WHITEPAPER

A COMPREHENSIVE APPROACH TO DETERMINE THE FAIR MARKET VALUE OF XRP

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OVERVIEW

If the lawsuit between the SEC and Ripple had never happened, and the XRP Ledger had been in a position to grow organically without interference from the legacy banking system and the federal government, ***what could the value of XRP have been?***

The objective of the Valuation Committee was to answer that question. Understanding exactly how to do that introduced other complex tasks, such as determining all the value that exists in the world, and how much of that value will ultimately be transacted daily on the blockchain.

We chose to build the XRP valuation models in public, collecting questions and feedback from the broader community along the way. The reactions varied from immensely supportive to outright hostile, with many flavors in between.

Some people questioned our ***decision to be transparent*** and felt we should have waited until we were finished to share information about anything that we built and learned.

However, we believe the **choice we made was the correct one**. Throughout each step of the process, **new contributors appeared** at the perfect moment with the right idea, question or model.

The valuation exercise was truly a ***group effort***. It confirmed our belief that a **collection of minds committed** to a **common goal** is truly a force to be reckoned with.

The analysis undertaken by this Valuation Committee was intended to understand, and quantify, the ***fair market value of XRP***. Initially, this was taken on to calculate the financial harm inflicted upon retail holders of XRP from the SEC lawsuit.

However, as we analyzed the output of the various models and discussed what we learned from the results, one thing became very clear.

The financial system benefits from stability. Sovereign wealth must be protected. The global supply chain needs to run as smoothly as a well-oiled machine.

If **global peace** and **prosperity** is the goal for humanity (which it certainly is for the authors of this paper), a **high valuation for XRP is necessary** for that goal to be reached.

The models tackled the valuation from a wide array of quantitative approaches used in other industries. This meant we were not subject to any specific industry biases, which was key to our goal of being thorough and comprehensive.

From our empirical analysis of the model results, we made several insightful conclusions about how a digital currency like XRP works.

The **two main forces** that directly impact the valuation are **transaction utility** and **store of value**. Due to the Virtuous Cycle dynamic, these forces can compete with each like an exponential growth cyclone.

However, the forces are not equal in their power. The **store of value** component, which represents a substantially larger segment of global wealth, is by far **more influential on the price of XRP.**

The most significant, and debatable assumption, across all models was clear.

Will XRP be primarily used as a utility asset to exchange value?
OR
Will it become the next world reserve currency that not only transacts, but is used to store the wealth of the world?

METHODOLOGY

The Valuation Committee chose to build multiple models to assess the value of XRP. Since this asset is unlike any other traditionally valued in finance and economics, it was not clear initially what the best methodology would be.

Once the process of building the models began, the Valuation Committee identified ***several different hypotheses to test***, and the models built were the result of setting the goal to ***innovate*** and establish a ***new paradigm*** for **digital asset valuation**.

The Valuation Committee members have a very ***diverse*** set of ***professional skills*** and ***background experiences*** which enabled a broad set of ***mathematical***, ***economic***, ***financial*** and ***scientific*** principles to be leveraged.

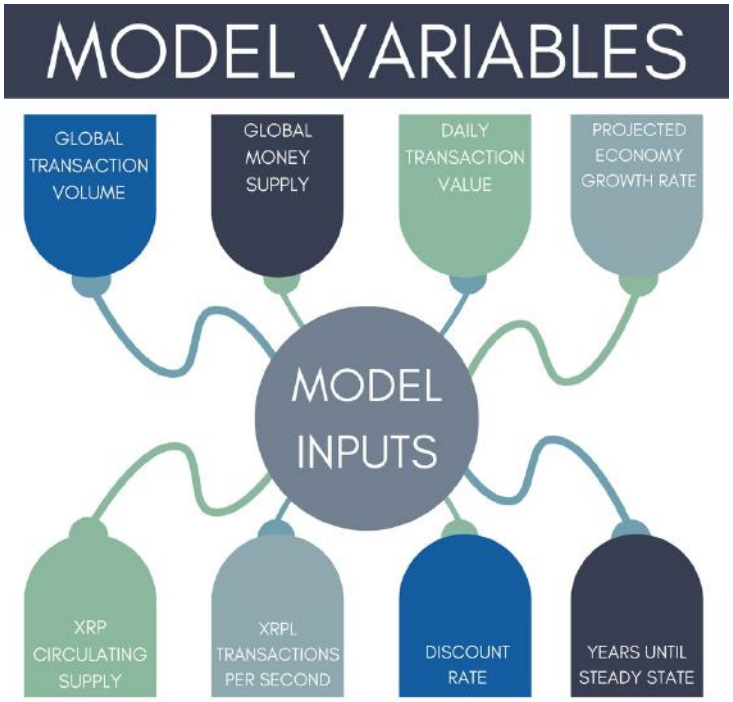
Each model was built from a set of base assumptions and methods using analysis tools to support scenario and simulation testing.

Several models looked at **extreme conditions** with the intent of **establishing the upper and lower limit bounds**.

It was clear after the first few models were completed that a summary analysis where the price assessments were reviewed in aggregate to determine overlap and common traits could lead to insightful conclusions around the valuation.

In other words, ***what are the macro conclusions that we learned***?

This question was at the forefront of many internal discussions. We knew that the specific numbers coming out of the models were secondary to understanding the role of concepts like the Virtuous Cycle.



It is important to clarify the NONE of the models are price predictions or forecasts.

The models are simulations to quantify the value of XRP in a specific sets of conditions.

Since the future is unknown, looking at potential situations enabled us to learn which variables are the ***most influential drivers*** of the value of XRP.

For example, it is well known that transactions can happen very quickly on the XRPL, so an initial goal was to quantify how processing a huge volume of large transactions quickly impacted the corresponding value of XRP.

Some models focused exclusively on transactions, some exclusively on store of value, and others on both applications.

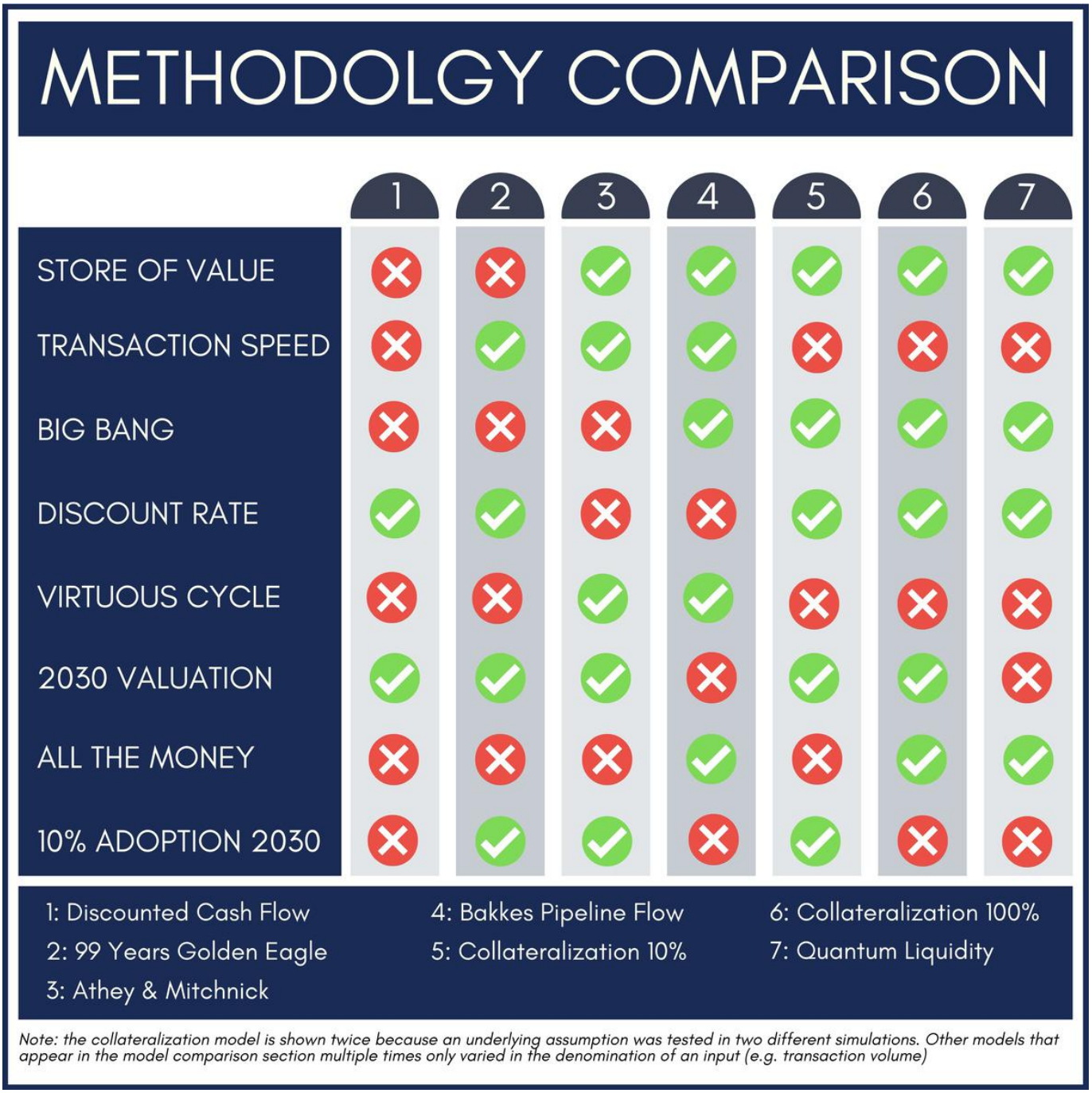
This was very important in enabling the Valuation Committee to understand what are truly the drivers of price and which simply stated, are not significant influences.

The transaction-focused models addressed the speed of transactions variable, and interestingly, there was not a significant difference in the calculated price (in nominal dollar terms) between the simulated number of transactions per second, hour or even day.

Our conclusion was there is **not a tipping point for efficiency**. The fact that XRP can move value quickly means the high price necessary for a stable financial system is more substantially impacted by the store of value aspect.

When the models were compared against each other, the spread in valuations was quite large.

This reinforced the importance of the assumptions, specifically whether global financial institutions plan to use XRP as a store of value (similar to gold or USD) at scale.

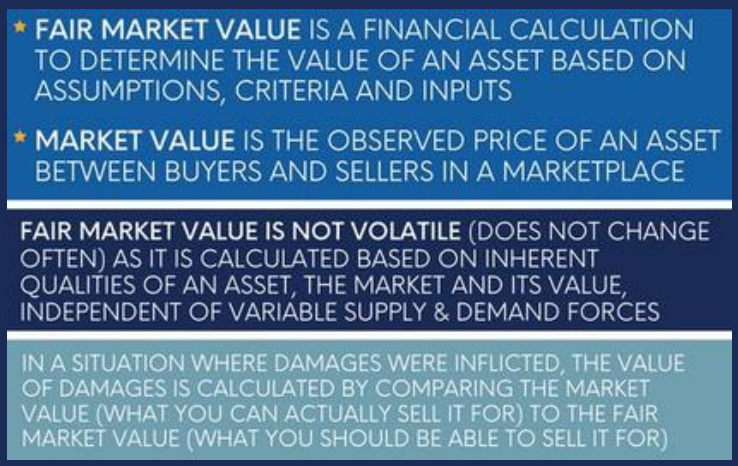


FAIR MARKET VALUE

Is the fair market value of a digital asset the same as the price on an exchange?

No. This is a common source of confusion when discussing the valuation effort for XRP.

The fair market value of an asset (stock, house, digital asset) is a financial calculation based on its intrinsic value. It uses a formula (a model), inputs and assumptions.

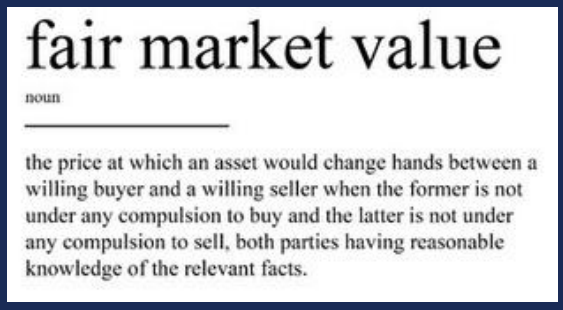


The fair market value is not volatile and does not change regularly. ***Fair market value requires that both the buyer and seller have access to the same material information necessary to make an informed transaction decision.***

The market value of an asset is its price in a marketplace between buyers and sellers. The value can be very volatile, and is subject to irrational market forces like consumer sentiment.

For example, media coverage of a person connected to an asset could dramatically impact its trading price, however, the inherent value of the asset hadn't changed.

For example, if a news personality trashed a stock on TV, and that business sold to government agencies, the stock price could fall.



But the earnings and long term value of the business are not tied to short term bad publicity. ***Market prices are manipulated as influential forces are ever present.***

The forces include consumer perceptions, media coverage, lawsuits, trading trends that trigger other buyers and sellers, as well as general feelings about the economy.

The SEC lawsuit substantially lowered the market price of XRP. Most digital asset exchanges used the lawsuit as pretext to delist XRP. The lawsuit created extreme fear and uncertainty among businesses, developers and investors around holding, developing applications on the XRPL and using the asset.

Businesses that might have adopted XRP for payments likely did not out of fear that using a security for that purpose would be illegal and/or a nightmare in terms of paperwork filings and result in adverse taxable events.

As a result, ***the market value of XRP has been suppressed due to manipulation of perceptions*** (some very real while others are simply fear based). Many profited financially from knowing the uncertainty was coming.

That said, understanding the fair market value of XRP is key to understanding how the SEC lawsuit impacted the quantitative value of retail investors' portfolios.

When there is **information asymmetry** (the sellers had access to different information than the buyers) there is been a deviation between the market price and the fair market value.

THE IRS & FAIR MARKET VALUE

WHAT IS FAIR MARKET VALUE (FMV)?

To figure how much you may deduct for property that you contribute, you must first determine its fair market value on the date of the contribution.

FAIR MARKET VALUE
Fair market value (FMV) is the price that property would sell for on the open market. It is the price that would be agreed on between a willing buyer and a willing seller, with neither being required to act, and **both having reasonable knowledge of the relevant facts**. If you put a restriction on the use of property you donate, the FMV must reflect that restriction.

FACTORS

In making and supporting the valuation of property, all factors affecting value are relevant and must be considered.

These include:
1) The cost or selling price of the item,
2) Sales of comparable properties,
3) Replacement cost, and
4) Opinions of experts

DETERMINING FAIR MARKET VALUE

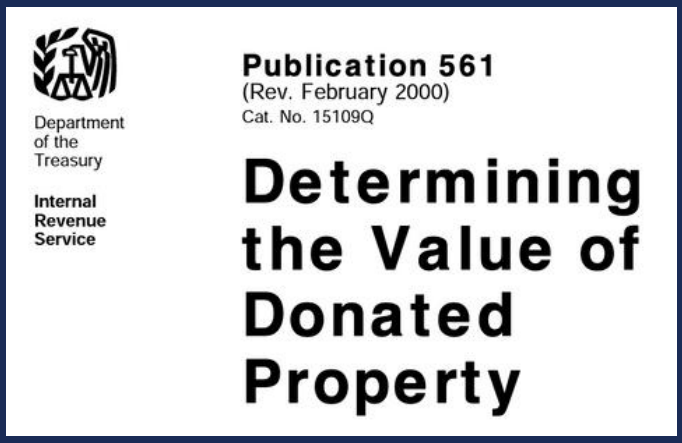
Determining the value of donated property would be a simple matter if you could rely only on fixed formulas, rules, or methods. Usually it is **not that simple**. Using such formulas, etc., seldom results in an acceptable determination of FMV. **There is no single formula that always applies when determining the value of property.**

This is not to say that a valuation is only guesswork. You must consider all the facts and circumstances connected with the property, such as its desirability, use, and scarcity.

For example, donated furniture should not be evaluated at some fixed rate such as 15% of the cost of new replacement furniture.

When the furniture is contributed, it may be out of style or in poor condition, therefore having little or no market value. On the other hand, it may be an antique, the value of which could not be determined by using any formula.

Information in this graphic was taken verbatim from the IRS document



OPINIONS OF EXPERTS

Generally, the weight given to an expert's opinion on matters such as the authenticity of a coin or a work of art, or the most profitable and best use of a piece of real estate, depends on the knowledge and competence of the expert and the **thoroughness with which the opinion is supported by experience and facts**.

For an expert's opinion to deserve much weight, the facts must support the opinion.

UNUSUAL MARKET CONDITIONS

The sale price of the property itself in an arm's-length transaction in an open market is often the best evidence of its value. When you rely on sales of comparable property, the sales must have been made in an open market.

If those sales were made in a **market that was artificially supported or stimulated so as not to be truly representative, the prices at which the sales were made will not indicate the FMV.**

For example, liquidation sale prices usually do not indicate the FMV. Also, sales of stock under unusual circumstances, such as sales of small lots, forced sales, and sales in a restricted market, may not represent the FMV.

USING PAST EVENTS TO PREDICT THE FUTURE

A common error is to rely too much on past events that do not fairly reflect the probable future earnings and FMV.

SOURCE: Publication 561 (Rev. February 2000) Cat. No. 15109Q "Determining the Value of Donated Property"

THE VIRTUOUS CYCLE

A key economic principle used in several models is the ***exponential growth dynamic*** known as the ***Virtuous Cycle***.

XRP is a utility currency which means it can function in two specific roles. It can serve as money to enable ***transfers of value*** (for payments and tokenized assets) and it can serve as a ***store of value***.

XRP adoption within the banking sector was curtailed due to the stigma and concern that resulted from to the SEC vs. Ripple lawsuit.

However, the case will end eventually, and the virtual currency will hopefully have the legal clarity it needs to serve in its intended purpose.

Initially, that will likely be as a payments currency within the banking sector. As adoption grows, it should become more evident to other industries that **using blockchain assets for payments and the transfer of tokenized assets is more efficient** than the current (and antiquated) banking system.

Consequently, ***new use cases will emerge*** to leverage the cost and time savings in digital asset payments. This is known as ***Jevon's Paradox*** (click here for more).

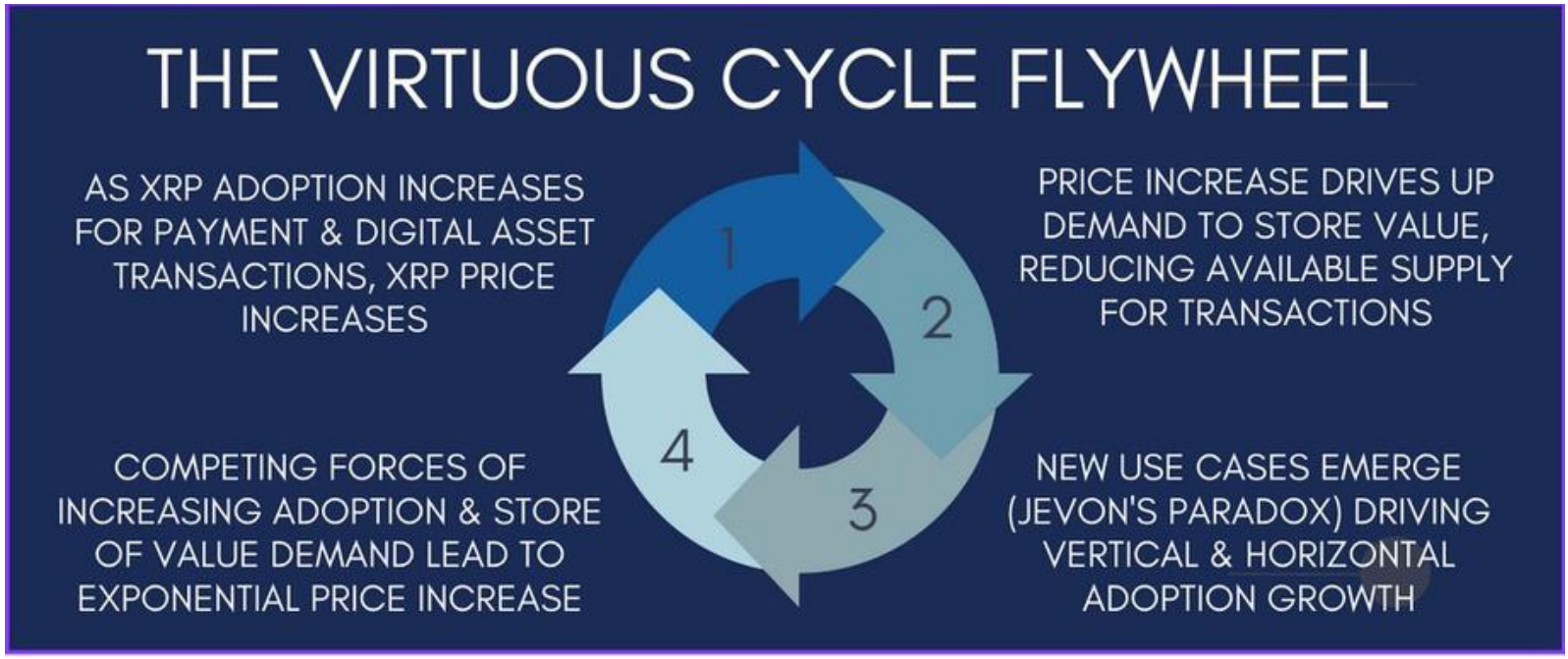
As more and more new uses emerge, and the utility of XRP gains momentum, the price will increase. Consequently, some market participants could see the rising price as a signal that XRP is a good store of value.

