



PAXGOLD

**WHITE PAPER**

V1.0

*last updated September 5, 2019*

**By Charles Cascarilla**

*Chief Executive Officer and Co-Founder of Paxos*

# **TABLE OF CONTENTS**

## **ABSTRACT**

## **INTRODUCTION TO PAX GOLD**

## **A BRIEF HISTORY OF GOLD**

## **THE MODERN-DAY GOLD MARKET**

Investment-Grade Physical Gold

Challenges of Today's Gold Market

Buying and Selling Gold

Past Attempts to Digitize Gold

## **THE DESIGN OF PAX GOLD**

Basics

Key Product Benefits

Using PAX Gold

Technology

Partnerships

Oversight

## **APPENDIX**

About Paxos

About Charles Cascarilla

Related Links

# ABSTRACT

Historically, gold has played a significant role in the global financial system. It is scarce, chemically stable, malleable, beautiful - and universally precious. It has endured as a store of value for thousands of years and remains wildly popular today, with an average of \$112.2 billion-worth of gold trades<sup>1</sup> occurring daily through ETFs, derivatives and physical markets. Gold endures as a preferred safe-haven in crisis, is widely recommended as part of a diversified investment portfolio<sup>2</sup> and continues to be the preferred asset over local currencies for billions of individuals in countries with unstable fiat tender.

At [Paxos](#), we are on a mission to digitize and mobilize the world's assets. We have a vision for a future where assets can move globally, 24/7, in a frictionless economy. We see gold as being an ideal asset for our efforts as it is uniquely desirable, yet unwieldy; its market value is more than \$9 trillion<sup>3</sup> despite being a physically cumbersome and expensive asset to own, store and move.

In this paper, we introduce PAX Gold, a tokenized version of gold that represents real, physical gold. It gives token-holders actual gold ownership in the most secure vaults in the world along with the portability of a digital wallet. We provide some historical context to demonstrate the importance of a modern, digital approach to gold access. Finally, we present details about the infrastructure behind the product, including our structure as a regulated Trust company, the technical design of our smart contracts and other details of our operations.

We have created the easiest way for people to affordably own, hold, trade, lend or move investment-grade, physical vaulted gold - without the worry, cost or inconvenience of physical storage and security. PAX Gold mobilizes and democratizes access to gold globally.

---

<sup>1</sup> "Gold market structure and flows." *World Gold Council*, <https://www.gold.org/about-gold/market-structure-and-flows>. Accessed August 30, 2019.

<sup>2</sup> "The Relevance of Gold as a Strategic Asset." *World Gold Council*, [www.gold.org/goldhub/research/relevance-of-gold-as-a-strategic-asset-2019](http://www.gold.org/goldhub/research/relevance-of-gold-as-a-strategic-asset-2019). Accessed August 30, 2019.

<sup>3</sup> Market value based on total gold mined multiplied by current gold market prices; both figures cited on "How much gold has been mined?" *World Gold Council*, <https://www.gold.org/about-gold/gold-supply/gold-mining/how-much-gold>. Accessed August 30, 2019.

# INTRODUCTION TO PAX GOLD

Today's gold market is defined by a fundamental contradiction: there is currently no investment-grade physical gold product that is both easy to own and easy to trade. Buyers can own large quantities of physical, allocated, investment-grade gold, but it is expensive to store, not easily divisible, cumbersome to move and, therefore, very difficult to trade or leverage. Alternatively, investors can trade wholesale, unallocated gold, gold ETFs or gold futures which are all derivatives or securities, but not ownership of the underlying gold. The product being traded is merely synthetic gold value. In other words, the price of liquidity and fungibility for gold inventors (or any commodity investor) is the lack of ownership in the real, physical asset.

