able to monetize [from XRP] already to pump that right back into the protocol.”¹¹⁴

7.7 Ripple Communications Regarding Promoting Healthy Secondary Markets and Liquidity for XRP

81. Ripple actively undertook measures to expand the number of secondary XRP markets and build more liquid trading markets for XRP. Ripple publicly promoted such efforts,

¹¹¹ XRP Chat. XRP Has no Price Limitation-CONFIRMED at 2 (2017). <https://www.xrpchat.com/topic/11951-xrp-has-no-price-limitation-confirmed/page/2/?tab=comments#comment-122892>.

¹¹² “The second piece [of Ripple’s strategy] is to use some of Ripple's stash of XRP as a strategic weapon to incentivize the creation of pools of liquidity between XRP and currencies that are currently expensive or slow to deliver.” See Schwartz, David. https://www.reddit.com/r/Ripple/comments/6z6dn8/whats_the_best_eli5_about_ripple/dmunm3l/ (2017).

¹¹³ Schwartz’s comments are found in a thread titled, “Ripple or Bitcoin.” In response to a question, “Is the only reason for it not working as well with BTC is that Opencoin wouldn't have a stock of XRP to hand out to promote the system? If that's the only case it doesn't sound like a good reason.” Schwartz replies, “That's not the only reason, but that's a very good reason by itself. Getting mass adoption is far from a sure thing. Being able to make it free for as many people as possible for as long as possible significantly decreases the chances that all the develop[er] effort will be for nothing. Not to mention, XRP funds the development and ensures there's a healthy company standing behind the network.” <https://bitcointalk.org/index.php?topic=176077.msg1848303#msg1848303> (2013).

¹¹⁴ YouTube. Chris Larsen discusses Ripple at 13:57 to 14:53 (2014). https://youtu.be/_SpdX36p6ao?t=837.

at times even tying such efforts to increases in the price of XRP. According to Ripple, in February 2016 it announced a program that provided incentives and rebates for digital asset exchanges to list XRP.¹¹⁵ When Ripple publicly announced the listing of XRP on Bitstamp, the first participant in Ripple’s digital asset exchange incentive program, it drew attention to how Ripple’s efforts to increase liquidity and onboard banks would benefit “investors”:

*XRP is uniquely capable of introducing more liquidity to exchanges to support global payment volume, especially in exotic corridors. Ripple’s adoption with banks puts XRP in pole position to become a global settlement asset, which translates to more liquidity for Bitstamp, and more value for institutional and individual **investors**. [emphasis added]*¹¹⁶

Similarly, the Q2 2017 XRP Markets Report asserts that Ripple’s new listings at six digital asset exchanges were among several “instrumental” achievements contributing to “XRP’s incredible quarter.”¹¹⁷ When the number of digital asset exchanges reached over 50 by the end of 2017, Ripple took the opportunity to highlight how this contributed to increased trading volumes and how it was “the result of Ripple’s continued investment in the XRP ecosystem.”¹¹⁸

82. Another way that Ripple promoted its role in building liquidity and supporting healthy secondary markets for XRP is by publicly supporting market makers. Market makers serve the role of providing liquidity on an exchange by constantly posting bids and offers to trade an asset, which allows traders to have a ready-made counterparty. In the Q1 2018 XRP Markets Report, Ripple announced that it provided millions of dollars of loans to enable market makers i) to more actively “get involved in XRP markets” and ii) to “tighten spreads” so that the market

¹¹⁵ Ripple Q4 2016 XRP Markets Report (2017). <https://ripple.com/insights/q4-2016-xrp-markets-report/>.

¹¹⁶ Ripple. Bitstamp Now Trading XRP with 0% Fees (2017). <https://ripple.com/insights/bitstamp-now-trading-xrp/>.

¹¹⁷ Ripple. Q2 2017 XRP Markets Report (2017). <https://ripple.com/insights/q2-2017-xrp-markets-report/>.