People need to store their wealth somewhere, so an asset that is steadily increasing in price is a very attractive option.

When more people (and institutions) increase their holding of XRP (storing wealth in the asset), those tokens will be removed (at least temporarily) from the circulating supply available for transactions.

This becomes a ***repeating flywheel*** that builds upon itself via the ***compound effect*** and is known as the ***Virtuous Cycle***.

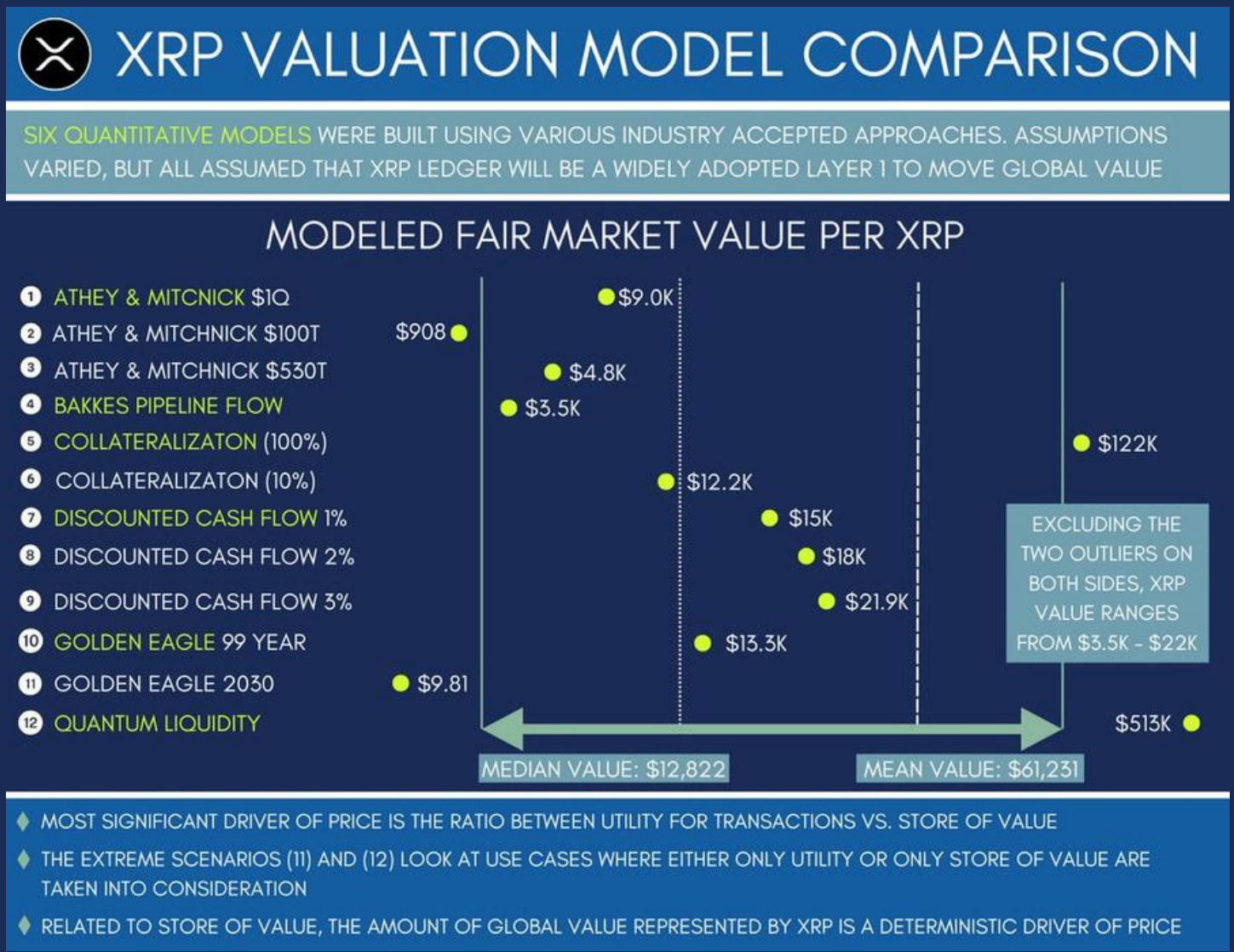
As the flywheel goes around and around, it picks up momentum and accelerates.



CROSS MODEL COMPARISON

A wide range of potential values was observed across the simulations, which highlighted the importance of understanding the role of transaction value vs. store of value.

The most significant driver of XRP asset price centers around how much the world decides to use the asset to store wealth. This will likely happen AFTER people observe modest price increases from utility use which is why the virtuous cycle concept is key to modeling what the most likely outcome could have looked like.



A world where "everything is tokenized" means global value migrates to the blockchain and the impact on ALL THE MONEY (and assets) moving via the XRPL is massive. While we cannot yet know how much of that value will transact and be stored on the XRPL, the intent of the XRP valuation exercise was to quantify what the ecosystem could look like had the lawsuit not slowed down the organic growth potential of the XRPL.

XRP VALUATION MODEL #1

FAIR MARKET VALUE SIMULATION MODEL

MODEL NAME	Pipeline Flow Model	FOUNDATION	Evolutionary Biology & Ecology
MODEL BUILDER	Dr. Deon Bakkes, PhD	XRP FUNCTION	Transactions & Store of Value

APPROACH

- Model based on biological & environmental systems that evolve and adapt over time
- Design of model based on a dynamic pipeline that adjusts based on the volume of value flow throughout the financial ecosystem
- Most sophisticated model in the set that accounts for several scenarios, including a steep initial rise in price that leads retail to sell resulting in a dramatic drop in price
- Pipeline Flow model addresses transaction volume, store of value, factors in supply & demand interaction and competitive interaction dynamics

ASSUMPTIONS

- Assumes a "big bang" event that drives FX exchange volume onto the XRPL quickly
- A large price increase early in the adoption curve leads to a sell off, and decrease in price (not desirable to financial institutions)
- Model looks at key ratios in the calculations, including the ratio of total assets globally vs. those transacted daily, and XRP circulating supply vs. XRP traded daily
- Assumes transactions can happen every second during each of the 86.4K daily seconds

METHODOLOGY

- Model looks at protocol as a dynamic system analogous to water moving through a set of pipes
- The water is the value that flows through the system
- The pipes are the payment rails within the system
- The amount of pipes is the supply of XRP. This includes the circulating supply and the inactive supply.
- The diameter of the pipe is the price of XRP (which is elastic and can expand and contract as the value moves through the system)

CONCLUSIONS

- This model does not point a specific outcome as it looks to shape how the ecosystem will evolve over time based on changes in relative importance of supply and demand
- Understanding how early events (initial increase in price) impact subsequent events was a key element to the simulations from this model
- Model clearly demonstrated how price volatility could happen, and why that could be problematic for financial institutions

INSIGHTS

This model was very different from the others in that it treats the XRPL as an ecosystem that reacts, evolves and adapts (similar to biological systems). Consequently, it is the most advanced model built by the Valuation Committee and enables simulations of the various inputs. The value of this model isn't tied to any single value output, but to enable users to understand how the value over volume 'protocol' to determine price could react when certain conditions are present.

BAKKES PIPELINE FLOW MODEL

VALUE-BY-VOLUME FLOWING THROUGH THE SYSTEM

IF A BIG BANG FLIP HAPPENS, PRICE COULD PUMP & THEN DROP BEFORE TRANSITION TO EXPONENTIAL GROWTH VIA JEVONS PARADOX ADOPTION

FINANCIAL SYSTEM PLUMBING NETWORK

WATER
VALUE FLOWING THROUGH THE SYSTEM

PIPES
PAYMENT RAILS WITHIN THE SYSTEM

AMOUNT OF PIPES
CIRCULATING SUPPLY OF $XRP

PIPE DIAMETER
PRICE OF $XRP

SIMILAR TO A THROUGHPUT-BY-CAPACITY FLOW MODEL WHERE FLOW IS ANALOGOUS TO PRICE

MODEL ASSUMPTIONS

- ✓ FX daily activity starts with "big bang cutover" followed by slow to rapid exponential increase up to 4.117% of total global assets
- ✓ Supply of liquid XRP daily follows a saturation curve to model increasing competition for supply (rapid flood approaching a maximum at ~60% of circulating supply).
- ✓ A large price increase will stimulate a large supply increase due to increased selling activity.

XRP VALUATION BY MARKET CONDITION EVOLUTION

THE AMOUNT OF XRP UNLOCKED AND ABLE TO BE SOLD AFTER THE FIRST MAJOR PRICE INCREASE WILL IMPACT THE MODELED CORRECTION THAT FOLLOWS

PIPELINE FLOW XRP VALUATION

TOTAL GLOBAL ASSETS	→	$5.5 Quadrillion
DAILY USD TRANSACTION VOLUME	→	$6.6 Trillion
RATIO GLOBAL ASSETS TRADED DAILY	→	0.132%
XRP CIRCULATING SUPPLY	→	50.8 Billlion
XRP TRADED DAILY	→	1.86 Billion
RATIO XRP TRADED DAILY	→	3.7%
TOTAL NUMBER OF SECONDS	→	86,400
PRICE PER XRP	=	**$3,541**

MODEL DRAWBACKS

- ✗ Not currently able to model time explicitly. Time is implicit in market conditions state, but may not always directly correlate
- ✗ Supply-demand behavior is limited to mathematical functions in this model (supply-demand can be choppy and unpredictable in reality)

PIPELINE FLOW PRICE METHODOLOGY

- The price formula is applied to predictive models of hypothetical supply-demand scenarios based on exponential and rarefaction curve functions.
- These functions are simulated such that upper and lower bounds, as well as curve shape characteristics, can be controlled for.
- Curve functions representing supply-demand behaviour are plotted along xy axes where the x-axis represents market conditions state (1-100) and the y-axis represents ratios of active to inactive capital in terms of value demand (FX) and volume supply (XRP readily trading).
- These ratios are applied to the value-by-volume formula to model hypothetical changes in price according to supply-demand behavior assumptions.

MODEL BUILT BY DR. DEON BAKKES, PHD EVOLUTIONARY BIOLOGIST AND ECOLOGIST

XRP VALUATION MODEL #2

FAIR MARKET VALUE SIMULATION MODEL

MODEL NAME	Athey & Mitchnick Model	FOUNDATION	Economics & Monetary Theory
MODEL BUILDER	Susan Athey & Robert Mitchnick	XRP FUNCTION	Transactions & Store of Value

APPROACH

- Model was built in 2018 and was first to be publicly shared around valuation of XRP
- Addresses the competing roles of utility (transactions) and store of value
- Quantifies the important role of rate of adoption on the corresponding value. The virtuous cycle impact is tied to adoption rate
- Innovative model to first understand how the use of XRP will create demand for people to hold the asset as a store of value, which removes available supply from potential use in transactions

ASSUMPTIONS

- XRP is used for cross border payments and foreign exchange (FX) transactions
- 10% of global transactions are run using the XRPL by 2030
- The XRP held in the escrow is assumed to NOT be available for store of value use
- Discount rate applied to avoid assuming that the future value of money is the same as in the present time

METHODOLOGY

- Model addresses transaction speed, and used a time difference between transactions of one second. However, the price did not vary much when that was changed to an hour or even a day (on a nominal dollar basis)
- Looked at impact of two very large markets – cross border payments and FX being transacted via the XRPL. The faster this migration happens, the greater the impact on the value of XRP

CONCLUSIONS

- The store of value impact on XRP value is considerably more influential than the value derived from transaction use
- Excluding major markets like derivatives and real estate undervalues the potential asset valuation, therefore this model is conservative
- This model was pivotal in quantifying the competing forces of transactions and store of value, which is challenging to model

INSIGHTS

The A&M model was the original used to simulate potential values for XRP, and to understand the impact of store of value competing with transaction utility. All models, especially those built first, must rely on assumptions that can be difficult to verify. As a result, conservative numbers are generally chosen. Adoption of the XRPL could happen very quickly in response to a crisis, and use in additional financial markets (*e.g.*, derivatives) is very possible which means the consequent value of XRP could be substantially higher than simulated in this model.

ATHEY & MITCHNICK MODEL

COMPETING FORCES OF TRANSACTION UTILITY & STORE OF VALUE

DISCOUNT RATE APPLIED TO CALIBRATE THE FUTURE VALUE OF MONEY TO THE PRESENT DAY (2023)

MODEL ASSUMPTIONS

- ✓ 10% OF THE TOTAL GLOBAL TRANSACTIONS MOVE TO XRPL BY 2030
- ✓ 10% OF GLOBAL ASSETS MOVE TO XRPL BY 2030
- ✓ XRP IN ESCROW NOT AVAILABLE FOR STORE OF VALUE
- ✓ DISCOUNT RATE APPLIES EVEN IN ASSET BACKED CURRENCY ECONOMY

THE VIRTUOUS CYCLE FLYWHEEL

1. AS XRP ADOPTION INCREASES FOR PAYMENT & DIGITAL ASSET TRANSACTIONS, XRP PRICE INCREASES
2. PRICE INCREASE DRIVES UP DEMAND TO STORE VALUE, REDUCING AVAILABLE SUPPLY FOR TRANSACTIONS
3. NEW USE CASES EMERGE (JEVON'S PARADOX) DRIVING VERTICAL & HORIZONTAL ADOPTION GROWTH
4. COMPETING FORCES OF INCREASING ADOPTION & STORE OF VALUE DEMAND LEAD TO EXPONENTIAL PRICE INCREASE

STORE OF VALUE SENSITIVITY ANALYSIS

The Rate & Magnitude around Migration of Value onto XRPL is a Significant Price Driver

XRP VALUE CALCULATION

DAILY TRANSACTION VALUE	→	$700 BILLION
TIME BETWEEN TRANSACTIONS	→	1 SECOND
STORE OF VALUE DEMAND	→	$530 TRILLION
XRP CIRCULATING SUPPLY	→	56.5 BILLION
DISCOUNT RATE	→	10%
TIME UNTIL STEADY STATE	→	7 YEARS (2030)
PRICE PER XRP	→ =	**$4,813**

MODEL DRAWBACKS

- ✗ DOES NOT ACCOUNT FOR IMPACT OF SUPPLY SHOCK AND RECOVERY ON PRICE
- ✗ DOES NOT ADDRESS HOW CBDC ADOPTION WOULD IMPACT TRANSACTION VOLUME
- ✗ NOT ABLE TO ACCOUNT FOR NEW USES CASES THAT EMERGE AFTER ADOPTION

QUANTITATIVE THEORY OF MONEY

Approach based on the incorporating two primary functions of money: (1) medium-of-exchange and (2) store-of-value

In order to quantify these two functions and capture their translation into price, the impact of supply and demand is measured in various scenarios

The velocity of money in any economy: M*V=Y
M = Monetary base V = Velocity of money Y = Transaction volume

A common timeframe for today's transformational technologies appears to range from 10-20 years between inception and widespread adoption

"**XRP SUCCESS CASE**" IS A STATE OF THE WORLD WHERE XRP IS WIDELY-USED FOR **CROSS-BORDER PAYMENTS**, AND ADOPTED BY FINANCIAL INSTITUTIONS, CORPORATIONS AND INDIVIDUALS FOR **FX TRANSACTIONS**

XRP VALUATION MODEL #3

FAIR MARKET VALUE SIMULATION MODEL

MODEL NAME	99 Year Golden Eagle Model	FOUNDATION	Banking Principles
MODEL BUILDER	Business Professional in India	XRP FUNCTION	Transactions

APPROACH

- Accounting based approach that quantifies the role of transactions on the value of XRP
- Since most global reserve currencies have a lifespan of 100 years, this model looked at a long term "life cycle" view of asset value
- As with the Athey & Mitchnick Model, this model leverages the Quantity Theory of Money concept where money is primarily used as a medium of exchange
- Transactions on the XRPL process very fast and efficiently which was a key facet to this model (understanding value that results from utility adoption)

ASSUMPTIONS

- XRP is exclusively a transaction currency and is NOT used for speculative investing or as a store of value
- The time value of money is consistent across the globe, and the follows a growth rate of 10%
- Transaction speed will not change in the future, and is fixed at 1,500 transactions per second
- Cumulative annual growth rate of world trade (CAGR) follows a specific path until 2030, and deviates after that point
- XRP will have competition from other networks and will only capture 54% of the market on average over the 100 year period

METHODOLOGY

- A unique element to this model is a probabilistic scenario calculation that weighs the price based on the likelihood of four potential supply outcomes: Total supply (100B); Liquid Supply (83B); Current Circulating Supply (56.6B); and Future Circulating Liquid Supply (36.9B)
- The scenarios address the variable of the circulating supply of XRP, and how much will be available for transactions in the future. Because this variable has a significant impact on the modeled price of the asset, it was important to look at various options.

CONCLUSIONS

- This model isolated the impact of long term utility on the value of XRP. However, it is very likely that substantial portions of the circulating supply are removed to store value
- The price of XRP due to transaction utility increases slowly at first, with higher levels of growth in later years
- This model took a very long term approach to growth around XRP utility, and how the value of XRP will be held off market as a store of value

INSIGHTS

This model was focused exclusively on the transactional utility of XRP as a medium of exchange. Consequently, the impact on the price was much lower than observed in the store of value focused models. Over a long period (99 years), the value does not increase until the later part of that time period, similar to how compound returns provide the largest magnitude increases after a substantial amount of time.