Paxos provides an innovative solution to these fundamental tradeoffs with PAX Gold (PAXG). It is a digitized version of real, physical gold of the highest quality: [London Bullion Market Association](#)-accredited [London Good Delivery](#) gold bars held in the most secure vaults in the world. These investment-grade gold bars are typically about 400 fine troy ounces, each worth over \$600,000 (according to today's market prices in August 2019), and therefore typically only [accessible](#) to the largest of institutions. By tokenizing this gold and putting it on a blockchain, Paxos is making it possible for anyone to own fractions of this highly desirable and secure gold. PAX Gold solves the fundamental challenges of the gold market and democratizes access.

Each PAXG token represents one fine troy ounce of physical gold from a specific serialized gold bar. If customers own enough PAXG to represent an entire gold bar, they can redeem their tokens for a bar of gold. On the other hand, ownership can be divided into units up to 18 decimal points, making it possible to own miniscule amounts of top-quality gold for the first time. PAXG is built as an [Ethereum](#)-based [ERC-20](#) token so that it has portability across the Ethereum blockchain's extensive network of wallets, exchanges, lenders and other platforms.

Paxos is uniquely positioned to offer a gold token as it is the only company to hold all of the following distinctions:

- 1) Paxos Trust Company is a regulated financial institution and qualified custodian.**  
Paxos is a state-chartered trust company regulated by the [New York State Department of Financial Services](#) (NYDFS) and must uphold the highest standards of customer asset protection. Additionally, the [NYDFS has approved and regulates PAXG](#).
- 2) Paxos maintains relationships with large institutions in the gold market** due to Paxos' history providing [post-trade](#) products, including confirmation and affirmation services, to the gold and broader FX and commodity market. As a result, it has been able to secure partnerships with top gold providers, vaults and miners to ensure PAX Gold is only supported by the highest-quality gold and stored in some of the most reliable vaults in the world.
- 3) Paxos has established success in creating asset-backed tokens.**  
Paxos is the issuer and custodian of the asset-backed token [Paxos Standard \(PAX\)](#) as well as the custodian of the asset-backed token [HUSD](#). Paxos understands the intricacies of the technology and business requirements needed to build a product and create a market for this class of offering.

PAX Gold solves the challenges of today's gold market by marrying the benefits of physical gold ownership with the speed and mobility of digital assets.

## A BRIEF HISTORY OF GOLD

Understanding the historical role of gold helps to contextualize how important it has been, and continues to be, to society. Gold had a role in commerce dating back to the emergence of [ancient human civilizations](#). As the technical capacity for the production of goods became more sophisticated, metals became useful in developing monetary systems. Gold in particular was durable, malleable, attractive in color, unlikely to corrode or decay and, above all, scarce. Its universal desirability led to it becoming a store of value across generations and geographies.

The Greeks were the first civilization known to use gold to create coins used in commerce more than 2500 years ago.<sup>4</sup> Until the 20th century, gold was used as the primary medium of exchange and the basis for most monetary systems. For example, in 1717, Great Britain adopted the gold standard<sup>5</sup> and the United States followed with a gold-silver standard in 1792. Under these systems, the value of the local currency was affixed to a set weight of gold and/or silver.

The greatest challenge to the gold standard was the outbreak of World War I, as many major economies shifted away from the system to expand monetary supply and finance the war effort. Monetary turbulence around the world settled after the end of World War II<sup>6</sup> when the Bretton Woods agreement of 1944 established the gold standard-based U.S. Dollar as the underlying currency to which 44 other nations pegged their currencies.<sup>7</sup> This system remained in place until 1971, when the U.S. Dollar was officially taken off the gold standard and rendered a fiat currency:<sup>8</sup> government-issued money without intrinsic value or gold backing.

Since that time, the fiat currency system has evolved and helped facilitate a global economy. But the value of fiat in comparison to gold has diverged widely. In comparison to the value of gold, today's U.S. Dollar has lost 97% of its value. One ounce of gold, worth \$38 in 1971, is today worth more than \$1500. Other fiat currencies have depreciated even further. Gold has become an individual asset class with distinct market dynamics. It's also featured in investor portfolios all over the world as a long-term investment that retains or steadily increases in value.