¹¹⁸ *Id.* at 35.

would be more efficient for market participants. In particular, Ripple communicated how its on-demand liquidity solution would stand to benefit from the subsequently increased liquidity:

For Ripple, this additional liquidity is useful for xRapid as it increases the capacity of order books to support cross-border payments. Also, incremental liquidity in order books will lower volatility over time, further increasing XRP's ability to provide on-demand liquidity for xRapid.¹¹⁹

83. Ripple also played an instrumental role in promoting secondary markets and adding liquidity to XRP trading venues by developing “gateways” for traders to bring assets, e.g., BTC or USD, onto the XRP Ledger to trade with XRP. These gateways were operated by various entities such as Bitstamp, and provided market participants with a venue to create a gateway-backed asset on the XRP Ledger. For example, one could give \$100 to Bitstamp and receive \$100 on the XRP Ledger which could then be used to trade with XRP and other assets on the XRP Ledger. As these gateways were the only sources to inject liquidity for trades on the XRP Ledger, Ripple stated that it made it a priority to onboard gateways by “providing XRP incentives and extended technical support for gateways.”¹²⁰

84. Ripple's actions in promoting healthy secondary markets also bolstered its bull case of facilitating global payments for financial institutions. As described in its Q4 2017 XRP Markets Report, “In order for XRP to be highly efficient as a settlement asset for cross-currency transactions, it will continue to need greater volume and depth of order books [i.e., greater liquidity]. These market attributes increase its ability to support much larger cross-border payments and thus increase its utility broadly.”¹²¹ Thus, Ripple's efforts to increase the liquidity

¹¹⁹ Ripple. Q1 2018 XRP Markets Report (2018). <https://ripple.com/insights/q1-2018-xrp-markets-report/>.

¹²⁰ Ripple. How Ripple Labs supports gateways (2014). <https://ripple.com/insights/ripple-labs-helps-gateways/>.

¹²¹ Ripple Q4 2017 XRP Markets Report (2018). <https://ripple.com/insights/q4-2017-xrp-markets-report/>.

of XRP markets served to both attract additional investors as well as develop the XRP ecosystem needed to execute its global payments strategy underlying the bull case for investment in XRP.

7.8 Perspective of a Reasonable Purchaser with Respect to Ripple Communications

85. Investment-oriented purchasers of digital assets often pay close attention to company communications related to the factors described above. Ripple’s extensive public comments and reports about these topics likely served to inform and persuade investment-oriented purchasers about the potential reward of purchasing XRP for the purpose of generating a profit. Indeed, the use of terms such as “traction,” “market fit,” “total addressable market,” and even “investors” when describing Ripple’s progress and growth potential are words typically understood by market participants to mean that they should view buying XRP as a potentially profitable investment.

86. Purchasers of XRP for cross-border payments would also be interested in some of these topics, but not all. For example, a money transmitter likely cares deeply about specific topics like the liquidity of the digital asset trading platforms it needs to rely on to complete an ODL transaction, but is less interested in Ripple’s communications about the bull case for the price of XRP. Ripple’s target customers for ODL are private financial institutions, and these organizations are less likely to engage in discussions with Ripple’s management team on a website message board like BitcoinTalk.

87. It is my opinion from carefully following the digital asset space that many of Ripple’s public communications conveyed to reasonable purchasers of XRP an expectation of future profit derived from the efforts of Ripple.

8. Summary of Findings and Conclusions

88. Based on my professional experience in the blockchain space, in part as an investor and trader in digital assets, as well as my analysis of the public statements, documents, and design decisions of Ripple, I am able to reach the following findings and conclusions:

89. Both the designed economic properties of XRP and the actions and statements of Ripple in promoting the future growth of the usage of XRP support an investment use case. Over the course of the Issuance Period a reasonable purchaser of XRP would have had an expectation of generating profit based on the efforts of Ripple and its management to accomplish the growth strategies that Ripple advertised to the public as being already achieved or planned for the future. The fixed-supply model of XRP (along with the eventual further restriction of float through escrows) created a direct link between the perceived success of Ripple's product offerings and the price of XRP. Given this relationship between Ripple's performance and the price of XRP, a reasonable purchaser would have closely considered many factors that were publicized by Ripple such as disclosed partnerships with financial institutions, the quality of Ripple's management team, the target addressable market for Ripple's products, and the availability of liquidity on trading platforms for XRP. Ripple's management publicly touted the growth potential for the usage and value of XRP, and explained a coherent strategy for how they would attempt to achieve that future success for XRP.

90. Certain aspects of the design characteristics of XRP and the promotional activity of Ripple did not appeal to a pure utility use case. The primary promoted use case, a financial institution using XRP in order to exchange one fiat currency for another and send the funds in a cross-border transaction, was flawed for two important reasons: 1) the financial institution needed to execute two separate exchange transactions on digital trading platforms that, unless

subsidized by Ripple, created a strong headwind to economic viability by incurring two rounds of fees and slippage and 2) parties involved, whether financial institutions or other market participants, had unwanted exposure to the price and volatility of that bridge asset.

9. Right to Supplement

91. The opinions expressed in this report are based on my review and analysis of the documents and data as set forth herein. I reserve the right to supplement my report and analysis based on any new evidence brought to my attention.