99 YEAR GOLDEN EAGLE MODEL

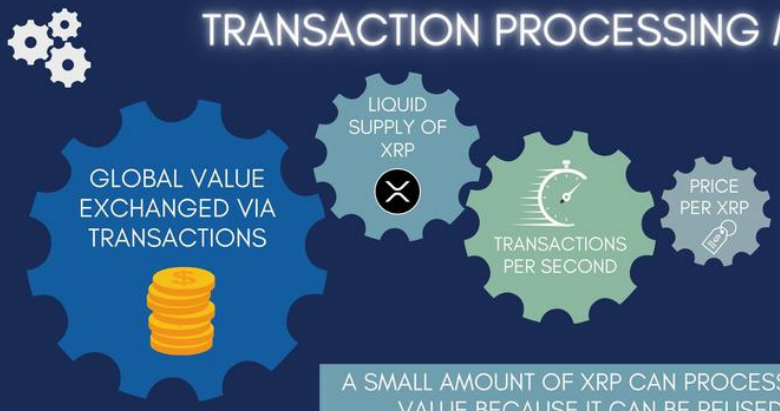
VALUATION OF XRP BASED ON QUANTITATIVE THEORY OF MONEY OVER 99 YEARS

IF VAST MAJORITY OF XRP ASSETS ARE AVAILABLE FOR TRANSACTION PROCESSING, THE VALUE OF XRP NEED TO RISE SIGNIFICANTLY TO COVER TRANSACTION VOLUME

MODEL ASSUMPTIONS

- ✓ Valuation based on Global utility of XRP. Demand driven by use. NO speculative demand
- ✓ Time Value of Money consistent globally (Growth Rate = 10%)
- ✓ Transactions per second is 1,500 will remain same throughout life cycle
- ✓ Cumulative annual growth rates (CAGRs) world trade 6%, world money 20% and store of value is 87% to 2030, 20% from 2031 to 2121

TRANSACTION PROCESSING MACHINE



THE XRP LEDGER IS A VERY EFFICIENT SYSTEM THAT PROCESSES 1,500 TRANSACTIONS PER SECOND

A SMALL AMOUNT OF XRP CAN PROCESS A LARGE AMOUNT OF VALUE BECAUSE IT CAN BE REUSED OVER AND OVER

XRP UTILITY ASSET PROJECTIONS OVER TIME

THE 99 YEAR GOLDEN EAGLE MODEL PROJECTED OUT VALUE OVER A 99 YEAR PERIOD. ASSUMES LIQUID SUPPLY IS STABLE, BUT TRANSACTION VALUE INCREASES

99 YEAR GOLDEN EAGLE XRP 2030 VALUATION

GLOBAL TRADE (ANNUAL)	$28.5 Trillion
GLOBAL MONEY	$5.3 Quadrillion
GLOBAL STORE OF VALUE	$112 Trillion
XRP MARKET SHARE	54%
XRP INITIAL LIQUID SUPPLY	83 Billion
VELOCITY OF MONEY SUPPLY	11,826
EXPECTED TERMINAL VALUE 2121 NPV-10	$10,341
XRP 2121 NPV-10 PROBALISTIC SUPPLY	= **$13,386**

MODEL DRAWBACKS

- ✗ Does not address pressure from holding XRP for speculative investment returns
- ✗ Does not account for new use cases that emerge as they are unknown at this time

TRANSACTIONS ARE A MEDIUM OF EXCHANGE

- ✦ Quantity Theory of Money (QTM): Utility tokens' function as the medium of exchange, or to put it another way, the only "legal tender" within their respective networks, creating meaningful parallels with fiat currencies.
- ✦ Equilibrium point where Demand & Supply meets will provide Equilibrium Price Points
- ✦ Velocity of XRP allows use of same XRP multiple times and XRP's Transaction handling Per Second (TPS) is 1,500 consistently 24x7. Considered Velocity factor of 0.25.

QUANTITY THEORY OF MONEY

$$p = \frac{1}{P} = \frac{D \times s}{M \times f \times V}$$

p=token value
s=market share
V=token velocity
P=price level
M=Total token supply
f=float factor

MODEL BUILT BY A SENIOR PERSON FROM INDIA HAVING 20 YEAR'S EXPERIENCE IN GLOBAL ACCOUNTING ACROSS MULTIPLE INDUSTRY AND IS A LONG TERM XRP INVESTOR SINCE 2017

XRP VALUATION MODEL #4

FAIR MARKET VALUE SIMULATION MODEL

MODEL NAME	Discounted Cash Flow	FOUNDATION	Banking Principles
MODEL BUILDER	Silvercliff Partners	XRP FUNCTION	Transactions

APPROACH

- DCF approach is a commonly used method for understanding the future value of money in the present time
- The XRP Ledger may be viewed as a "pipeline of value" where the value passing through the XRPL can be thought of as cash flow through a traditional business system
- The value of money changes over time, so when an investment is made, there is a risk that the return could be lower than if the money were deployed elsewhere
- The DCF model looks how the transaction value of money moved via XRP increases over a 10 year time period, and the corresponding impact on the price of XRP

ASSUMPTIONS

- The base volume of transactions was derived from the current global GDP. See Appendix II
- Generally, a higher discount rate is a conservative view, and a lower discount rate is an optimistic view. In the DCF model, we looked at a range of values (6%-12%) and chose a conservative input of 10%
- While the DCF methodology is commonly used to value businesses in the world of investment banking, it does not account for the fact that XRP will be removed from the circulating supply as a store of value

METHODOLOGY

- A discount rate was applied to the calculation, which is key to the DCF methodology. This is used to quantify the impact of risk and the cost of capital
- A staggered adoption rate was chosen based on observed growth in other industries. We did not assume growth would be linear
- Terminal value is the value of XRP beyond the timespan we looked at (2030), which was discounted to the present time (2023)

CONCLUSIONS

- Difficult to know which discount rate & growth rate will accurately describe the future, therefore, a conservative set of assumptions were chosen
- While it is insightful to look at the role of various inputs on the transactional value, excluding the impact of store of value on the circulating supply limits the accuracy of this approach
- Utility adoption will likely lead the financial system to move towards the most efficient system to exchange value

INSIGHTS

The Discounted Cash Flow approach was key to understanding the transactional value of XRP. The range of potential values tied to various discount rates and economic growth rates illustrate the critical role of model assumptions. If economic growth rates are considerably higher once digital asset adoption spurs new businesses and economic models, the observed adoption (and consequent price increase) could be considerably higher.

DISCOUNTED CASH FLOW MODEL

MEASURING THE PRESENT VALUE OF MONEY IN THE FUTURE

DISCOUNTED CASH FLOW MODEL ADAPTED TO ASSESS IMPACT ON GLOBAL TRANSACTIONS OVER 10 YEARS, AND DISCOUNTING THE VALUE TO CURRENT YEAR

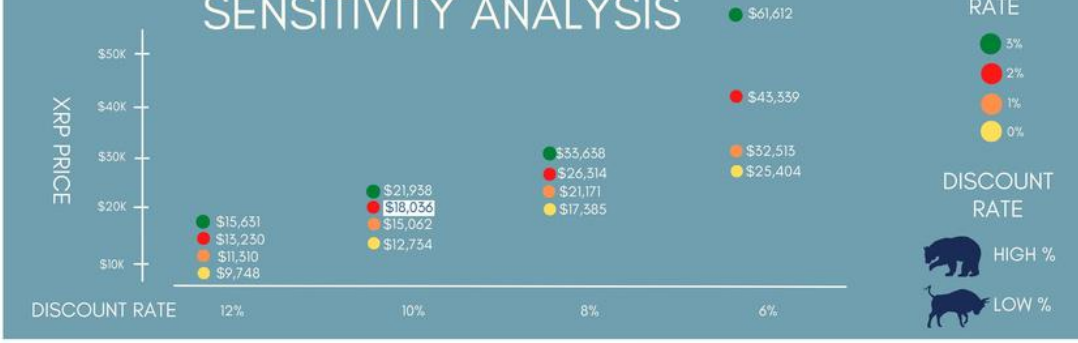
MODEL ASSUMPTIONS

- ✓ XRP ONLY USED FOR TRANSACTIONS (NOT AS A STORE OF VALUE)
- ✓ DISCOUNT RATE IS CONSISTENT YEAR OVER YEAR
- ✓ STAGGERED XRP ADOPTION STARTS AT 2%, GROWS EXPONENTIALLY TO 15% SLOWS UNTIL 70%, THEN ACCELERATES TO 100%
- ✓ ECONOMIC GROWTH RATE BASED ON FEDERAL RESERVE GOAL OF 2% INFLATION RATE

TRANSACTION VOLUME VS. DISCOUNTED VALUE

Assessment of the impact of the competing forces of growth rate and discount rate on the price

SENSITIVITY ANALYSIS



DISCOUNTED XRP VALUATION

BASE GLOBAL TRANSACTION VOLUME	→	$104 Trillion
ECONOMIC GROWTH RATE	→	2%
APPLIED DISCOUNT RATE	→	10%
YEARS UNTIL FULL ADOPTION	→	10 YEARS
TOTAL TRANSACTION PRESENT VALUE	→	$915 Trillion
XRP CIRCULATING SUPPLY	→ ÷	50.7 Billlion
PRICE PER XRP	→ =	**$18,036**

MODEL DRAWBACKS

- ✗ SPECIFIC DISCOUNT RATE SUBJECT TO INDUSTRY DEBATE
- ✗ DOES NOT ACCOUNT FOR STORE OF VALUE IMPACT ON CIRCULATING SUPPLY
- ✗ ASSUMPTIONS AROUND VARIABLE ADOPTION RATE DIFFICULT TO VALIDATE

DISCOUNTED CASH FLOW (DCF)

- Commonly used method in finance of valuing a security, project, company, or asset using the time value of money (pillar valuation methodology in modern finance).
- Based on the assumption that **money today is worth more than money tomorrow**. The premise is that today's dollars could be invested elsewhere and therefore appreciate in value over time if deployed in another opportunity.
- Terminal value allows for inclusion of the value of future cash flows occurring beyond a several-year projection period while mitigating some problems of valuing cash flows.

OVER TIME, MONEY WILL MIGRATE TOWARDS THE MOST EFFICIENT SYSTEM TO MOVE VALUE

XRP VALUATION MODEL #5

FAIR MARKET VALUE SIMULATION MODEL

MODEL NAME	Collateralization Model	FOUNDATION	Accounting Principles
MODEL BUILDER	Valhil Capital	XRP FUNCTION	Store of Value

APPROACH

- Model determined the value of all assets tokenized on the network (ALL THE MONEY)
- Each tokenized asset corresponds to a physical or financial asset currently considered to be of high value or money (e.g., gold, fiat currency, real estate, stocks or bonds)
- Considered an "extreme" approach that aimed to look at a scenario where ALL THE MONEY in the world is tokenized on the XRPL to ensure enough coverage should that outcome happen
- Similar to an insurance policy that must cover a worst case scenario to ensure enough resources would be available

ASSUMPTIONS

- ALL THE MONEY in the world was calculated using documented resources. See Appendix II
- Considerable amounts of money that are likely, but difficult to verify, were excluded which means the valuation is conservative
- Scenario assumes all value is tokenized at once which is unlikely (especially for real estate due to technical challenges)
- While the utility of XRP is a primary reason adoption is likely, the value of the asset in this model is not driven by transaction use

METHODOLOGY

- The value of "ALL THE MONEY" was determined and divided by the total supply of XRP. This calculated the value of the total money supply that must be collateralized per coin
- This simulation assumed that the world's value is tokenized by 2030. A net present value calculation with a 10% discount rate was applied to determine the value of XRP in today's money (commonly used practice in accounting and investment banking)

CONCLUSIONS

- Based on the total money supply confirmed to exist today ($5.3 Quadrillion), the value of XRP would need to be $122K
- There are assumptions that both overvalue XRP (not all the money ends up tokenized) and undervalue XRP (additional value exists (or will exist) that is not accounted for)
- However, the potential consequences on the financial system are greater if the asset is undervalued

INSIGHTS

The collateralization approach may be classified as an extreme scenario to determine the value for XRP should ALL THE MONEY (and assets) be tokenized on the XRPL. While it is difficult to know if that will happen, a higher value for XRP ensures that there is ample coverage in that unlikely event. Similar to insurance policy coverage, it is better to plan for an extreme scenario than assume it cannot happen and have insufficient value available to collateralize or cover the assets.

COLLATERALIZATION MODEL

FAIR MARKET VALUATION

"BIG BANG" SINGLE DAY MIGRATION TO TOKENIZED MONETARY SYSTEM

MODEL ASSUMPTIONS

- ✓ ALL THE WORLDS' VALUE WILL BE REPRESENTED ON THE XRPL BLOCKCHAIN
- ✓ RISK ADJUSTED COVERAGE RATIO ACCOUNTS FOR LIQUIDITY NEEDS IN FUTURE ECONOMY
- ✓ ONLY 50% OF MINTED XRP IS PART OF CIRCULATING SUPPLY
- ✓ BALANCE SHEET APPROACH IS A MOMENT-IN-TIME SNAPSHOT OF WORLD'S VALUE

ALL THE MONEY

TRADITIONALLY UNACCOUNTED FOR VALUE SOURCES

NORTH AMERICAN WATER & POWER ALLIANCE	BIS OFF BALANCE FX SWAPS	DEPARTMENT OF DEFENCE	U.S. UNFUNDED LIABILITIES
$14.3 QUADRILLION	$80 TRILLION	$95 TRILLION	$180 TRILLION

VALUE THAT EXISTS BUT IS PART OF COVERT, CLANDESTINE OR UNDISCLOSED PROGRAMS

XRP VALUE: 100% COLLATERALIZATION

TOTAL VALUE ESTIMATE	→	$5.3 QUADRILLION
2030 RISK ADJUSTED RATIO	→	x 1.25x ADJUSTMENT
RISK ADJUSTED TOTAL	→	= $6.6 QUADRILLION
2030 PV-10 TOTAL VALUE	→	= $6.2 QUADRILLION
XRP CIRCULATING SUPPLY	→	÷ 50.7 BILLION
2030 XRP PV-10 TOKEN VALUE	→	= **$122,580**

MODEL DRAWBACKS

- ✗ DOES NOT ACCOUNT FOR COMPETING EFFECTS OF UTILITY AND STORE OF VALUE
- ✗ UNABLE TO ACCOUNT FOR UNKNOWN VALUE THAT WE ARE UNAWARE OF
- ✗ ASSUMES REUSE OF XRP FOR TRANSACTIONS IRRELEVANT

COLLATERALIZATION

Collateralization is the process of securing a loan with **valued assets**, which is referred to as collateral

Assets considered collateral are generally **easy to value** and **liquidate**. Real estate, securities, cars, jewelry, art, or other valuables, can all serve as collateral. In addition, companies sometimes pledge equity capital or receivables as collateral for loans

While the concept was introduced in the framework of securing loans, it also applies to the upcoming **transition** to a tokenized, digital asset based monetary system

IN A WORLD WHERE **EVERYTHING IS TOKENIZED** A MIRROR IMAGE OF **ALL THE MONEY** NEEDS TO BE REPRESENTED ON THE **BLOCKCHAIN**

XRP VALUATION MODEL #6

FAIR MARKET VALUE SIMULATION MODEL

MODEL NAME	Quantum Liquidity	FOUNDATION	Mathematics
MODEL BUILDER	Dave XRP Lion	XRP FUNCTION	Store of Value

APPROACH

- The value of XRP must be high enough to ensure long term financial stability
- Similar to the collateralization model in that it is focused exclusively on store of value for XRP
- Model looked at the value of ALL THE MONEY, and applied base 10 mathematical principles to determine maximum collateral coverage necessary to move and store ALL value on XRPL
- Financial system benefits from an XRP value that can support considerable expansion (new value onto the ledger) and ALL THE MONEY currently in existence

ASSUMPTIONS

- While it is possible that multiple ledgers could be used to move and store value, financial systems naturally migrate to those most efficient and where money is treated best
- ALL THE MONEY based on sources (mostly gold) that are believed to exist but not yet verifiable via mainstream sources
- Financial system (and global peace) need a stable XRP value that could support a much greater economy and global money supply

METHODOLOGY

- Calculations were similar to the collateralization model. The value of "ALL THE MONEY" was determined and divided by the total supply of XRP. This calculated the value of the total money supply that must be collateralized per coin
- This model is forward thinking and addresses not only the money circulating now, but the future money (gold) that has been held back from usage but is expected to be reintroduced into the economy

CONCLUSIONS

- This model is a future oriented view where all global value resides on the XRPL, & the price of XRP must be high enough to ensure ample liquidity
- The long term role of XRP and the XRPL are tied to store of value and asset collateraliztion. Utility based price not a factor relatively speaking
- If the world moves to a paradigm where everything of value is tokenized, and the various asset backed tokens are functionally derivatives of the world reserve currency (XRP), the price would need to be very high

INSIGHTS

If the global financial system were to run using XRP, it could take a huge volume of coins to move large sums of money. The global financial system seeks efficiency and stability. A high price for XRP with low volatility is in the best interests of the large banks and institutions that move money. It is more efficient to move large sums of money if the value of XRP is very high.

QUANTUM LIQUIDITY MODEL

EXACT PROPORTIONS

A COLLATERALIZATION MODEL BUILT ON BASE 10 MATHEMATICAL PRINCIPLES

A GLOBAL LIQUIDITY POOL OF RESOURCES MUST BE COVERED

GLOBAL LIQUIDITY TO COVER **ALL THE MONEY**

A FINANCIAL SYSTEM THAT IS FULLLY COLLATERALIZED MUST ALLOW FOR ALL THE VALUE THAT EXISTS - NOW AND IN THE FUTURE - WITHIN THE ECOSYSTEM. THE BATTERY MUST BE FULLY CHARGED, BEYOND WHAT IS NEEDED SHORT TERM USES.

MODEL ASSUMPTIONS

- ✓ Assumes all the money - present & future - is collateralized on the XPRL
- ✓ Assumes XRP becomes world reserve currency
- ✓ Quantum Markets Efficiency (Increase in Tradable Hours 5.3X)
- ✓ Increase in Market Participants - 5 billion to 8 billion

UMBRELLA COVERAGE

XRP WILL BE BACKED BY GOLD + OTHER ASSETS

UMBRELLA INSURANCE POLICIES DESIGNED TO COVER EXTREME CONDITIONS AKA "ALL THE MONEY"

"TOO MUCH COVERAGE" IS NOT A PROBLEM FOR AN ECOSYSTEM, HOWEVER, "TOO LITTLE COVERAGE" COULD LEAD TO A CRISIS

QUANTUM LIQUIDITY COVERAGE MEANS AN XRP PRICE THAT PROVIDES THE NECESSARY LIQUIDITY TO STORE ALL VALUE - PRESENT OR FUTURE - IN XRP

XRP VALUE CALCULATION

TOTAL GLOBAL VALUE ESTIMATE	→	$10^45
DISCOUNTED VALUE ESTIMATE	→	$100 QUADRILLION ($10^17)
XRP TOTAL SUPPLY	→ ÷	$100 BILLION
2030 PV-10 VALUE	→ =	$1,000,000 ($10^6)
XRP ADJUSTED (DISCOUNT RATE)	→ =	**$513,158** as of 12/31/2022

THIS VALUE CALCULATION COVERS ALL THE CURRENT & POTENTIAL VALUE IN THE WORLD BEING HELD ON THE XRP LEDGER.
SIMILAR TO A MAXIMUM COVERAGE INSURANCE POLICY

MODEL DRAWBACKS

- ✗ ASSUMES ALL THE VALUE IN THE WORLD MUST BE COLLATERALIZED ON XRPL
- ✗ ASSUMES ALL VALUE IS TOKENIZED
- ✗ DOES NOT FACTOR TRANSACTION UTILITY INTO VALUE CALCULATION

QUANTUM LIQUIDITY

- "Liquidity" describes the degree to which an asset or security can be quickly bought or sold in the market without affecting the asset's price
- Higher prices introduce higher liquidity, and price stability. If the world's value assets are exchanged using the XRPL, a high price for XRP ensures a stable financial system
- Low prices, and turbulent price volatility, are not in the best interests of a global economy that seeks peace, prosperity and a level playing field for all

The "Exact Perfect Proportions" is based upon Fractal Theory of the Universe where everything is determinable up or down to the ηth degree.

COLLATERALIZATION

While the blockchain is viewed as a technology innovation, the concept of a ***ledger*** originates in accounting. ***Ledgers*** are used to store information about transactions and to ***record the value*** of assets, liabilities and equity.

Generally, transactional data within ledgers is organized into:
A. ***Revenues and expenses*** (which flow through the income statement over a specified period of time, such as month, quarter or year)
B. ***Assets, liabilities, and owner's equity*** (which are viewed at a given ***snapshot moment in time*** on the balance sheet)

The concept of a ***double-entry*** is also part of bookkeeping and ledger accounting. ***Double-entry*** bookkeeping is when every transaction impacts at least one debit and one credit account. In other words, each transaction appears in two columns: the debit column and the credit column, whose totals must balance.