Despite these evolving dynamics, gold has maintained its desirability and value. More than \$3.5 trillion of the total gold available today is used solely for investment purposes, but the core challenges remain: gold is a heavy and cumbersome asset that is not easily movable nor broadly accessible.

---

<sup>4</sup> "HISTORY OF MONEY." *History World*, [www.historyworld.net/wrldhis/PlainTextHistoriesB.asp?qtrack=pthb&ParagraphID=agz](http://www.historyworld.net/wrldhis/PlainTextHistoriesB.asp?qtrack=pthb&ParagraphID=agz). Accessed August 30, 2019.

<sup>5</sup> Fay, C. R. "2. Newton and The Gold Standard | Cambridge Historical Journal." Cambridge Core, Cambridge University Press, 20 Dec. 2011, [www.cambridge.org/core/journals/cambridge-historical-journal/article/2-newton-and-the-gold-standard/81FFEC83996AB96DD0DE7D0E5D030CDA](http://www.cambridge.org/core/journals/cambridge-historical-journal/article/2-newton-and-the-gold-standard/81FFEC83996AB96DD0DE7D0E5D030CDA). Accessed August 30, 2019.

<sup>6</sup> Smith, Adam. "The German Hyperinflation, 1923." *Paper Money*, by George J.W. Goodman, G.K. Hall, 1981, pp. 57–62.

<sup>7</sup> Ghizoni, Sandra Kollen. "Creation of the Bretton Woods System." *Federal Reserve History*, 22 Nov. 2013, [www.federalreservehistory.org/essays/bretton\\_woods\\_created](http://www.federalreservehistory.org/essays/bretton_woods_created). Accessed August 30, 2019.

<sup>8</sup> "TIMELINE - Gold's History as a Currency Standard." Reuters, Thomson Reuters, 8 Nov. 2010, [in.reuters.com/article/id/INIndia-52748720101108](http://in.reuters.com/article/id/INIndia-52748720101108). Accessed August 30, 2019.

# THE PRESENT-DAY GOLD MARKET

## Investment-Grade Physical Gold

This market analysis is focused on the largest wholesale market for high quality gold: the [Loco London markets](#), standardized by the [London Bullion Market Association](#) (LBMA). The LBMA sets standards for gold bars and the refiners that produce bars for the London market. The most trustworthy gold bars that meet the highest [standards](#) for quality and are produced by accredited refiners are referred to as [London Good Delivery](#) bars. These bars are generally 400 fine troy ounces (t oz) but can range between 350 and 430 t oz, with a minimum fineness of 99.5% gold. Each bar has a set of markings that denote the bar's individual serial number, its refiner, its fineness and the year of manufacture. The LBMA ensures refiners that produce London Good Delivery bars adhere to quality standards and [responsible sourcing](#) practices.

London Good Delivery gold can be purchased in [two forms](#): allocated and unallocated. A customer purchasing allocated gold has ownership over specific gold bars that can be held in a vault or by the customer. A customer purchasing unallocated gold does not have ownership over specific gold bars, but rather has entitlement to some share of a certain quantity of gold.

## Challenges of Today's Gold Market

Most processes related to the buying, selling, transferring, confirming and settling of gold assets between parties remains largely manual, opaque and outdated. The reliance on manual processing is error-prone and impacts the flow and liquidity of the market in a meaningful way. The market is largely restricted to qualified investors; practically meaning that much of the value of gold is not readily available or widely accessible.

Additionally, the size and weight of physical gold is a fundamental challenge to the market. Physical gold bars are difficult to transport and costly to store so investors find it too cumbersome of an asset in which to invest. These challenges exist for both institutional and retail investors of gold bullion. Today's methods for investing overcome some of these inherent physical challenges, but each market venue or instrument has its own unique limitations.

## Buying and Selling Gold

There are a few primary ways to acquire investment-grade gold: over-the-counter (OTC) trading, gold exchange traded funds (ETFs), gold futures or retail gold outlets.

### [Over The Counter Trading \(OTC\)](#)

The majority of investment-grade gold is traded over-the-counter as unallocated gold in spot markets. The London Over the Counter (OTC) Bullion Market is the largest spot market, with approximately 80% global market share. In order to participate in this market, customers (almost exclusively institutions) must have a direct or indirect account with one of the members of the LBMA. Five clearing banks, forming the [London Precious Metals Clearing Limited](#) (LPMCL), manage the clearing and settling of unallocated gold for the entire London Bullion Market. The LPMCL are the banks that maintain gold accounts for settlement of trades with each other and on behalf of third-party counterparties. Once physical gold has been traded and acquired on an unallocated basis, a purchaser can ask for physical delivery (allocated gold) which generally takes several days and incurs an additional fee. The gold is

secured, stored and safeguarded at a precious metals security facility within locked London vaults.

#### *Gold [Exchange-Traded Funds \(ETFs\)](#) and Futures*

Gold ETFs track the underlying value of the gold commodity and are marketable equity securities that can be traded on securities exchanges. ETFs are more accessible to investors than OTC as there are low barriers to entry (brokerage account), requiring only a brokerage account. They can be easily bought and sold like other equity securities, while tracking the price of gold. Gold ETFs are backed by either physical gold or futures contracts.

Futures contract represents the price of a fixed quantity of gold with a predetermined date for future delivery. Nearly 27 million oz of gold futures are traded daily on commodities exchanges, the NY-based [COMEX](#) being the largest in the world. Gold futures are often used as a way to speculate or hedge price risk. Futures are complex financial instruments that provide significant leverage (10-20x) and may be risky for unsophisticated investors that do not have a significant amount of capital at hand. Additionally, futures contracts expire every 3 months, and redeeming for physical gold requires certain minimums and can be difficult and costly.

#### *Retail Gold Outlets*

Gold bars and coins of varying weights can be purchased directly through gold refiners or bullion dealers. At retail, consumers typically purchase fractional amounts of gold, such as an ounce or gram bars or coins. Smaller bars and coins have higher retail markups and their purity is difficult to guarantee. The average retail buyer usually does not have either the capital (\$600,000) or the storage capabilities required to buy large, institutional grade bars nor the ability to manage the complexity of buying London Good Delivery bars directly.

#### Past Attempts to Digitize Gold

There have been multiple attempts to create a digital representation of gold, both blockchain and non-blockchain based, but none have achieved significant market scale. Many are backed by gold of unknown origin (i.e. not London Good Delivery bars) or are not even necessarily backed by physical gold. Another major drawback is the way in which storage fees are treated. Some stipulate that any exchange or wallet that holds users tokens must remove a certain amount on a regular basis to account for custody fees. Others make the token depreciate in value to account for fees. Neither are optimal, and therefore typical crypto asset exchange venues have been reluctant to list these tokens for trading.

# THE DESIGN OF PAX GOLD

## Basics

PAX Gold is a digital asset where one token represents one fine troy ounce of a London Good Delivery gold bar, stored in professional vaults in London. Anyone who owns PAX Gold owns the underlying gold which is held under the custody of Paxos Trust Company. The value of PAX Gold therefore also tracks with the real-time market price of gold.

PAX Gold is built as an [Ethereum-based](#) token following the [ERC-20](#) protocol, making it compatible with all Ethereum wallets that accept ERC-20 tokens. All transactions operate according to the rules of the smart contract on the Ethereum blockchain. Because of this smart contract, transactions eliminate human error and the system operates only as programmed.

Like any Ethereum-based token, PAX Gold is available 24/7 to facilitate settlement against various assets. Unlike traditional gold, which is only available to settle trades during banking business hours, PAX Gold can move anywhere, anytime.