FROM AN ACCOUNTING PERSPECTIVE, tokenized assets and liabilities on the XRPL can be thought of as analogous to accounts recorded on a global, distributed balance sheet.

A ***balance sheet*** (for example) could include a gold account, an oil account and a real estate account. When we decide to assess the world's assets, liabilities and equity at a given moment of time, and represent the value of those assets on the XRPL, we are effectively tokenizing (or recording) those accounts and accounting for them.

NOTE: It is important to clarify the distinction between the technical process of tokenizing the property rights tied with owning an asset from the accounting concept. In the technical process, when looking at physical assets like land or gold, the tokenized asset represents the ownership rights of the physical asset - much like a digital form of the deed to the land or a digital certificate of ownership of the gold. When looking at debts, the tokenized debt represents the creditor's and debtor's obligations of the debt - much like an IOU or promissory note.

With the collateralization model, we are looking at the value of assets from an accounting perspective. This is important when determining how much ***value is held*** on the XRPL in a tokenized form and implicitly ***distributed*** among the existing supply of XRP.

Transactions of these tokenized assets and liabilities on the XRPL can be thought of as analogous to transactional entries being made onto a global, distributed "income statement" or "profits and loss statement (P&L)."

Moving the assets and liabilities from account to account was initially seen as the primary use case for XRP because of the ***speed*** (3 -5 seconds), ***low cost*** (typically a fraction of one penny), and ***sustainable nature*** (low energy impact) of using XRP to transmit value.

As discussed throughout this Valuation Whitepaper, the efficient use case to transmit value is really the "other side of the coin" and will (as adoption grows and drives the virtuous cycle flywheel) cause more businesses and individuals to retain XRP for transactional use in the future. *This will consequently lead to more assets and liabilities being tokenized onto the XRPL.*

We acknowledge that assets and liabilities will be also tokenized on other protocols, and that even certain tokenized assets existing on the XRPL will not directly impact the price of XRP.

However, if (as many people reasonably believe) XRP is the MOST liquid asset currently in existence and the XRPL is the MOST efficient network for transmitting standardized packets of value anywhere in the world in three to five seconds at almost no cost, logic dictates that ***all value will ultimately be represented on the XRPL*** and distributed (at least implicitly) across all XRP in existence at any given time. Capital flows to where it is treated best.

This is, by definition, the essence of "economic efficiency."

> Economic efficiency is the quality of economic activity in which resources are used and goods distributed in a way that generates the greatest benefits to producers and consumers; when all goods and factors of production in an economy are distributed or allocated to their most valuable uses and waste is eliminated or minimized.
> See https://www.investopedia.com/terms/e/economic_efficiency.asp

CONCLUSIONS

Using multiple models to simulate various conditions enabled the team to understand the ***key driver*** of XRP's ***fair market value***.

While utility will likely be the primary force to drive adoption of XRP and the XRPL, the high speed & low cost of transactions are not primary drivers of XRP price.

Our empirical analysis (excluding outliers) reflects a set of values that centers around a ***mean value of $12K***. The values between the mean and median range between $12K - $22K.

The Virtuous Cycle explains how the two ***competing forces work together*** to drive up the price. However, ultimately, the ***store of value function of XRP is the most significant variable behind a high price valuation.***

While those focused on the technology love the efficiency and speed of the network, using XRP for transactions is a short term commitment activity for banks, institutions and sovereign nations.

However, those entities all hold wealth, and must choose an asset (or assets) in which to store that wealth. For the past 75 years, much of the world has chosen the US Dollar for both transactions and store of value (US Treasuries).

As the world shifts away dependence solely on the dollar, there is a need for a new sovereign-neutral monetary system.

While it is difficult to predict how quickly or widespread adoption of the XRPL will be, ***the global financial system and market participants benefit when the price of XRP is stable and high in value***.

The pipeline flow model mapped out the impact of speculative retail investors on the price of the asset.

A quick increase in price could lead long term (and patient) holders to take profits, leading to a sell off.

In addition to clarifying the role of store of value in price was the exercise of determining ALL THE MONEY that exists in the world. This was a critical model input for two of the models, and was more difficult to accurately calculate than one might expect.

This also brought up the question of future value. If the world moves on to a new monetary system, and the XRPL is used to exchange value on a wide scale, it needs to grow with the global economy.

As technology like AI and space exploration create new industries that may grow exponentially, it is likely that the global economy could expand quickly.

Should that happen, ***the financial system benefits from a monetary system that is designed to handle considerably larger amounts of value, for both exchange and storage.***

As the world emerges from a tense geopolitical situation in part due to the end of the Petrodollar agreement, a monetary system designed for peace and prosperity is very important.

A high price for XRP that enables global growth and ALL THE MONEY to potentially exist on the ledger may prevent a breakdown of the fragile global supply chain and prevent a catastrophic world war.

The irony around the price discussion for XRP is that all of the parties who have a vested interest in the asset benefit from a high price.

Adoption of XRP as a store of value is the pathway to that high valuation. That path begins with adoption for transactions and exchanges of value.

APPENDIX I

Brief History:

In the early months following the U.S. Securities and Exchange Commission's (the "***SEC***") commencement of the SEC v. Ripple et al lawsuit on December 22, 2020 (the "***SEC Enforcement Action***"), facts began to surface suggesting the SEC had not brought the SEC Enforcement Action in good faith and may have used the regulatory powers of the federal government to implement a "***regulatory taking***" of XRP from retail tokenholders in violation of the "takings clause" set forth in the Fifth Amendment. [1] Understanding the SEC's success in this matter could result in XRP tokenholders being dispossessed from using or otherwise realizing the full value of their private property in the manner such tokenholders intended, the principals at Valhil Capital, LLC ("***Valhil***") began a process to determine the actual fair market value of XRP in an arm's length transaction and without existing information asymmetry – notably whether the federal government and/or its agents (*e.g.*, the Federal Reserve Banking System) intended to use the XRP Ledger (the "***XRPL***") and its native token XRP as the primary Layer 1 protocol in an emerging global digital financial system – colloquially referred to as the "***Quantum Financial System***" or "***QFS***."

In August 2021, Valhil organized the first CONFIDENTIAL COMMITTEE (the "***2021 CONFIDENTIAL COMMITTEE***") comprised of XRP tokenholders to consider, evaluate and deliberate upon the "CONFIDENTIAL: Term Sheet – Proposed Terms for the Purchase of XRP Tokens from Participating Tokenholders" (the "***Proposed Terms***"). To our knowledge, this was the first time in history that such a committee was organized to deliberate upon the Proposed Terms of a material M&A transaction with the federal government of the United States ("***US Gov***").

After several weeks of deliberation among the members of the 2021 CONFIDENTIAL COMMITTEE, the 2021 CONFIDENTIAL COMMITTEE held a telephonic meeting on Friday, September 10, 2021 and unanimously approved the Proposed Terms and directed Valhil to take any and all reasonable, ethical, legal and moral actions to submit the Proposed Terms to the Federal Reserve Bank of the United States (the "***FED***"). On Monday, September 13, 2021, Valhil submitted the Proposed Terms to the FED and sent a carbon copy to the Department of Treasury (the "***Treasury***").

During the course of the following month, members of the 2021 CONFIDENTIAL COMMITTEE learned additional information regarding the broader market's intention to use the XRPL (and XRP) as the Layer 1 protocol underpinning the new Quantum Financial System into which humanity is currently in the process of transitioning. Consequently, the Proposed Terms were revised – notably to increase the price of the "***Cash Consideration***" from electronic special drawing rights ("***eSDRs***") equivalent in value to US$25,000 to eSDRs equivalent in value to US$37,500 (the "***Revised Proposed Terms***"). Following receiving email approval from a majority of the members of the 2021 CONFIDENTIAL COMMITTEE, Valhil submitted the Revised Proposed Terms to the FED and sent a carbon copy to the Treasury on Monday, October 29, 2021 and requested therein that the FED engage on the "***Proposed Transaction***" by November 5, 2021 (the "***Drop Dead Date***").

APPENDIX I

Having received no response from the FED by the Drop Dead Date, Valhil made the Revised Proposed Terms public by publishing them on Twitter and also shared them with members of the media. Since their publication, the Revised Proposed Terms have been very heatedly debated throughout the broader "***XRP Community***" and "***Crypto Twitter***." Several persons took the initiative to actually contact the FED's various district branches and confirm receipt, and were able to confirm that the Revised Proposed Terms had, in fact, been received. They were even encouraged that the FED would be happy to discuss with Valhil. However, Valhil's attempts to follow-up were unrequited. To this day, there has been no formal acknowledgement by the FED of their receipt and consideration of the Revised Proposed Terms.

In the near year and half since the Revised Proposed Terms were submitted, corrupt activities (such as #ETHGate), regulatory capture and the frequent failures and scandals of cryptocurrencies and cryptocurrency exchanges have become common. For its part, the US Gov has failed at every level to provide any appropriate regulatory clarity or oversight with respect to the digital asset sector. Consequently, members of the 2021 CONFIDENTIAL COMMITTEE decided to reconstitute and expand the committee to include approximately 50 members, including several "***influencers***" in the XRP Community that showed an aptitude for conducting due diligence with respect to the appropriateness of US Gov's actions.

Therefore, on or about November 28, 2022, a second CONFIDENTIAL COMMITTEE (the "***2022 CONFIDENTIAL COMMITTEE***") comprised of XRP Tokenholders and non-XRP Tokenholders was organized by Valhil to consider, evaluate and deliberate upon an updated version of the "CONFIDENTIAL: Term Sheet – Proposed Terms for the Purchase of XRP Tokens from Participating Tokenholders" (the "2nd Revised Terms"), which would include a provision for "***liquidated damages***" to be paid to XRP tokenholders that divested all or a portion of their XRP for certain "Qualifying Purposes."[2] One of the first major actions of the 2022 CONFIDENTIAL COMMITTEE was to create two subcommittees by resolution duly adopted on December 7, 2022: (i) a Valuation Subcommittee that consists of seven members of the CONFIDENTIAL COMMITTEE with experience in financial matters, economics and valuations to determine the fair market value of XRP as of 2030 and discount that fair market value to the current time period (the "***Valuation Committee***"); and (ii) a Technology Implementation Subcommittee that consists of three members of the 2022 CONFIDENTIAL COMMITTEE having experience with, and knowledge of, the systems structure of the XRPL to determine the best manner in which to technologically implement the terms of the Proposed Transaction (as defined in the 2nd Revised Terms) (the "***Technology Committee***").

The financial models and valuations set forth in this Valuation Whitepaper reflect the extensive work and evaluation of the Valuation Committee.

APPENDIX I

[1] "No person shall . . . be deprived of life, liberty, or property, without due process of law; *nor shall private property be taken for public use without just compensation*." U.S. CONST. amend. V (emphasis added).

[2] "***Qualifying Purpose***" was defined to mean a specified purpose for which XRP could have been divested by a "Damaged Tokenholder" during the "Period of Uncertainty" that remains eligible to receive liquidated damages under the applicable 2nd Revised Terms and included purposes like the following: (i) ordinary course living expenses for self, a parent, relative or qualifying dependents; (ii) expenses incurred as a result of such person or a family member becoming "totally and permanently disabled"; (iii) qualified higher education expenses for self or a family member; (iv) satisfaction of an IRS levy; (v) ordinary course reasonable business expenses; (vi) incurrence of non-elective medical expenses; (vii) incurrence of health insurance expenses; (viii) repayment of purchase money loans the proceeds of which were used to buy XRP; (ix) repayment of borrowed funds from a qualified retirement account; or (x) incurrence of alimony, child support or child care expenses.

APPENDIX II

MODEL #1: PIPELINE FLOW MODEL

This valuation modelling approach considers the XRPL trade ecosystem as a dynamic system where the core trade-off between FX demand and XRP liquid supply determines trade volumes and hence drives instantaneous price. The USD value traded over a given amount of XRP tokens represents a ratio equal to price (validated by real-world data below). Two key components in this price calculation are 1) active vs inactive capital ratios as well as 2) standardised period of active trading volume data. Beyond this, price calculation enables price prediction by varying active vs inactive capital ratios under variable sets of assumptions for demand and supply market conditions which can be modelled using mathematical functions or similar methods (exponential and rarefaction curves in this case). The formula for price calculation is below:

$$\text{Price} = \frac{(x*a)/t_a}{(c*b)/t_b}$$

Price calculation takes the basic form of a 'value divided by XRP volume' quantity and scales it according to active vs inactive capital ratios which are standardised by period to produce a per instant price valuation. In the numerator, *x* is the total value potentially traded or 'market cap' (active + inactive value), representing the amount of total assets globally, while *a* is the ratio of actively traded asset value in a given time period, t_a. In the denominator, *c* is the total circulating supply of XRP that may be potentially traded *i.e.* not in the Ripple escrow (active + inactive or liquid + illiquid token supply), while *b* is the ratio of actively traded XRP tokens in a given time period, t_b. Note, this quantity represents the sum total of volume, and is not a 'per token' quantity. As such, token reusability is represented within this quantity. For example, if it is assumed that each token transfers value twice per day, the whole denominator term can be halved (to represent individual fungible tokens) and then multiplied by two (to represent token reuse *i.e.* volume). As such, reusing tokens represents an additional vector of supply side factors that may limit price appreciation (owing to the speed of the ledger) but this information is already implied in XRP volume information calculated by the denominator term.

This price calculation is confirmed below to accurately measure XRP price based on real-world data from coinmarketcap.com on 4 February 2023[1]:

Ratio a = 686 365 925 USD / 20 970 004 440.00 USD = 0.032730843 | Ratio b = 1 662 696 876 XRP / 50 799 084 881.005 XRP = 0.032730646

$$\frac{(x*a)/t_a}{(c*b)/t_b} = \frac{(20\,970\,004\,440.00 \text{ USD} * 0.032730843) / 86\,400 \text{ seconds}}{(50\,799\,084\,881.005 \text{ XRP} * 0.032730646) / 86\,400 \text{ seconds}} = 0.4128053 \text{ USD}$$

The ratios *a* and *b* are then modelled under varying exponential and rarefaction curves (Fig 1) to simulate vectors of demand growth and depleting supply market conditions as y-values along x-axis market condition states (1-100). These ratio vectors are used to sequentially update the price calculation to model price change scenarios (Figs. 2-5) according to combined demand-supply assumptions. Limits and curve shape characteristics for each exponential or rarefaction curve function are specified to represent daily FX demand and XRP token supply scenarios (market conditions).

APPENDIX II

MODEL #1: PIPELINE FLOW MODEL

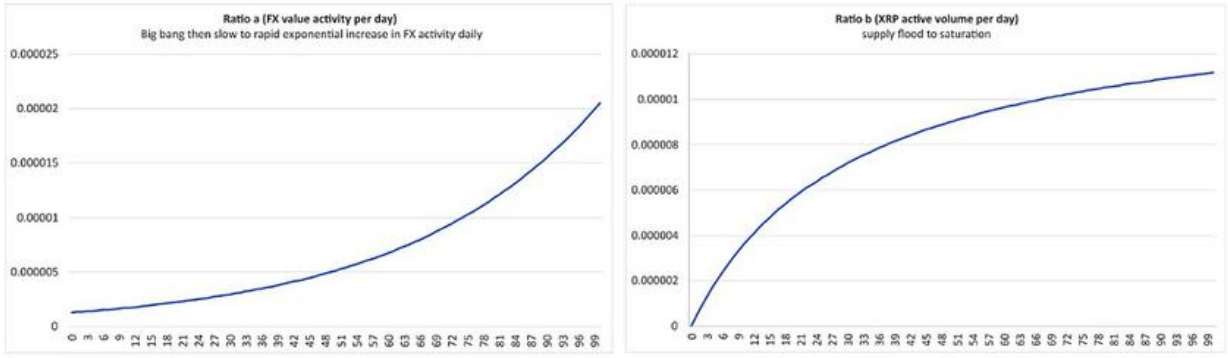


Figure 1 – Examples of ratio curves for *a* (demand) and *b* (supply) used to simulate changing market conditions in valuation models.

In this paper, scenarios include starting from present day market conditions with steady growth and no change in supply (Fig. 2), a 'big bang' migration event of 1.5 T USD per day^2 (Fig. 3) and 7.5 T USD per day^2 (Fig. 4), both with increasing liquid supply of XRP tokens to simulate a rapid, uncontrolled market sell-off (~7.5 B XRP) in the first 30 states to due to price increase. The final scenario (Fig. 5) considers a 'big bang' migration event of 1.5 T USD per day followed by a rapid sell off (as in Figs 3-4) followed by significant growth in FX demand to 16 T USD per day by market conditions state 100.

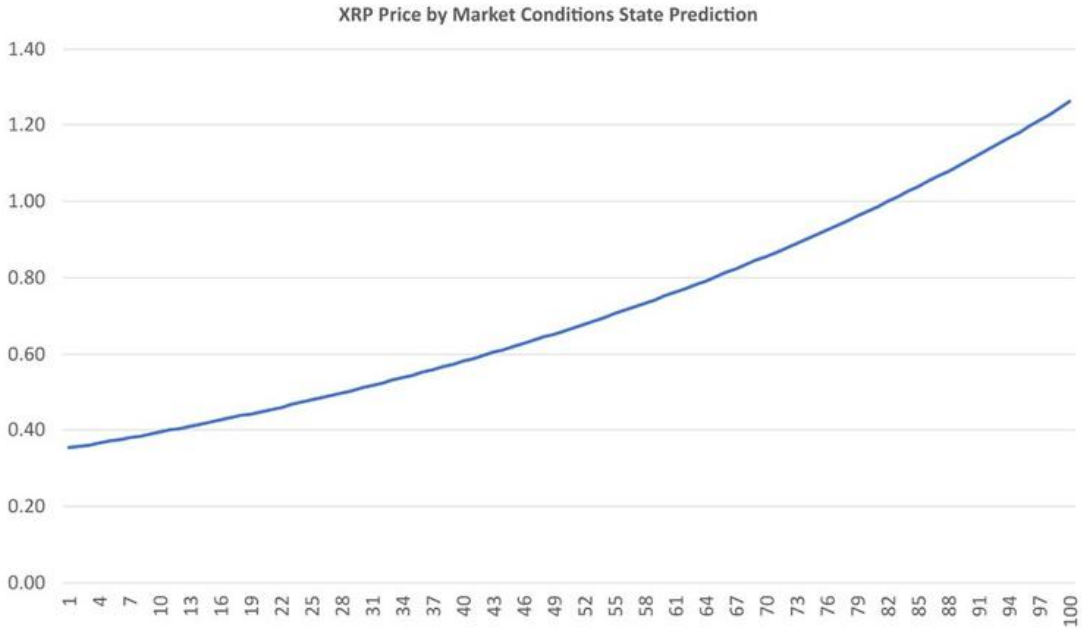


Figure 2 – Valuation model assuming present day market conditions with steady growth in FX demand but stable XRP liquid supply (baseline model).