## Key Product Benefits

- **Allocated** - PAX Gold is backed by physical gold and is allocated down to the serial number of each individual bar. Because PAX Gold operates on the Ethereum blockchain, it is also instantly transferable globally. The allocated ownership moves with the token transfer, which makes trading of allocated gold easier and faster than ever.
- **Redeemable** - PAX Gold is redeemable in several forms, unlike any gold products available today. Customers can convert their PAX Gold into physical allocated gold, unallocated gold entitlements or fiat. Through Paxos.com, customers can redeem full-sized London Good Delivery gold bars. Through a network of gold retailers, they can convert smaller amounts to physical gold all over the world.
- **Programmable** - Due to the digital and programmable nature of the smart contract, PAX Gold is easy to convert, trade or use in many other ways. Programmable gold creates significant new functionality in the trading world.
- **Regulated** - PAX Gold is issued by Paxos Trust Company, a financial institution regulated by the NYDFS. The NYDFS also regulates Paxos' individual products, ensuring greater customer protections and higher standards of operation. The NYDFS has specifically approved PAX Gold as an authorized and regulated Paxos product.
- **Available to Anyone** - Given that PAX Gold has a very low investment minimum (0.01 PAXG or ~\$15), fractional bar ownership is now possible for retail customers unlike ever before. Any individual or institution can buy PAX Gold.
- **Low Fees** - PAX Gold has low fees and is a significantly more attractive vehicle for investment as compared to other gold products. There are no storage fees and low creation/destruction fees that are tiered based on volume. For transactions that occur on-chain (transferred via Ethereum), there is a low Paxos transaction fee (0.02%) as well as the usual Ethereum gas fees (typically a few cents).
- **Bankruptcy Remote** - Since PAX Gold is issued by a state-chartered trust company, customer assets are kept separately from the company's assets. All gold bars represented by PAX Gold tokens are custodied by Paxos for PAX Gold holders and do not become a part of the company's estate in the event of the company's insolvency.

- **Decentralized** - By operating on an open blockchain, PAX Gold maintains the inherent nature of gold. No single entity or group controls access to the asset or has the ability to control the entire market.
- **Easy to Trade** - On Paxos' itBit and other exchanges, PAXG will trade against fiat and digital assets.

#### Using PAX Gold

PAXG tokens are created and destroyed by Paxos as needed. Paxos account holders can convert PAX Gold into U.S. Dollars or unallocated gold in a Loco London unallocated gold account, and vice versa. If customers hold more than 430 oz in PAX Gold, they can redeem their tokens for a physical gold bar. Paxos charges fees for creating and destroying tokens according to the fee schedule tiered by volume, posted on [www.paxos.com](http://www.paxos.com). The purchase minimum on the Paxos platform is 0.01 PAXG (plus a 0.02 minimum PAXG creation fee).

At any time, PAX Gold holders can go to the Paxos website to retrieve the serial number and physical characteristics of the vaulted gold they own. The only input required is an Ethereum address holding PAX Gold tokens.

PAX Gold is a compelling asset for investors and active traders alike, whether retail or institutional, as well as market participants both inside and outside of the crypto-asset ecosystem.

[Bitcoin](#) enthusiasts are also often attracted to gold for many of their shared properties: they are decentralized, "outside" assets that are no one else's liability and are not tied to any particular government; they are both scarce; they both transcend borders and are universally recognized. We expect that many who hold and trade Bitcoin are also likely to be interested in holding and trading gold, and that PAX Gold will be an easy introduction to a new asset class within a familiar ecosystem. PAX Gold will be listed on crypto-asset exchanges globally and will trade directly against bitcoin and other crypto-assets.

For the many people globally who are interested in holding physical gold as an investment, PAX Gold is an attractive option since it charges no storage fees, is allocated to high quality gold and is highly accessible. People who hold gold may be interested in moving their holdings to PAX Gold.

Finally, we expect the lending and borrowing against gold to be a major use case. PAX Gold is likely to be adopted by crypto lending platforms, allowing users to potentially earn interest on their PAX Gold. This is likely to be especially attractive to those who already hold gold.

## Technology

PAX Gold is an ERC-20 token on the Ethereum blockchain issued by Paxos. An ERC-20 token is an Ethereum smart contract that follows a standard protocol for representing custom tokens on the blockchain. Specifically, the contract must declare basic token characteristics (name, symbol, decimal precision), track the total number of tokens, track a token balance for each Ethereum address, and permit address owners to transfer portions of their balance to other addresses.