Market conditions state data (FX value | XRP volume daily): 1 – 924 M USD | 2.6 B XRP, 100 – 3.3 B USD | 2.6 B XRP

APPENDIX II

MODEL #1: PIPELINE FLOW MODEL

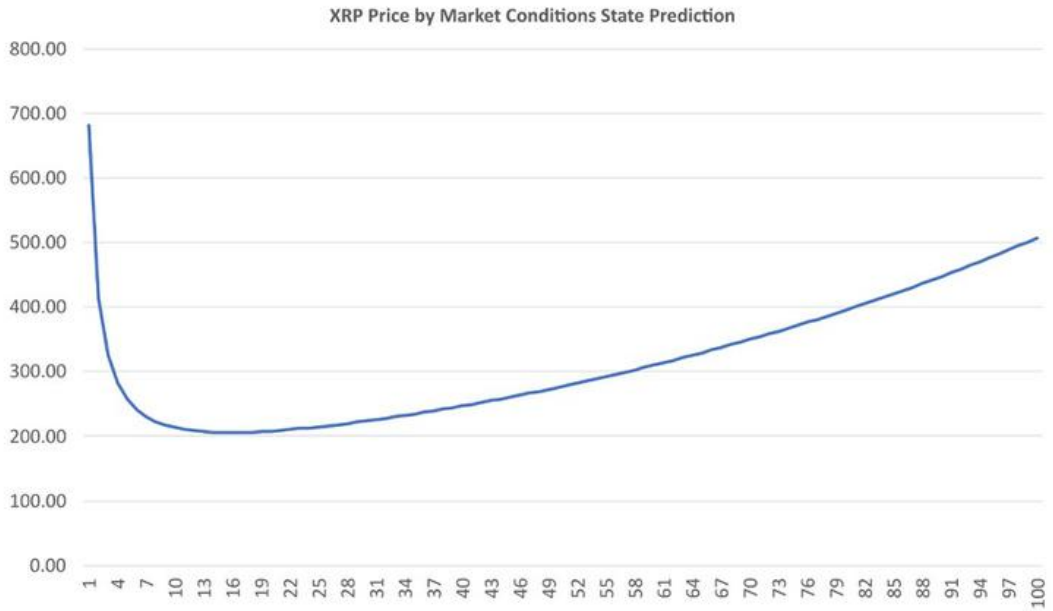


Figure 3 – Valuation model assuming 'big bang' migration of global spot FX (1.5 T USD daily[2]) with significant liquid supply increase (~7.5 B XRP) due to sell-off after price increase.

Market conditions state data (FX value | XRP volume daily): 1 – 1.5 T USD | 2.2 B XRP, 30 – 2.2 T USD | 9.7 B XRP, 60 – 3.2 T USD | 10.3 B XRP, 100 – 5.4 T USD | 10.6 B XRP.

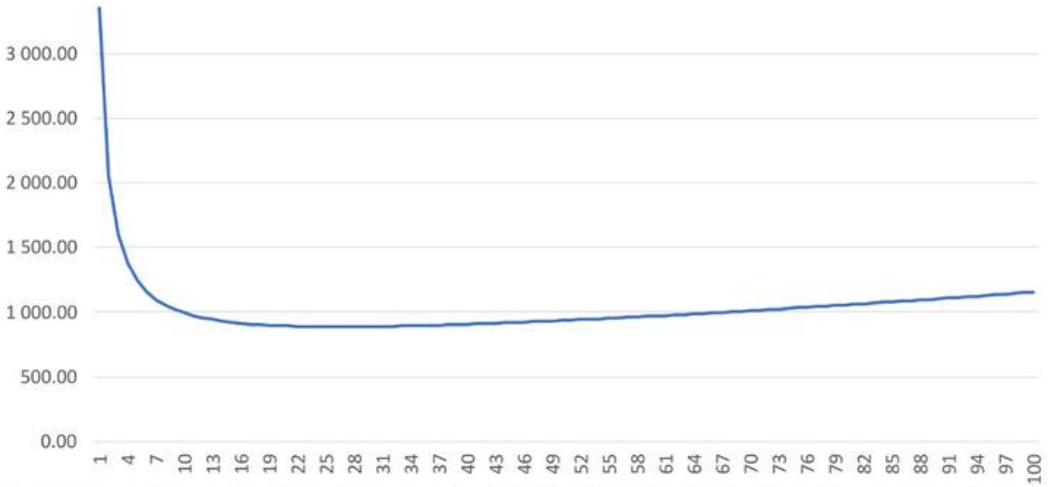


Figure 4 – Valuation model assuming 'big bang' migration of total global FX (7.5 T USD daily[2]) with significant liquid supply increase (~7.5 B XRP) due to sell-off after price increase.

Market conditions state data (FX value | XRP volume daily): 1 – 7.5 T USD | 2.2 B XRP, 30 – 8.7 T USD | 9.7 B XRP, 60 – 10.1 T USD | 10.3 B XRP, 100 – 12.3 T USD | 10.6 B XRP.

APPENDIX II

MODEL #1: PIPELINE FLOW MODEL

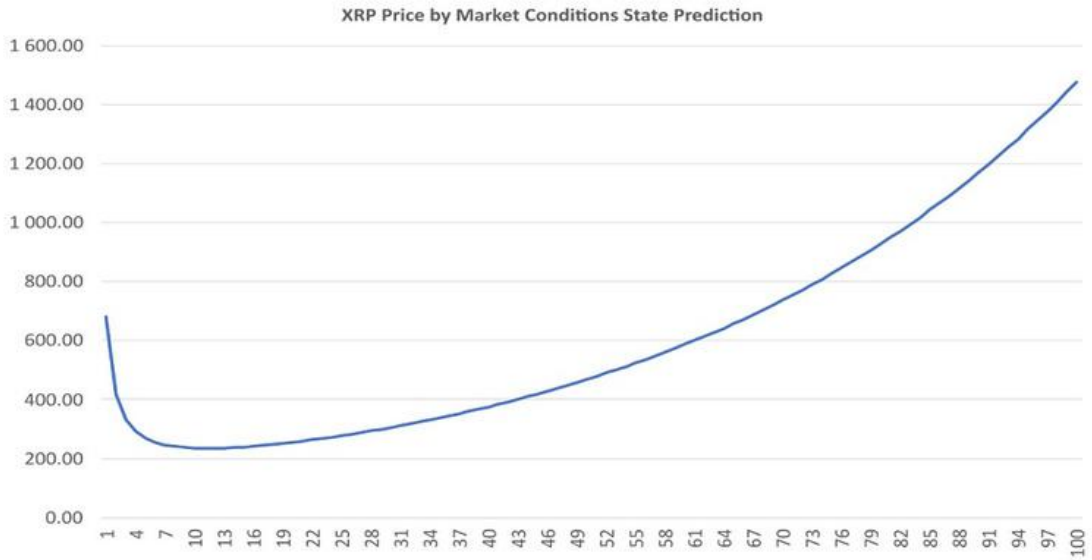


Figure 5 – Valuation model assuming 'big bang' migration of spot global FX (1.5 T USD daily[2]) with significant liquid supply increase (~7.5 B XRP) due to sell-off after price increase, followed by significant growth in FX demand daily to 16 T USD.

Market conditions state data (FX value | XRP volume daily): 1 – 1.5 T USD | 2.2 B XRP, 30 – 3 T USD | 9.7 B XRP, 60 – 6.2 T USD | 10.3 B XRP, 100 – 16 T USD | 10.6 B XRP.

In order to ensure price stability for any entities relying on XRPL liquidity in the above scenarios the following 'buyback' or 'buyback lease' arrangements may be considered to set an artificial buy floor:

Fig. 3: 650-700 USD for >8.4 B XRP = >5.46 T USD

Fig. 4: 3400-3500 USD for >8.4 B XRP = >28.56 T USD

Fig 5: 650-700 USD for 8.2 B XRP = 5.33 T USD

Note, in Figs 3 and 4 the '>8.4 B XRP' term is used as a lower limit because the valuation model does not include price recovery. However, price recovery is modelled in Fig. 5 where the price recovers at state 67, after rapid selling due to increasing FX demand. In this case, buy floor size estimates can be made more precisely.

Following this investigation, it is concluded that adequate estimates for expected daily FX activity and daily liquid XRP supply (Ripple ODL corridor activation + retail holders selling XRP to fiat) are crucial to obtain and use in predictive modelling. These valuation models will aid to inform decision-making required for navigating risks associated with various scenarios in onboarding financial activities to the XRPL. Other mathematical functions, models or curves can be used to estimate demand-supply ratios to predict XRP price activity as a given scenario unfolds. Expansion in this area of valuation modelling based on network utility is greatly encouraged to maximise understanding of potential outcomes such that potential contingencies to limit risk can be planned and initiated if and when needed. This may prove to be an important exercise in maintaining price stability, and therefore liquidity, on the XRPL network for the people, businesses, banks and economies relying on XRPL liquidity for daily functioning.

APPENDIX II

MODEL #1: PIPELINE FLOW MODEL

Data sources

[1]XRP price and volume data:

https://web.archive.org/web/20230204133438/https://coinmarketcap.com/

[2]Daily global FX data:

https://www.bis.org/publ/qtrpdf/r_qt2212f.htm

APPENDIX II

MODEL #2: ATHEY & MITCHNICK MODEL

Key Parameters			Today	Parameter Value Range: Base	Parameter Value Range: High
Y	Total transaction value, in US$ per day (US$tn)		$0.001189	$0.7	$5.5
t	Weighted average time between transactions per unit of currency, in days		0.00069	0.00069	0.00069
I	Storage Demand (US$tn)		$0.037111	$530.0	$5,300.0
N	Number of coins currently in circulation (in billions)		50.8	56.5	62.0
y	Number of coins to be issued in the future or currently locked up by large institutions				
p	Fractional reserve ratio of cryptoasset network				
i	Discount rate		10.0%	10.0%	10.0%
T	Time until steady-state (years)		0.0	7.0	10.0
ß			1.0	1.0	1.0
	Numerator	ß(Yt+I)	$0.0	$530.0	$5,300.0
	Denominator	N+y	50.8	56.5	62.0
	Discount Factor	$(1+i)^{-T}$	1.000	0.513	0.386
	A&M Formula		$0.73	$4,813.70	$32,957.76

			$100T Store of Value	$500T Store of Value	$1,000T Store of Value
			$0.7	$0.7	$0.7
			0.00069	0.00069	0.00069
			$100.0	$500.0	$1,000.0
			56.5	56.5	56.5
			10.0%	10.0%	10.0%
			7.0	7.0	7.0
			1.0	1.0	1.0
	Numerator	ß(Yt+I)	$100.0	$500.0	$1,000.0
	Denominator	N+y	56.5	56.5	56.5
	Discount Factor	$(1+i)^{-T}$	0.513	0.513	0.513
	A&M Formula		$908.25	$4,541.23	$9,082.45

Notes:

This financial model was based upon the paper *"A Fundamental Valuation Framework for Cryptoassets"* written by Robert Mitchnick and Susan Athey in June 2018: https://medium.com/@robbiemitchnick/a-fundamental-valuation-framework-for-cryptoassets-e101f1206901

APPENDIX II

MODEL #3: 99 YEAR GOLDEN EAGLE MODEL

Estimated Value of XRP under 99 years Golden Eagle Model																			
XRP Value using Money Functions																			
Year	Type	Short Symbol	Discount Factor	Medium of Exchange Tn $	Measure of Value & Standard of Deferred payment - Tn $	Store Value - Tn $	Total Market Size (Pie)	Market Share	Market Size x Share of XRP in Pie - Tn $	Market Size x Share of XRP in Pie - Bn $	XRP Liquid Supply in Bn	Velocity of Money Supply	XRP Liquid Supply in Bn considering Float	XRP Price per Token in $	XRP Price per Token in $ - PV 10%
				"D1"	"D2"	"D3"	"D1 - D3"	"x"	"Dxs"	"Dxs"	M*f	"v"	M*f*v	P = (Dxs)/(Mxfxv)	
				World Trade 28.5 Tn $ pa	World Money - 5323 Tn $	112 Tn $									
				Growth - 6% CAGR till 2030 & same from 2031 to 2121 - expansion in global economy	Growth - 20% CAGR till 2021 Opportunity Cost) / Reward to stay invested in XRP	CAGR of 87% from 2023 to 2030 & then 20% CAGR from 2031 to 2121		Initially Trade Fi with XRP, then XRP grows exponentially - XRP with Competition - Average share of Ripple XRP - 54%								
2022	Past Year	Y-1	1.000000	28.50	5,323.00	112.30	5,463.80	0.54	2,950.45	2,950,452	36.50	11,826	429,284	6.87	6.87
2023	Current Year	Y0	0.900000	30.210	6,387.60	210.00	6,627.81	0.54	3,579.02	3,579,018	43.40	11,826	513,248	6.97	6.28
2024	Future Year	F1	0.810000	32.023	7,665.12	392.70	8,089.84	0.54	4,368.52	4,368,516	49.80	11,826	588,935	7.42	6.01
2025	Future Year	F2	0.729000	33.944	9,198.14	734.35	9,966.44	0.54	5,381.88	5,381,878	59.40	11,826	702,464	7.66	5.59
2026	Future Year	F3	0.656100	35.981	11,037.77	1,373.24	12,446.99	0.54	6,721.38	6,721,376	69.00	11,826	815,994	8.24	5.40
2027	Future Year	F4	0.590490	38.139	13,245.33	2,567.96	15,851.42	0.54	8,559.77	8,559,769	81.00	11,826	957,905	8.94	5.28
2028	Future Year	F5	0.531441	40.428	15,894.39	4,802.08	20,736.90	0.54	11,197.93	11,197,926	81.00	11,826	957,905	11.41	6.06
2029	Future Year	F6	0.478297	42.853	19,073.27	8,979.89	28,096.01	0.54	15,171.85	15,171,848	83.00	11,826	981,558	15.46	7.39
2030	Future Year	F7	0.430467	45.425	22,887.93	16,792.39	39,725.14	0.54	21,451.90	21,451,902	83.00	11,826	981,558	21.85	9.41
2031	Future Year	F8	0.387420	48.150	27,465.51	20,150.87	47,664.53	0.54	25,738.85	25,738,848	83.00	11,826	981,558	26.22	10.15
2032	Future Year	F9	0.348678	51.039	32,958.61	24,181.05	57,190.70	0.54	30,882.98	30,882,978	83.00	11,826	981,558	31.46	10.97
2033	Future Year	F10	0.313811	54.102	39,550.34	29,017.26	68,621.69	0.54	37,055.71	37,055,714	83.00	11,826	981,558	37.75	11.85
2034	Future Year	F11	0.282430	57.348	47,460.40	34,820.71	82,338.46	0.54	44,462.77	44,462,757	83.00	11,826	981,558	45.30	12.79
2035	Future Year	F12	0.254187	60.788	56,952.48	41,784.85	98,798.12	0.54	53,350.99	53,350,985	83.00	11,826	981,558	54.35	13.82
2036	Future Year	F13	0.228768	64.435	68,342.98	50,141.82	118,549.23	0.54	64,016.59	64,016,587	83.00	11,826	981,558	65.22	14.92
2037	Future Year	F14	0.205891	68.302	82,011.58	60,170.18	142,250.06	0.54	76,815.03	76,815,033	83.00	11,826	981,558	78.26	16.11
2038	Future Year	F15	0.185302	72.400	98,413.89	72,204.22	170,690.51	0.54	92,172.88	92,172,876	83.00	11,826	981,558	93.90	17.40
2039	Future Year	F16	0.166772	76.744	118,096.67	86,645.06	204,818.48	0.54	110,601.98	110,601,977	83.00	11,826	981,558	112.68	18.79
2040	Future Year	F17	0.150095	81.349	141,716.00	103,974.08	245,771.43	0.54	132,716.57	132,716,571	83.00	11,826	981,558	135.21	20.29
2041	Future Year	F18	0.135085	86.230	170,059.20	124,768.89	294,914.32	0.54	159,253.74	159,253,735	83.00	11,826	981,558	162.25	21.92
2042	Future Year	F19	0.121577	91.403	204,071.04	149,722.67	353,885.12	0.54	191,097.96	191,097,963	83.00	11,826	981,558	194.69	23.67
2043	Future Year	F20	0.109419	96.888	244,885.25	179,667.20	424,649.34	0.54	229,310.65	229,310,646	83.00	11,826	981,558	233.62	25.56
2044	Future Year	F21	0.098477	102.701	293,862.30	215,600.64	509,555.65	0.54	275,160.45	275,160,450	83.00	11,826	981,558	280.34	27.61
2045	Future Year	F22	0.088629	108.863	352,634.76	258,720.77	611,454.40	0.54	330,190.76	330,190,776	83.00	11,826	981,558	336.39	29.81
2046	Future Year	F23	0.079766	115.395	423,161.72	310,464.93	733,742.04	0.54	396,220.70	396,220,701	83.00	11,826	981,558	403.67	32.20
2047	Future Year	F24	0.071790	122.318	507,794.06	372,557.91	880,474.29	0.54	475,456.12	475,456,118	83.00	11,826	981,558	484.39	34.77
2048	Future Year	F25	0.064611	129.657	609,352.87	447,069.49	1,056,512.03	0.54	570,516.09	570,516,094	83.00	11,826	981,558	581.26	37.56
2049	Future Year	F26	0.058150	137.437	731,223.45	536,483.39	1,267,844.28	0.54	684,635.91	684,635,911	81.00	11,826	981,558	697.50	40.56
2050	Future Year	F27	0.052335	145.683	877,468.14	643,780.07	1,521,393.89	0.54	821,552.70	821,552,702	83.00	11,826	981,558	836.99	43.80
2051	Future Year	F28	0.047101	154.424	1,052,961.77	772,536.09	1,825,652.28	0.54	985,852.23	985,852,229	83.00	11,826	981,558	1,004.37	47.31
2052	Future Year	F29	0.042391	163.689	1,263,554.12	927,043.30	2,190,761.11	0.54	1,183,011.00	1,183,011,001	83.00	11,826	981,558	1,205.24	51.09
2053	Future Year	F30	0.038152	173.511	1,516,264.94	1,112,451.97	2,628,850.42	0.54	1,419,600.83	1,419,600,826	83.00	11,826	981,558	1,446.27	55.18
2054	Future Year	F31	0.034337	183.922	1,819,517.93	1,334,942.36	3,154,644.21	0.54	1,703,507.87	1,703,507,874	83.00	11,826	981,558	1,735.51	59.59
2055	Future Year	F32	0.030903	194.957	2,183,421.52	1,601,930.83	3,785,347.30	0.54	2,044,195.54	2,044,195,544	83.00	11,826	981,558	2,082.60	64.36
2056	Future Year	F33	0.027813	206.654	2,620,105.82	1,922,317.00	4,542,629.47	0.54	2,453,019.91	2,453,019,914	83.00	11,826	981,558	2,499.11	69.51
2057	Future Year	F34	0.025032	219.053	3,144,126.98	2,306,780.40	5,451,126.43	0.54	2,943,608.27	2,943,608,274	83.00	11,826	981,558	2,998.91	75.07
2058	Future Year	F35	0.022528	232.197	3,772,952.38	2,768,136.47	6,541,321.05	0.54	3,532,313.37	3,532,313,368	83.00	11,826	981,558	3,598.68	81.07
2059	Future Year	F36	0.020276	246.128	4,527,542.86	3,321,763.77	7,849,552.75	0.54	4,238,758.49	4,238,758,488	83.00	11,826	981,558	4,318.40	87.56
2060	Future Year	F37	0.018248	260.896	5,433,051.43	3,986,116.52	9,419,428.85	0.54	5,086,491.58	5,086,491,578	83.00	11,826	981,558	5,182.06	94.56

APPENDIX II

MODEL #3: 99 YEAR GOLDEN EAGLE MODEL

Estimated Value of XRP under 99 years Golden Eagle Model																		
XRP Value using Money Functions																		
Year	Type	Short Symbol	Discount Factor	Medium of Exchange Tn $	Measure of Value & Standard of Deferred payment - Tn $	Store Value - Tn $	Total Market Size (Pv)	Market Share	Market Size x Share of XRP in Pie - Tn $	Market Size x Share of XRP in Pie - Bn $	XRP Liquid Supply in Bn	Velocity of Money Supply	XRP Liquid Supply in Bn considering Float	XRP Price per Token in $	XRP Price per Token in $ - PV 10%
				"Q1"	"Q2"	"Q3"	"Q1 - Q3"	"s"	"Qns"	"Qns"	M*1	"v"	M*1*v	P = Qns/(Mxtrlv)	
				World Trade 28.5 Tn $ p.a	World Money - 5323 Tn $	112 Tn $									
				Growth - 6% CAGR till 2030 & same from 2031 to 2121 - expansion in global economy	Growth - 20% CAGR till 2030 & then 20% CAGR from 2031 to 2121	CAGR of 97% from 2023 to 2030 & then 20%		Initially Trade Fi with XRP, then XRP grows exponentially - XRP with Competition - - Average share of Ripple XRP - 54%							
2061	Future Year	F38	0.016423	276.550	6,159,663.71	4,783,339.83	11,303,276.09	0.54	6,103,770.17	6,103,770,169	83.00	11,826	981,558	6,218.45	102.13
2062	Future Year	F39	0.014781	293.143	7,823,584.06	5,740,007.79	13,563,884.99	0.54	7,324,503.30	7,324,503,296	83.00	11,826	981,558	7,462.12	110.30
2063	Future Year	F40	0.013303	310.732	9,388,312.87	6,888,009.35	16,276,632.95	0.54	8,789,381.79	8,789,381,794	83.00	11,826	981,558	8,954.52	119.12
2064	Future Year	F41	0.011973	329.375	11,265,975.44	8,265,611.22	19,531,916.04	0.54	10,547,234.66	10,547,234,661	83.00	11,826	981,558	10,745.40	128.65
2065	Future Year	F42	0.010775	349.138	13,519,170.53	9,918,733.47	23,438,253.13	0.54	12,656,656.69	12,656,656,693	83.00	11,826	981,558	12,894.46	138.94
2066	Future Year	F43	0.009698	370.086	16,223,004.64	11,902,480.16	28,125,854.88	0.54	15,187,961.64	15,187,961,636	83.00	11,826	981,558	15,473.32	150.06
2067	Future Year	F44	0.008728	392.291	19,467,605.56	14,282,976.19	33,750,974.05	0.54	18,225,525.99	18,225,525,985	83.00	11,826	981,558	18,567.96	162.06
2068	Future Year	F45	0.007855	415.829	23,361,126.67	17,139,571.43	40,501,113.94	0.54	21,870,601.53	21,870,601,525	83.00	11,826	981,558	22,281.52	175.03
2069	Future Year	F46	0.007070	440.779	28,033,351.01	20,567,485.72	48,601,278.51	0.54	26,244,690.39	26,244,690,393	83.00	11,826	981,558	26,737.79	189.03
2070	Future Year	F47	0.006363	467.225	33,640,021.41	24,680,982.86	58,321,471.50	0.54	31,493,595.15	31,493,595,149	83.00	11,826	981,558	32,085.31	204.15
2071	Future Year	F48	0.005726	495.259	40,368,026.89	29,617,179.43	69,985,703.59	0.54	37,792,278.86	37,792,278,857	83.00	11,826	981,558	38,502.34	220.48
2072	Future Year	F49	0.005154	524.974	48,441,632.27	35,540,615.32	83,982,772.57	0.54	45,350,697.19	45,350,697,187	83.00	11,826	981,558	46,202.77	238.12
2073	Future Year	F50	0.004638	556.473	58,129,958.73	42,648,738.39	100,778,253.59	0.54	54,420,796.94	54,420,796,936	83.00	11,826	981,558	55,443.28	257.17
2074	Future Year	F51	0.004175	589.861	69,755,950.47	51,178,486.06	120,935,026.60	0.54	65,304,914.25	65,304,914,254	83.00	11,826	981,558	66,531.90	277.74
2075	Future Year	F52	0.003757	625.253	83,707,140.57	61,414,183.27	145,121,548.09	0.54	78,365,853.51	78,365,853,511	83.00	11,826	981,558	79,838.23	299.96
2076	Future Year	F53	0.003381	662.768	100,448,568.68	73,697,019.93	174,145,251.38	0.54	94,038,975.74	94,038,975,744	83.00	11,826	981,558	95,805.83	323.96
2077	Future Year	F54	0.003043	702.534	120,538,282.42	88,436,423.92	208,975,408.87	0.54	112,846,720.78	112,846,720,788	83.00	11,826	981,558	114,966.94	349.87
2078	Future Year	F55	0.002739	744.686	144,645,938.90	106,123,708.70	250,769,393.28	0.54	135,416,011.83	135,416,011,834	83.00	11,826	981,558	137,960.28	377.86
2079	Future Year	F56	0.002465	789.367	173,575,126.68	127,348,450.44	300,923,366.69	0.54	162,499,157.90	162,499,157,902	83.00	11,826	981,558	165,552.27	408.09
2080	Future Year	F57	0.002219	836.729	208,290,152.02	152,818,140.53	361,108,128.27	0.54	194,998,929.86	194,998,929,806	83.00	11,826	981,558	198,663.67	440.74
2081	Future Year	F58	0.001997	886.933	249,948,182.42	183,381,768.63	433,330,837.98	0.54	233,998,652.51	233,998,652,511	83.00	11,826	981,558	238,395.14	476.00
2082	Future Year	F59	0.001797	940.149	299,937,818.90	220,058,122.35	519,996,881.41	0.54	280,798,315.96	280,798,315,961	83.00	11,826	981,558	286,074.09	514.08
2083	Future Year	F60	0.001617	996.558	359,925,382.68	264,069,746.83	623,996,126.07	0.54	336,957,908.08	336,957,908,078	83.00	11,826	981,558	343,288.84	555.20
2084	Future Year	F61	0.001456	1,056.352	431,910,459.22	316,883,699.20	748,795,211.77	0.54	404,349,414.35	404,349,414,354	83.00	11,826	981,558	411,946.53	599.62
2085	Future Year	F62	0.001310	1,119.733	518,292,551.06	380,260,435.44	898,554,106.23	0.54	485,219,217.36	485,219,217,364	83.00	11,826	981,558	494,335.76	647.59
2086	Future Year	F63	0.001179	1,186.917	621,951,061.27	456,312,522.52	1,078,264,770.71	0.54	582,263,976.19	582,263,976,186	83.00	11,826	981,558	593,202.82	699.40
2087	Future Year	F64	0.001061	1,258.132	746,341,273.53	547,575,027.03	1,293,917,558.69	0.54	698,715,481.69	698,715,481,692	83.00	11,826	981,558	711,843.30	755.35
2088	Future Year	F65	0.000955	1,333.620	895,609,528.24	657,090,032.43	1,552,700,894.29	0.54	838,458,482.92	838,458,482,915	83.00	11,826	981,558	854,211.86	815.78
2089	Future Year	F66	0.000860	1,413.637	1,074,731,433.88	788,508,038.92	1,863,240,886.44	0.54	1,006,150,078.68	1,006,150,078,677	83.00	11,826	981,558	1,025,054.13	881.04
2090	Future Year	F67	0.000774	1,498.455	1,289,677,720.66	946,209,646.70	2,235,888,855.82	0.54	1,207,379,987.54	1,207,379,987,541	83.00	11,826	981,558	1,230,064.44	951.52
2091	Future Year	F68	0.000696	1,588.362	1,547,613,264.79	1,135,451,576.04	2,683,064,429.20	0.54	1,448,855,871.77	1,448,855,871,765	83.00	11,826	981,558	1,476,077.70	1,027.64
2092	Future Year	F69	0.000627	1,683.664	1,857,135,917.75	1,362,541,891.25	3,219,678,492.67	0.54	1,738,626,926.04	1,738,626,926,039	83.00	11,826	981,558	1,771,293.11	1,109.85
2093	Future Year	F70	0.000564	1,784.684	2,228,563,101.30	1,635,050,269.50	3,863,613,155.49	0.54	2,086,352,183.96	2,086,352,183,962	83.00	11,826	981,558	2,125,551.61	1,198.64
2094	Future Year	F71	0.000508	1,891.765	2,674,275,721.56	1,962,060,323.40	4,636,337,936.73	0.54	2,503,622,485.83	2,503,622,485,833	83.00	11,826	981,558	2,550,661.79	1,294.53
2095	Future Year	F72	0.000457	2,005.271	3,209,130,865.87	2,354,472,388.08	5,563,605,259.23	0.54	3,004,346,839.98	3,004,346,839,982	83.00	11,826	981,558	3,060,794.00	1,398.10
2096	Future Year	F73	0.000411	2,125.587	3,850,957,039.05	2,825,366,865.70	6,676,324,030.33	0.54	3,605,216,056.38	3,605,216,056,380	83.00	11,826	981,558	3,672,952.65	1,509.94
2097	Future Year	F74	0.000370	2,253.122	4,621,148,446.86	3,390,440,238.84	8,011,590,938.82	0.54	4,326,359,106.96	4,326,359,106,961	83.00	11,826	981,558	4,407,543.02	1,630.74
2098	Future Year	F75	0.000333	2,388.310	5,545,378,136.23	4,068,528,286.61	9,613,906,811.14	0.54	5,191,510,758.02	5,191,510,758,017	83.00	11,826	981,558	5,289,051.44	1,761.20
2099	Future Year	F76	0.000300	2,531.608	6,654,453,763.47	4,882,233,943.93	11,536,690,238.01	0.54	6,229,812,729.06	6,229,812,729,064	83.00	11,826	981,558	6,346,861.55	1,902.10
2100	Future Year	F77	0.000270	2,683.505	7,985,344,516.17	5,858,680,732.71	13,844,027,592.38	0.54	7,475,775,083.49	7,475,775,083,488	83.00	11,826	981,558	7,616,231.66	2,054.26

APPENDIX II

MODEL #3: 99 YEAR GOLDEN EAGLE MODEL

Estimated Value of XRP under 99 years Golden Eagle Model																	
XRP Value using Money Functions																	
Year	Type	Short Symbol	Discount Factor	Medium of Exchange- Tn $	Measure of Value & Standard of Deferred payment - Tn $	Store Value - Tn $	Total Market Size (Pie)	Market Share	Market Size x Share of XRP in Pie - Tn $	Market Size x Share of XRP in Pie - Bn $	XRP Liquid Supply in Bn	Velocity of Money Supply	XRP Liquid Supply in Bn considering Float	XRP Price per Token in $	XRP Price per Token in $ - PV 10%
				"D1"	"D2"	"D3"	"D1 - D3"	"s"	"Dxs"	"Dxs"	M*1	"v"	M*1*v	P = Dxs/(M*v)	
				World Trade 28.5 Tn $ p.a	World Money - 5323 Tn $	112 Tn $									
				Growth - 6% CAGR till 2030 & same from 2031 to 2121 - expansion in global economy	Growth - 20% CAGR till 2021 (Opportunity Cost)/ Reward to stay invested in XRP	CAGR of 87% from 2023 to 2030 & then 20% CAGR from 2031 to 2121		Initially Trade Fi with XRP, then XRP grows exponentially - XRP with Competition - Average share of Ripple XRP - 54%							
2101	Future Year	F78	0.000243	2,844,315	9,582,413,419.40	7,086,416,879.26	16,612,833,143.17	0.54	8,970,929,897.31	8,970,929,897,312	83.00	11.826	983,558	9,119,480.19	2,218.60
2102	Future Year	F79	0.000218	3,015,186	11,498,896,103.28	8,486,500,255.11	19,985,399,373.57	0.54	10,765,115,661.73	10,765,115,661,730	83.00	11.826	983,558	10,967,376.01	2,396.09
2103	Future Year	F80	0.000197	3,196,097	13,798,675,323.94	10,123,800,306.13	23,922,478,826.16	0.54	12,918,138,566.13	12,918,138,566,127	83.00	11.826	983,558	13,160,850.98	2,587.78
2104	Future Year	F81	0.000177	3,387,863	16,558,410,388.72	12,148,560,367.35	28,706,974,143.94	0.54	15,501,766,037.73	15,501,766,037,728	83.00	11.826	983,558	15,793,020.93	2,794.80
2105	Future Year	F82	0.000159	3,591,135	19,870,092,466.47	14,578,272,440.82	34,448,368,498.43	0.54	18,602,118,989.15	18,602,118,989,151	83.00	11.826	983,558	18,951,624.85	3,018.39
2106	Future Year	F83	0.000143	3,806,603	23,844,110,959.76	17,493,926,928.99	41,338,041,695.35	0.54	22,322,542,515.49	22,322,542,515,491	83.00	11.826	983,558	22,741,949.55	3,259.86
2107	Future Year	F84	0.000129	4,034,999	28,613,933,151.72	20,992,712,314.79	49,606,649,501.50	0.54	26,787,050,730.81	26,787,050,730,811	83.00	11.826	983,558	27,290,339.17	3,520.64
2108	Future Year	F85	0.000116	4,277,099	34,335,519,782.06	25,191,254,777.74	59,526,778,836.90	0.54	32,144,460,571.93	32,144,460,571,927	83.00	11.826	983,558	32,748,406.69	3,802.30
2109	Future Year	F86	0.000104	4,533,725	41,202,623,738.47	30,229,505,733.29	71,432,134,005.49	0.54	38,573,352,362.96	38,573,352,362,964	83.00	11.826	983,558	39,298,087.70	4,106.48
2110	Future Year	F87	0.000094	4,805,748	49,443,148,486.16	36,275,406,879.95	85,718,560,171.86	0.54	46,288,022,492.81	46,288,022,492,807	83.00	11.826	983,558	47,157,704.89	4,435.00
2111	Future Year	F88	0.000085	5,094,093	59,331,778,183.40	43,530,488,255.94	102,862,271,533.43	0.54	55,545,626,628.05	55,545,626,628,053	83.00	11.826	983,558	56,589,245.49	4,789.80
2112	Future Year	F89	0.000076	5,399,739	71,198,133,820.08	52,236,585,907.13	123,434,725,126.65	0.54	66,654,751,568.55	66,654,751,568,551	83.00	11.826	983,558	67,907,094.20	5,172.98
2113	Future Year	F90	0.000069	5,723,723	85,437,760,584.09	62,683,903,088.56	148,121,663,396.37	0.54	79,985,701,474.04	79,985,701,474,041	83.00	11.826	983,558	81,488,512.62	5,586.82
2114	Future Year	F91	0.000062	6,067,146	102,525,312,700.91	75,220,683,706.27	177,746,002,474.32	0.54	95,982,841,336.14	95,982,841,336,135	83.00	11.826	983,558	97,786,214.71	6,033.77
2115	Future Year	F92	0.000056	6,431,175	123,030,375,241.09	90,264,820,447.52	213,295,202,119.79	0.54	115,179,409,144.69	115,179,409,144,686	83.00	11.826	983,558	117,343,457.18	6,516.47
2116	Future Year	F93	0.000050	6,817,046	147,636,450,289.31	108,317,784,537.02	255,954,241,643.38	0.54	138,215,290,487.43	138,215,290,487,426	83.00	11.826	983,558	140,812,148.12	7,037.79
2117	Future Year	F94	0.000045	7,226,068	177,163,740,347.18	129,981,341,444.43	307,145,089,017.67	0.54	165,858,348,069.54	165,858,348,069,543	83.00	11.826	983,558	168,974,577.22	7,600.81
2118	Future Year	F95	0.000040	7,659,632	212,596,488,416.61	155,977,609,733.32	368,574,105,809.56	0.54	199,030,017,137.16	199,030,017,137,161	83.00	11.826	983,558	202,769,492.11	8,208.87
2119	Future Year	F96	0.000036	8,119,210	255,115,786,099.93	187,173,131,679.98	442,288,925,899.12	0.54	238,836,019,985.53	238,836,019,985,525	83.00	11.826	983,558	243,323,389.94	8,865.58
2120	Future Year	F97	0.000033	8,606,363	306,138,943,319.92	224,607,758,015.97	530,746,709,942.25	0.54	286,603,223,368.82	286,603,223,368,817	83.00	11.826	983,558	291,988,067.31	9,574.83
2121	Future Year	F98	0.000030	9,122,745	367,366,731,983.90	269,529,309,619.17	636,896,050,725.81	0.54	343,923,867,391.94	343,923,867,391,939	83.00	11.826	983,558	350,385,680.10	10,340.82

APPENDIX II

MODEL #3: 99 YEAR GOLDEN EAGLE MODEL

XRP Valuation under 99 Year Golden Eagle Model		
Velocity of Money & No. of transactions per annum		
1 Hr	60	Minutes
60 Minutes	3,600	Seconds
24 Hrs in a day	86,400	Seconds
1 year is 365 days	31,536,000	Seconds
Mn Seconds p.a.	32	Seconds
Velocity Seconds p.a.	8	25% - Idle time / Capacity
Ripple XRP Speed	1,500 Transaction	Per Second
No of Transactions	11,826	mn Qty p.a.

Estimated Value of XRP under 99 years Golden Eagle Model					
XRP Valuation over life Cycle using QTM, Money Functions					
Particulars	**Details**	**Qty**	**Measure**	**Rate in USD**	**Value**
Initial Investment	**12/31/22**	**1,000,000**	**1 Mn**	**0.40**	**- 400,000**
Money Functions					
Medium of Exchange -	World Trade 28.5 Tn $ p.a	Growth - 6% CAGR till 2030 & 2031 to 2121			
Measure of Value & Standard of Deferred payment	World Money - 5323 Tn $	Growth - 20% CAGR till 2021 (Opportunity Cost) / Reward to stay invested in XRP			
Store Value	CAGR of 87% from 2023 to 2030 & then 20% CAGR from 2031 to 2121				
Expected Terminal Value at end of 2121		**1,000,000**	**1 Mn**	**10,341**	**10,340,815,349**
Capital Appreciation				**10,340**	**10,340,415,349**
Factor				**Times**	**25,851**
Note: Included in Above - Recurring income (Staking / Lending / Other Opportunities) @ 20% CAGR and fully reinvested					

XRP Value under 99 years Golden Eagle Model						
XRP Valuation over life Cycle using QTM, Money Functions						
Scenarios	**Probability %**	**Supply Variable**	**Supply in Bn**	**XRP Value / Coin (USD)**	**Probability Ratio**	**Present Value of XRP per Coin (USD)**
1	10%	Total Supply	100.00	8,583	0.10	858
2	40%	Circulating Liquid Supply	83.00	10,341	0.40	4,136
3	40%	Current Circulating Supply	56.60	15,164	0.40	6,066
4	10%	Future Circulating Liquid Supply	36.90	23,260	0.10	2,326
Total	**100%**				**1.00**	**13,386**

Please note that the Model Builder of the "99 Year Golden Eagle Model" also prepared 99 year projections for (i) Token Supply relating to the flow of XRP out of escrow, and (ii) Liquid Supply that accounted for approx. 17 billion tokens to be retained by the founders of the XRPL. Those supply-related charts have been omitted from this Appendix as they are too voluminous to set forth in this document in a manner in which the reader could make sense of them.

APPENDIX II

MODEL #3: 99 YEAR GOLDEN EAGLE MODEL

Data Sources:

https://www.visualcapitalist.com/100-trillion-global-economy/

https://www.imf.org/external/datamapper/NGDPD@WEO/OEMDC/ADVEC/WEOWORLD

https://www.iso.org/contents/news/2022/08/the-new-trade-agenda-.html

https://unctad.org/system/files/official-document/ditcinf2022d1_en.pdf

https://www.wto.org/english/res_e/statis_e/trade_evolution_e/evolution_trade_wto_e.htm

APPENDIX II

MODEL #4: DISCOUNTED CASH FLOW MODEL

Key Assumptions:

Effective Valuation Date	1-Jan-2023
Discount Rate	10.0%
Mid-Year Discounting (0 = Off; 1 = On)	ON
Base Global Transactions (US$ in trillions)	$104.0
Global Economic Growth Rate (%)	2.0%
XRP Fully Diluted Supply (billions)	99.9
XRP Circulating Supply (billions)	50.7
Staggered Adoptions	
Years Until Full Adoption	10.0

Model:

Fiscal Year Ended, December 31:	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Global Transactions (US$ in trillions)	$106	$108	$110	$113	$115	$117	$119	$122	$124	$127
Adj. Global Transactions (US$ in trillions)	$106	$108	$110	$113	$115	$117	$119	$122	$124	$127
XRP Adoption (% of Global Transactions)	2%	4%	8%	16%	30%	44%	57%	71%	95%	100%
XRP Transactions (US$ in trillions)	$2	$4	$9	$18	$34	$51	$68	$87	$118	$127
Cumulative Months	12	24	36	48	60	72	84	96	108	120
Months in Period	12	12	12	12	12	12	12	12	12	12
Discount Period	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5
Discount Factor	0.95	0.87	0.79	0.72	0.65	0.59	0.54	0.49	0.44	0.40
Discounted Cash Flow (Annual)	$2	$4	$7	$13	$22	$30	$37	$42	$53	$51

Terminal Year LTM Cash Flow	$127
Terminal Year LTM Discount Factor	0.40
Terminal Value (Perpetual Growth)	$1,616
Discounted TV (Perpetual Growth)	$654

Total PV ($US in trillions)	$915
XRP Fully Diluted Supply (billions)	99.9
Price/XRP ($US)	$9,156

Total PV ($US in trillions)	$915
XRP Circulating Supply (billions)	50.7
Price/XRP ($US)	$18,036

Global Economic Growth Rate \ Discount Rate	12.0%	10.0%	8.0%	6.0%
0.0%	$4,949	$6,464	$8,825	$12,896
1.0%	$5,741	$7,646	$10,747	$16,505
2.0%	$6,716	$9,156	$13,358	$22,001
3.0%	$7,935	$11,137	$17,076	$31,277

Global Economic Growth Rate \ Discount Rate	12.0%	10.0%	8.0%	6.0%
0.0%	$9,748	$12,734	$17,385	$25,404
1.0%	$11,310	$15,062	$21,171	$32,513
2.0%	$13,230	$18,036	$26,314	$43,339
3.0%	$15,631	$21,938	$33,638	$61,612

Full Adoption Rate (Years) \ Global Economic Growth Rate	0.0%	1.0%	2.0%	3.0%
10	$6,464	$7,646	$9,156	$11,137
15	$6,464	$7,646	$9,156	$11,137
20	$6,464	$7,646	$9,156	$11,137
25	$6,464	$7,646	$9,156	$11,137

Notes:

1. IMF expects the global economy to reach nearly $104 trillion in nominal value by the end of 2022, https://www.imf.org/external/datamapper/NGDPD@WEO/OEMDC/ADVEC/WEOWORLD
2. *"The $100 Trillion Global Economy in One Chart"* published by Visual Capitalist: https://www.visualcapitalist.com/100-trillion-global-economy/

APPENDIX II

MODEL #5: COLLATERALIZATION MODEL

	Asset Class	USD$ Estimated Valuation	SOURCE		
A	Silver	$ 1,327,000,000,000	Companies Market Cap - 1-18-23		
B	Cryptocurrencies	-	CoinMarket Cap - 1-18-23	Est. Value	$ 968,154,830,125
C	Global Military Spending	2,113,000,000,000	FY2021 - Stockholm International Peace Research Institute - Fact Sheet - April 2022		
D	U.S. Federal Deficit (FY 2020)	2,800,000,000,000	U.S. CBO (Projected - 9-20-2022)		
E	Coins & Bank Notes	-	BIS	Est. Value	$ 8,000,000,000,000
F	Central Bank Balance Sheets (G20)	201,519,274,998,987	Tradingeconomics.com - 2022 (Note: US, China, Japan and EuroZone only)		
G	The World's Billionaires	-	Forbes	Est. Value	$ 12,700,000,000,000
H	Global Oil and Gas Market	7,330,080,000,000	2023 - Oil And Gas Global Market Report 2023		
I	Global Food and Grocery	11,639,000,000,000	FY2023 - Global Food & Grocery Retail Market Size Report, 2022 - 2030 (Projected at 3.0% CAGR from FY2022)**		
J	Gold	12,578,000,000,000	Companies Market Cap - 1-18-23		
K	Global Equities	95,900,000,000,000	World Federation of Exchanges (WFE) - Latesst 2022 Data		
L	Global Debt	300,100,000,000,000	IIF Debt Monitor - Q2 2022		
M	Narrow Money Supply	-	CIA Factbook	Est. Value	$ 49,000,000,000,000
N	Broad Money Supply	82,700,000,000,000	Tradingeconomics.com - 2022 (Note: US, China, Japan and EuroZone only)		
O	Global Real Estate	326,500,000,000,000	Savills Global Research (2020 est.)		
P	Global Private Wealth	463,600,000,000,000	Credit Suisse - Wealth Report 2022		
Q	Derivatives (Market Value)	-	BIS (Dec 2019)		
R	Derivatives (Notional Value)	600,000,000,000,000	BIS (Dec 2019)	Est. Value	$ 12,400,000,000,000
S	US Unfunded Liabilities	180,900,000,000,000	US Debt Clock: https://www.usdebtclock.org		
T	**REPORTED "KNOWN" TOTAL**	**$ 2,289,006,354,998,990**			
U	$14.3 Quadrillion Lien (Assume 20.0% Drawn)	$ 2,860,000,000,000,000	https://stateofthenation2012.com/wp-content/uploads/2017/07/North-American-Water-and-Power-Alliance.pdf		
V	BIS - $80 Trillion "Off Balance Sheet FX Swaps"	80,000,000,000,000	https://www.reuters.com/markets/currencies/global-markets-bis-urgent-2022-12-05/		
W	Dept of Defense - Missing $94.7 Trillion (2017-19	94,700,000,000,000	https://www.nestmann.com/about-that-missing-94-7-trillion		
X	Classified Programs***	-			
Y	**REPORTED "UNKNOWN" TOTAL**	**$ 3,034,700,000,000,000**			
Z	**TOTAL KNOWN/UNKOWN**	**$ 5,323,706,354,998,990**			
A1	Risk Adjusted Coverage Ratio % - 2030****	125.0%	OMB; St. Louis FED - Cost/Risk of growing liquidity growth factor		
B1	**RISK ADJUSTED TOTAL**	**$ 6,654,632,943,748,730**			
C1	**TOTAL XRP**	99,989,156,648	CoinMarketCap - 1-18-23		
D1	**CIRCULATING SUPPLY XRP**	50,713,323,547	CoinMarketCap - 1-18-23		
E1		**$ 1,330,926,588,749,750**	Projected Increase at 2030 over Current Total (E31)		
F1	**XRPV-8**				
G1	Discount Rate	8.0%			
H1	**2030 XRPV-8**	$ 6,290,484,600,611,140			
I1	Price per XRP - Total Supply (US Dollars)	**$ 62,911.67**			
J1	Price Per XRP - Circulating Supply (US Dollars)	**$ 124,040.08**			
K1	**XRPV-10**				
L1	Discount Rate	10.0%			
M1	**2030 XRPV-10**	$ 6,216,440,175,714,490			
N1	Price per XRP - Total Supply (US Dollars)	**$ 62,171.14**			
O1	Price Per XRP - Circulating Supply (US Dollars)	**$ 122,580.02**			
P1	**XRPV-12**				
Q1	Discount Rate	12.0%			
R1	**2030 XRPV-12**	$ 6,148,192,363,098,650			
S1	Price per XRP - Total Supply (US Dollars)	**$ 61,488.59**			
T1	Price Per XRP - Circulating Supply (US Dollars)	**$ 121,234.26**			

Additional Source: All the Worlds Money Infographic (2022) - https://www.visualcapitalist.com/all-of-the-worlds-money-and-markets-in-one-visualization-2022/

* "Big Bang" Single Day Migration Sources:

Federal Reserve: https://www.federalregister.gov/documents/2022/10/24/2022-23002/new-message-format-for-the-fedwire-funds-service
"The Board of Governors of the Federal Reserve System (Board) is announcing that the Federal Reserve Banks (Reserve Banks) will adopt the ISO® 20022 message format for the Fedwire® Funds Service ***on a single day*** , March 10, 2025." (emphasis added)

BNY Mellon: https://www.bnymellon.com/content/dam/bnymellon/documents/pdf/iso-20022/ISO20022%20Factsheet%20Vol%203%20Revised_ART_FINAL_081122.pdf
"The overall migration of the industry is now expected to begin with the enhanced ISO 20022 messages on the SWIFT network in November of 2022, together with the migration of the EUR Payment Market Infrastructures T2 and EBA Euro1. The UK CHAPS migration to enhanced ISO 20022 is scheduled for April 2023, while the USD clearing system CHIPS is expected to follow later in the year and the global transition is finally rounded out in March 2025 with the migration of Fedwire. All of these major market infrastructures have adopted a ***big-bang migration approach*** ." (emphasis added)

American Bankers Association: https://www.finextra.com/newsarticle/39471/aba-backs-feds-plan-for-single-day-fedwire-iso-20022-migration-in-2023
"Responding to the Fed's call for comment, the ABA says it supports ***a big bang implementation strategy*** for the ISO 20022 migration in November 2023, suggesting one of two non-holiday weekends during the month." (emphasis added)

** Source: https://www.grandviewresearch.com/industry-analysis/food-grocery-retail-market

*** The Reported "Unknown" Amounts imply the existence of classified programs that are not publicly disclosed through traditional reporting sources. Accordingly, absent more transparent disclosure, there is no way to assess whether the amounts/values of such classified programs are material for the purposes of this valuation process. Conservatism being a foundational accounting principle, the decision was made to include a reference to these amounts at zero USD.

**** Risk Adjusted Coverage Ratio % Applied as forecast of economic expansion at 2030. The 25.0% increase over 7 years (*i.e.*, 2030-2023) represents a static annual, non-compounding increase of 3.6% per year.

APPENDIX II

MODEL #5: COLLATERALIZATION MODEL

NET PRESENT VALUE CALCULATIONS

PV-8

Year	Type	Short Symbol	Discounting Factor @ 8%	Risk Adjusted Ratio	Increment	Value in USD	NPV at year end
2023	**Current Year**	**Y0**	**100.0000**	**100.00**	**0.00**	**5,323,706,354,998,990**	**5,323,706,354,998,990**
2024	Future Year	F1	92.0000	103.57	3.57	190,132,369,821,392	174,921,780,235,681
2025	Future Year	F2	84.6400	107.14	3.57	190,132,369,821,392	160,928,037,816,827
2026	Future Year	F3	77.8688	110.71	3.57	190,132,369,821,392	148,053,794,791,480
2027	Future Year	F4	71.6393	114.29	3.57	190,132,369,821,392	136,209,491,208,162
2028	Future Year	F5	65.9082	117.86	3.57	190,132,369,821,392	125,312,731,911,509
2029	Future Year	F6	60.6355	121.43	3.57	190,132,369,821,392	115,287,713,358,588
2030	Future Year	F7	55.7847	125.00	3.57	190,132,369,821,392	106,064,696,289,901
					25.00	**1,330,926,588,749,750**	**966,778,245,612,148**
						Total DCF Y0+(F1 : F7) in USD	**6,290,484,600,611,140**

PV-10

Year	Type	Short Symbol	Discounting Factor @ 10%	Risk Adjusted Ratio	Increment	Value in USD	NPV at year end
2023	**Current Year**	**Y0**	**100.0000**	**100.00**	**0.00**	**5,323,706,354,998,990**	**5,323,706,354,998,990**
2024	Future Year	F1	90.0000	103.57	3.57	190,132,369,821,392	171,119,132,839,253
2025	Future Year	F2	81.0000	107.14	3.57	190,132,369,821,392	154,007,219,555,328
2026	Future Year	F3	72.9000	110.71	3.57	190,132,369,821,392	138,606,497,599,795
2027	Future Year	F4	65.6100	114.29	3.57	190,132,369,821,392	124,745,847,839,816
2028	Future Year	F5	59.0490	117.86	3.57	190,132,369,821,392	112,271,263,055,834
2029	Future Year	F6	53.1441	121.43	3.57	190,132,369,821,392	101,044,136,750,251
2030	Future Year	F7	47.8297	125.00	3.57	190,132,369,821,392	90,939,723,075,226
					25.00	**1,330,926,588,749,750**	**892,733,820,715,502**
						Total DCF Y0+(F1 : F7) in USD	**6,216,440,175,714,490**

PV - 12

Year	Type	Short Symbol	Discounting Factor @ 12%	Risk Adjusted Ratio	Increment	Value in USD	NPV at year end
2023	**Current Year**	**Y0**	**100.0000**	**100.00**	**0.00**	**5,323,706,354,998,990**	**5,323,706,354,998,990**
2024	Future Year	F1	88.0000	103.57	3.57	190,132,369,821,392	167,316,485,442,825
2025	Future Year	F2	77.4400	107.14	3.57	190,132,369,821,392	147,238,507,189,686
2026	Future Year	F3	68.1472	110.71	3.57	190,132,369,821,392	129,569,886,326,924
2027	Future Year	F4	59.9695	114.29	3.57	190,132,369,821,392	114,021,499,967,693
2028	Future Year	F5	52.7732	117.86	3.57	190,132,369,821,392	100,338,919,971,570
2029	Future Year	F6	46.4404	121.43	3.57	190,132,369,821,392	88,298,249,574,982
2030	Future Year	F7	40.8676	125.00	3.57	190,132,369,821,392	77,702,459,625,984
					25.00	**1,330,926,588,749,750**	**824,486,008,099,664**
						Total DCF Y0+(F1 : F7) in USD	**6,148,192,363,098,650**

APPENDIX II

MODEL #5: COLLATERALIZATION MODEL

G20 - Central Bank Balance Sheets 2022/23

	Amount	Measured Unit	Exchange Rate*		USD Equivelant	Sample Date
Argentina	28,570,469,247,000,000	ARS**	0.0055	$	157,137,580,858,500	Nov-22
Australia	623,065,000,000	AUD	0.70	$	436,145,500,000	Jan-23
Brazil	4,063,046,000,000	BRL	0.19	$	771,978,740,000	Sep-22
Canada	414,633,000,000	CAD	0.75	$	310,974,750,000	Nov-22
China	40,152,800,000,000	CNY	0.15	$	6,022,920,000,000	Nov-22
Euro Area***	7,968,035,000,000	EUR	1.08	$	8,605,477,800,000	Jan-23
France	1,985,228,000,000	EUR	1.08	$	2,144,046,240,000	Nov-22
Germany	3,064,000,000,000	EUR	1.08	$	3,309,120,000,000	Sep-22
India	27,791,000,000,000	INR	0.012	$	333,492,000,000	Nov-22
Italy	1,482,300,000,000	EUR	1.08	$	1,600,884,000,000	Dec-22
Japan	703,941,000,000,000	JPY	0.0077	$	5,420,345,700,000	Dec-22
Mexico	4,378,522,609,000	MXN	0.053	$	232,061,698,277	Dec-22
Netherlands	610,388,000,000	EUR	1.08	$	659,219,040,000	Nov-22
Russia	48,556,042,000,000	RUB	0.015	$	728,340,630,000	Oct-22
Saudi Arabia	1,997,625,000,000	SAR	0.27	$	539,358,750,000	Nov-22
Singapore	643,692,000,000	SGD	0.76	$	489,205,920,000	Dec-22
South Africa	1,094,319,000,000	ZAR	0.058	$	63,470,502,000	Dec-22
South Korea	584,276,000,000,000	KRW	0.00081	$	473,263,560,000	Nov-22
Spain	1,070,496,000,000	EUR	1.08	$	1,156,135,680,000	Dec-22
Switzerland	884,966,000,000	CHF	1.09	$	964,612,940,000	Nov-22
Turkey	3,535,540,570,000	TRY	0.053	$	187,383,650,210	Nov-22
United Kingdom	1,087,646,000,000	GBP	1.24	$	1,348,681,040,000	Jan-23
United States	8,584,576,000,000	USD	1.00	$	8,584,576,000,000	Nov-22
			TOTAL (USD)	**$**	**201,519,274,998,987**	

Source: Trading Economics - G20 Central Bank Balance Sheets - https://tradingeconomics.com/country-list/central-bank-balance-sheet?continent=g20

*Exchange Rates: Google Search 1/20/2023

**Note - Trading Economics has this amount denominated in USD Million, which would imply the number is US$28.57 Quadrillion. We believe the source is incorrect, and have used Argentinian Pesos with applicable conversion rate.

***Euro Area would typically include France, Germany, Italy, Netherlands and Spain. However, if those countries balance sheets are removed from the Euro Zone amount reported by Trading Economics, the resulting number is negative. Therefore, we have assumed that the Euro Zone balance sheet reported in Trading Economics excludes France, Germany, Italy, Netherlands and Spain for the purposes of this reporting since those countries are reported separately.

APPENDIX II

MODEL #6: QUANTUM LIQUIDITY MODEL

XRP PRICE DISCOVERY PROCESS [ALL-THE-MONEY/ASSETS]

CATEGORY OF ASSETS FOR XRP INSURANCE COVERAGE	$2021: USD ESTIMATED VALUATION
SILVER	44,000,000,000
DIGITAL CURRENCIES	244,000,000,000
GLOBAL MILITARY SPENDING	1,782,000,000,000
US FED DEFICIT [FY2021]	3,800,000,000,000
COINS & BANKS	6,662,000,000,000
FEDRAL BALANCE SHEET	7,037,000,000,000
THE WORLD'S BILLIONAIRES	8,000,000,000,000
GOLD	10,891,000,000,000
THE FORTUNE 500	22,600,000,000,000
STOCK MARKETS [APRIL 2020]	89,475,000,000,000
NARROW MONEY SUPPLY	35,183,000,000,000
BROAD MONEY SUPPLY	95,698,000,000,000
GLOBAL DEBT [IIF DEBT MONITOR]	252,600,000,000,000
GLOBAL R/E [SAVILIS GLOBSL RESEARCH '18 EST.]	280,600,000,000,000
GLOBAL WEALTH - CREDIT SUISSE	360,603,000,000,000
DERVIATIVES [MARKET VALUE] BIS DEC-2019	11,600,000,000,000
DERIVATIVES [NOTIONAL VALUE] BIS DEC-2020	558,500,000,000,000
TOTAL GLOBAL FINANCIAL DEBT	**1,745,319,000,000,000**
ROUNDING	**1,750,000,000,000,000**
LESS; [20%] FOR MARKET FULCTUATIONS	(350,000,000,000,000)
TOTAL [ADJUSTED] GLOBAL FINANCIAL DEBT	**1,400,000,000,000,000**
RISK ADJUSTED COVERAGE RATIO [%]	125.00%
TOTAL [MINIMUM] REQUIRED XRP COVERAGE VALUE	**1,750,000,000,000,000**
DECEMBER 31, 2021: ESTIMATED GLOBAL FIANCIAL MARKETS	**1,750,000,000,000,000**
DECEMBER 31, 2022: [ADJUSTMENTS]	**2022: $USD ADJUSTEMENTS VALUATION**
2022 TOTAL GLOBAL FINANCIAL MKTS REPORT [DELTA Δ]	322,256,000,000,000
1. FEDERAL RESERVE [NAWPA] LOAN	14,300,000,000,000,000
2. QUANTUM TRADING - INCREASES	1,400,000,000,000,000
3. NESARA INCLUSION -[3]E	485,865,041,378,125
4. GESARA-GLOBAL CAPITAL INFLOWS	4,444,400,000,000,000
5. XRP BUYBACK-CAPITIAL INCLUSION	440,000,000,000,000
6. BIS-OFF BALANCE SHEET DERIVATIVES	200,000,000,000,000
7. UNFUNDED PENSION & SOCIAL SECURITY	2,500,000,000
2022 TOTAL ADJUSTMENTS	**21,592,523,541,378,100**
2022 TOTAL GLOBAL FINANCIAL MARKETS	**23,342,523,541,378,100**
ESTIMATED GROWTH FACTOR	1.25
[ADJUSTED] 2022 TOTAL GLOBAL MARKETS	**29,178,154,426,722,700**
PRELIMINARY BASE-10^n	16.47
BASE-10^n [FUNCTION]	16.00
FINAL CONVERTED BASE-10^n CALCULATION	17.00
SCIENTIFIC [EXPONETIAL] NOTATION	1E+17
XRP[ATM] BASE-10 NUMERIC VALUE [1]	**100,000,000,000,000,000**
CALCULATION TO DETERMINE FAIR MARKET VALUE-XRP:	
STEP 1: **XRP**[ATM] BASE-10 NUMERIC VALUE	**100,000,000,000,000,000**
STEP 2: GROSS MINTED XRP TOKENS	**100,000,000,000**
STEP 3: STEP 1 [DIVIDED] BY STEP 2	**1,000,000**

1 **Numeric value must always be Base-10 value for a "Square in TIME." Such as 10:[10^1] 100:[10^2] 1,000:[10^3] 10,000:[10^4] 100,000:[10^5] 1,000,000:[10^6]**

APPENDIX II

MODEL #6: QUANTUM LIQUIDITY MODEL

XRP Models [XRPV-10/BASE-10/SQ OF 625]

Three Models: [1] XRPV-10, Base-10, and SQ of 625

SQUARE of .625 [EARTH]

Square of .625 = .390625. If we use 106 for the "Square-in-TIME" the Square of 625,000 = 390,625. It is here our Primary Novel Pricing Model for RP[WRC] remains the same, but produces the "truest" Base-10 every calculated. By using our newest discovery: "The Hidden Square of [625] for the unseen gravitational operating system pulling at the central core, of Base-10.

Ten Year Term for XRP BUYBACK: [Annual Schedule]

3 MODELS: [2020-2030] Years Left	MODEL #1	MODEL #2	MODEL #3
2020: 12.22.20 - 12.22.21	385,543	375,000	390,625
2021: 12.22.21 - 12.22.22	424,098	437,500	451,563
2022: 12.22.22 - 12.22.23	466,507	500,000	512,500
2023: 12.22.23 - 12.22.24	513,158 [1]	562,500 [1]	573,438 [1]
2024: 12.22.24 - 12.22.25	564,474	625,000	634,375
2025: 12.22.25 - 12.22.26	620,921	687,500	695,313
2026: 12.22.26 - 12.22.27	683,013	750,000	756,250
2027: 12.22.27 - 12.22.28	751,315	812,500	817,188
2028: 12.22.28 - 12.22.29	826,446	875,000	878,125
2029: 12.22.29 - 12.22.30	909,901	937,500	939,063
2030: 12.22.30	1,000,000	1,000,000	1,000,000
[1] Values at 12/31/22			

XRP Model #1 Pricing for Discounted Present Value of $1M In 2030. [XRPV-10, 10% Interest] Calculated On A Daily Basis

YEAR	Closing	Closing	Closing	Closing	Closing	Closing	Closing	Closing
2023	Month	Month	Month	Month	Month	Month	Month	Month
Day	May	June	July	August	September	October	November	December
1	529,859.21	534,088.94	538,343.21	542,636.05	546,967.79	551,324.69	555,726.73	560,152.39
2	529,995.47	534,230.86	538,481.66	542,775.59	547,113.14	551,466.51	555,874.37	560,296.44
3	530,131.73	534,372.79	538,620.10	542,915.14	547,258.48	551,608.32	556,022.02	560,440.49
4	530,267.99	534,514.71	538,758.54	543,054.69	547,403.83	551,750.13	556,169.66	560,584.55
5	530,404.25	534,656.64	538,896.98	543,194.23	547,549.18	551,891.95	556,317.30	560,728.60
6	530,540.51	534,798.56	539,035.43	543,333.78	547,694.53	552,033.76	556,464.94	560,872.65
7	530,676.77	534,940.49	539,173.87	543,473.33	547,839.88	552,175.57	556,612.58	561,016.70
8	530,813.03	535,082.41	539,312.31	543,612.87	547,985.22	552,317.39	556,760.22	561,160.75
9	530,949.29	535,224.34	539,450.76	543,752.42	548,130.57	552,459.20	556,907.87	561,304.80
10	531,085.55	535,366.26	539,589.20	543,891.96	548,275.92	552,601.01	557,055.51	561,448.85
11	531,221.81	535,508.19	539,727.64	544,031.51	548,421.27	552,742.83	557,203.15	561,592.90
12	531,358.07	535,650.11	539,866.08	544,171.06	548,566.62	552,884.64	557,350.79	561,736.96
13	531,494.33	535,792.04	540,004.53	544,310.60	548,711.96	553,026.45	557,498.43	561,881.01
14	531,630.59	535,933.96	540,142.97	544,450.15	548,857.31	553,168.27	557,646.07	562,025.06
15	531,766.85	536,075.89	540,281.41	544,589.70	549,002.66	553,310.08	557,793.72	562,169.11
16	531,903.11	536,217.82	540,419.86	544,729.24	549,148.01	553,451.89	557,941.36	562,313.16
17	532,039.37	536,359.74	540,558.30	544,868.79	549,293.36	553,593.70	558,089.00	562,457.21
18	532,175.63	536,501.67	540,696.74	545,008.34	549,438.70	553,735.52	558,236.64	562,601.26
19	532,311.89	536,643.59	540,835.19	545,147.88	549,584.05	553,877.33	558,384.28	562,745.31
20	532,448.15	536,785.52	540,973.63	545,287.43	549,729.40	554,019.14	558,531.92	562,889.37
21	532,584.41	536,927.44	541,112.07	545,426.98	549,874.75	554,160.96	558,679.57	563,033.42
22	532,720.67	537,069.37	541,250.51	545,566.52	550,020.10	554,302.77	558,827.21	563,177.47
23	532,856.93	537,211.29	541,388.96	545,706.07	550,165.44	554,444.58	558,974.85	563,321.52
24	532,993.19	537,353.22	541,527.40	545,845.61	550,310.79	554,586.40	559,122.49	563,465.57
25	533,129.45	537,495.14	541,665.84	545,985.16	550,456.14	554,728.21	559,270.13	563,609.62
26	533,265.71	537,637.07	541,804.29	546,124.71	550,601.49	554,870.02	559,417.77	563,753.67
27	533,401.97	537,778.99	541,942.73	546,264.25	550,746.84	555,011.84	559,565.42	563,897.72
28	533,538.23	537,920.92	542,081.17	546,403.80	550,892.18	555,153.65	559,713.06	564,041.78
29	533,674.49	538,062.84	542,219.61	546,543.35	551,037.53	555,295.46	559,860.70	564,185.83
30	533,810.75	538,204.77	542,358.06	546,682.89	551,182.88	555,437.28	560,008.34	564,329.88
31	533,947.01		542,496.50	546,822.44		555,579.09		564,473.93

APPENDIX II

MODEL #6: QUANTUM LIQUIDITY MODEL

Pure Math Proof for Calculating "XRP[ATM]" Resulting In Novel Price Discovery for XRP[QLR] Quantum Liquidity Reserve [Quantility]

EQUATION: $\frac{ATM}{TMC}^{\dagger} = XRP$

† A Top-Down Approach first calculates ATM, based upon the best information available, then discounts this amount to the value determined to be the total global markets.

ATM = All-The-Money/Assets
TMC = Total Minted XRP
X = Minimum Price for XRP for QFS/XRPL, Quantum Liquidity Access.

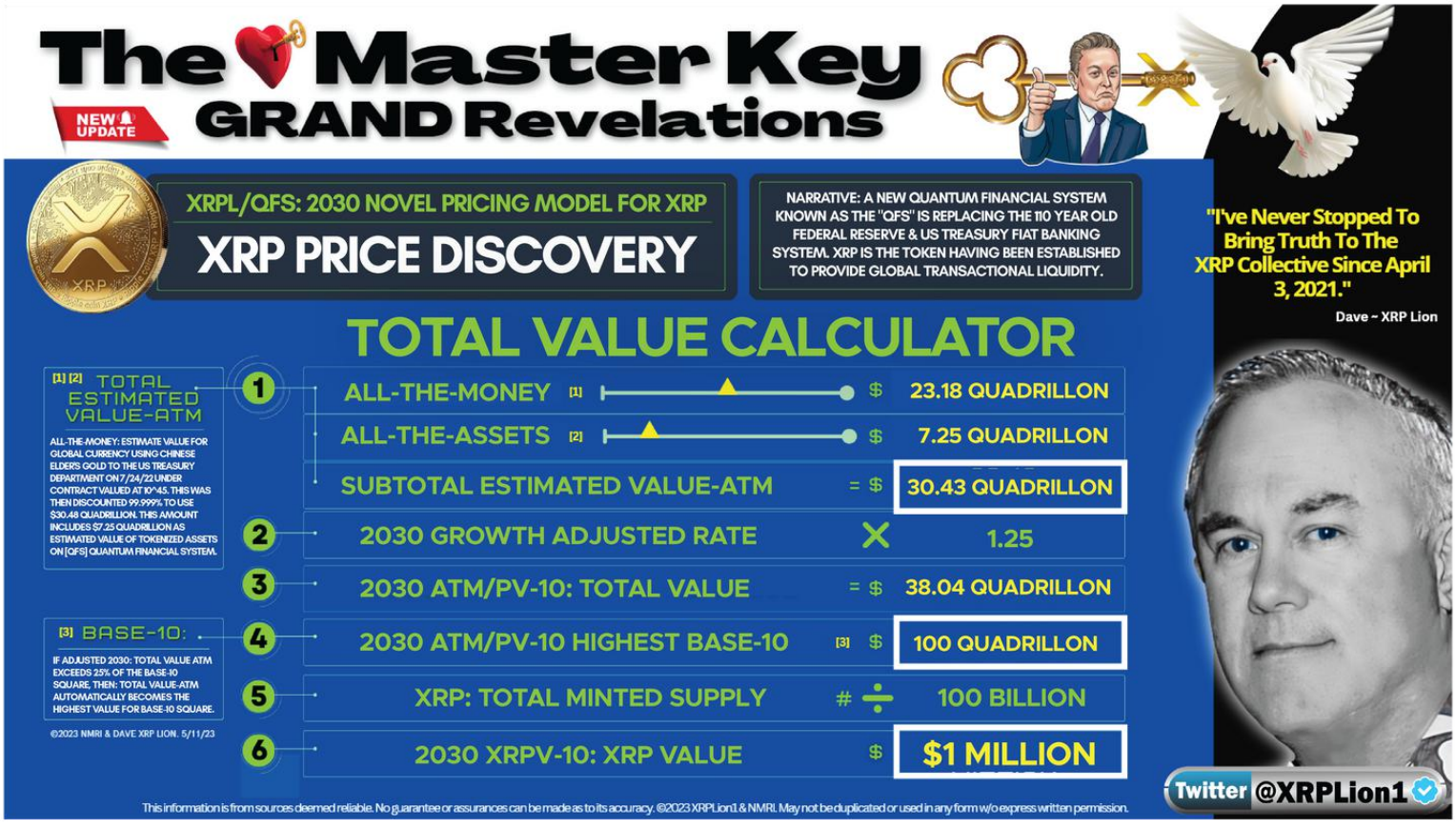
Chinese Elders [10^{45}] = 45 ZERO's

1. Signed Agreement w/ US Treasury Dept on 7/24/22.
2. Received ALL GOLD to FUND, NESARA/XRP BUYBACK /GESARA.
3. Total Cost of BUYBACK Approximately [.534%] as of 6/1/23.

Best Estimate of Global "ATM":

1. Value of Gold Contractualluy Given to US Treasury on 7/24/22 for NESARA/XRP BUYBACK/GESARA: $\$10^{45}$ [Quadrillion].
2. A 99.9999999999% Discount was applied to 29.2 Quadrillion from Quantum Liquidity Calculator.

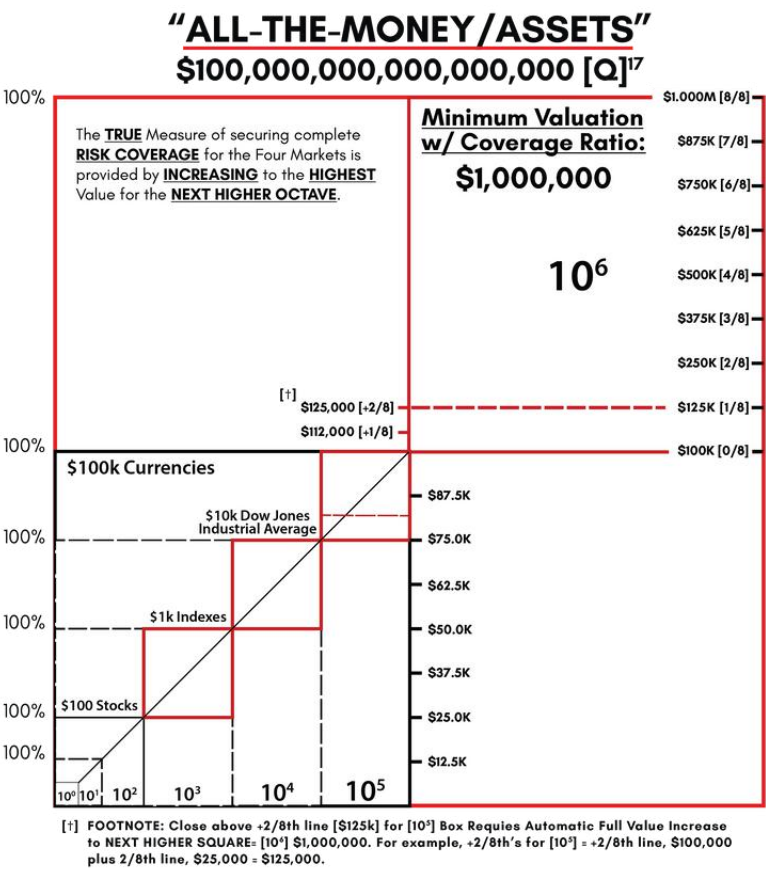
$100Q / 100 BILLION = $1,000,000 XRP PRICE



APPENDIX II

MODEL #6: QUANTUM LIQUIDITY MODEL

Base-10 Pure Math: "Squares-in-TIME" Proof for Calculating Novel Price Discovery for XRP[WRC]." And, Effect on Price into 2062.



JoelKatz: Clue #1

David "JoelKatz" Schwartz
@JoelKatz

It *can't* be dirt cheap. That doesn't make any sense. If XRP costs $1, they'd need a million XRP which would cost $1 million. If XRP cost a million dollars, they'd need one XRP which would, again, cost $1 million. 1/2

4:14 PM · Nov 20, 2017

JoelKatz: Clue #2

David Schwartz
@JoelKatz

Replying to @drea_nub @ADingoAteMyXRP and 5 others

The current minimum transaction fee is 10 drops. A drop is a millionth of an XRP. So even with no change in fees, if XRP somehow hit $10,000, the minimum transaction fee would be ten cents. The minimum fee could be voted down to one drop. 1/2

3:01 pm · 13 Jul 22 · Twitter Web App

XRP Price – $1,000,000,000 by 2062

XRP – ATM in 2062

- Same Formula:
  - All the Money/Minted XRP [10^{11}] = $1,000,000,000 =$$10^9$
  - All the Money = $$10^{20}$ or $100 Quintillion

1,000,000,000	10^9
100,000,000,000	10^11
100,000,000,000,000,000,000	10^20

			1/100th =	1,000,000,000	10^3			
			1B=	1,000,000	1,000		Years to	
							Double	i-Rate
Rule 72	i-rate	Time	10^6	1,000,000	1,000,000	0		
72	10.00%	720		2,000,000	2,000,000	1	3.2	22.50%
72	22.50%	3.2		4,000,000	4,000,000	2	3.2	22.50%
				8,000,000	8,000,000	3	3.2	22.50%
				16,000,000	16,000,000	4	3.2	22.50%
				32,000,000	32,000,000	5	3.2	22.50%
				64,000,000	64,000,000	6	3.2	22.50%
				128,000,000	128,000,000	7	3.2	22.50%
				256,000,000	256,000,000	8	3.2	22.50%
				512,000,000	512,000,000	9	3.2	22.50%
			10^9	1,024,000,000	1,024,000,000	10	3.2	22.50%
						Total	32	

Using Euler's Totient Function:

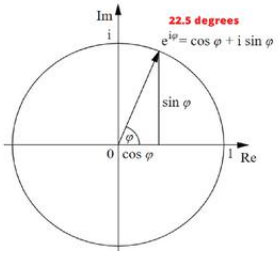
Rule 1: If ρ is a prime, then $\emptyset(\rho) = \rho - 1$.

Rule 2: If $\alpha = \rho^n$ is a prime power then $\emptyset(\rho^n) = \rho^n - \rho^{n-1}$.

Calculate $\emptyset(32)$: $32 = 2^5$ so $\emptyset(32) = 2^5 - 2^4 = 16$.

360 degrees/ 16 =
22.5 degrees = **22.5%**

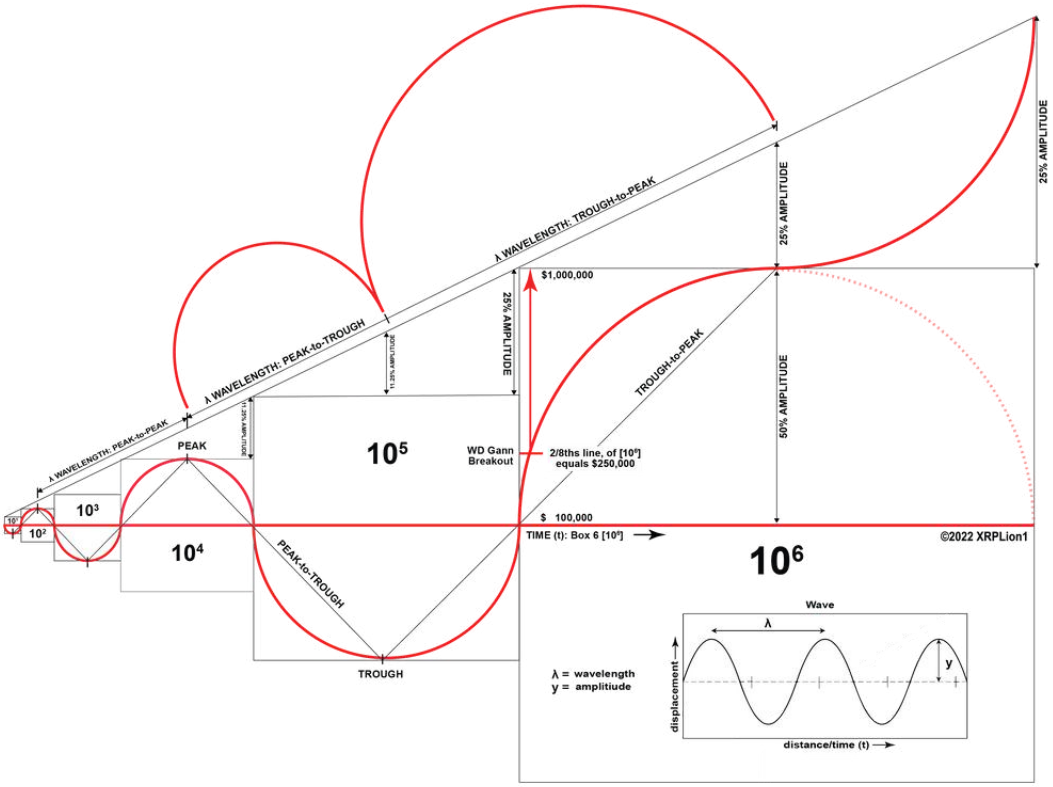
22.5% / 3.2 years =
7.03125% per year.

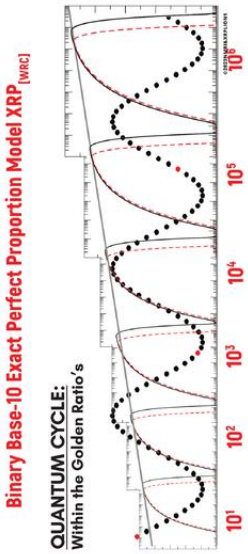


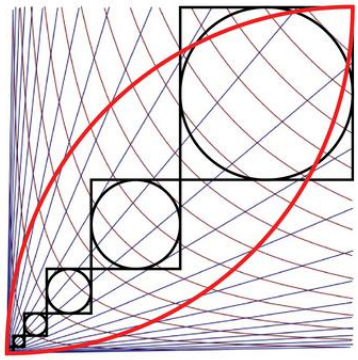
APPENDIX II

MODEL #6: QUANTUM LIQUIDITY MODEL

Base-10 Pure QUANTUM Math: "TUNNEL IN THE SKY."







Hyperbolic coordinates, drawn in red and blue, obey fundementally different mathematical laws. [+] ROCCCHINI/ WIKIPEDIA COMMONS

APPENDIX III

Link to Dropbox folder with Additional Documents