Because PAX Gold follows the standard ERC-20 protocol, many Ethereum-supporting exchanges and wallet applications already have built-in support for viewing and transferring PAX Gold.

The benefits of building on Ethereum and ERC-20 include:

- The security and availability guarantees of one of the largest global blockchain networks (Ethereum) and its proof-of-work model;
- A simple and familiar smart-contract pattern;
- Publicly verifiable token supply, account balances, and on-chain procedures;
- Ability to integrate with other smart contract applications like distributed exchanges, distributed apps, and swap contracts;
- Broad adoption by crypto stakeholders such as exchanges, crypto asset organizations, institutional investors and retail users;
- Reduced dependency on any single authority due to decentralization; and
- Access to a broad market that includes all individuals with an internet connection.

PAX Gold is only available on Ethereum today, but it may also be launched on other chains in the future if there are compelling benefits. The Ethereum contract address is 0x45804880De22913dAFE09f4980848ECE6EcbAf78.

All London Good Delivery gold bars are identified by serial number and weight; ownership of PAX Gold is represented as fractional ownership of the corresponding gold bars. Since customers are buying and selling fractions of specifically allocated gold bars through their buying and selling of PAX Gold tokens, the odd result might be that a particular customer could hold fractions of several different gold bars. Paxos will make an effort to allocate PAX Gold tokens to the fewest number of gold bars possible per unique Ethereum address. This allocation may happen on a daily basis. In the event customers are not allocated ownership of a full gold bar, customers will own a pro rata share of that bar as determined by PAX Gold token holdings. Paxos may also reallocate PAX Gold tokens to different bars from time to time in order to take into account transfers of tokens, new exchanges of tokens, conversions and other PAX Gold transactional activity.

PAX Gold holders can always go to [paxos.com](https://paxos.com) to see the serial number(s), purity and weighting of each bar(s) to which their tokens are allocated at any given time.

Some distinctive features of the PAX Gold smart contract are included here. Additional details can be found in the [smart contract code repository](#).

### *Fees*

Paxos charges a set fee rate for all on-chain transfers of PAX Gold. The fee controller has the ability to set the fee recipient and the fee rate (measured in 1/100th of a basis point). Paxos will never change the fee rate without prior notice as we take transparency very seriously. The fee rate will likely only change rarely.

### *Asset Protection Role*

As required by our regulators, we have included a role for regulatory compliance to freeze or seize the assets of a criminal party if, and only if, required to do so by law, including by court order or other legal process.

The AssetProtectionRole can freeze and unfreeze the PAX Gold balance of any address on chain. It can also wipe the balance of an address after it is frozen to allow the appropriate authorities to seize the backing assets.

Paxos will not execute these functions on its own accord, will utilize it extremely rarely (if at all) and only under extenuating circumstances. The list of frozen addresses is available in `isFrozen(address who)`.

### *BetaDelegatedTransfer*

This feature allows gas fees for on-chain transactions to be covered by a specified party (for example, if a specific platform wants to cover gas fees for all PAXG transactions for their customers). The implemented code is a variation of EIP-865. The public functions `betaDelegatedTransfer` and `betaDelegatedTransferBatch` allow an approved party to transfer PAX Gold on the end user's behalf given a signed message from said user. Because EIP-865 is not finalized, all methods related to delegated transfers are prefixed by Beta. Only approved parties are allowed to transfer PAX Gold on a user's behalf because of potential attacks associated with signing messages. To mitigate some attacks, EIP-712 is implemented, which provides a structured message to be displayed for verification when signing.

```
function betaDelegatedTransfer(
  bytes sig, address to, uint256 value, uint256 serviceFee, uint256 seq, uint256 deadline
) public returns (bool)
```

### Partnerships

With respect to sourcing of physical gold, streaming of gold pricing, and swapping of PAX Gold tokens for allocated or unallocated gold (and vice versa), Paxos will leverage the services of reputable institutions in the physical gold trade.

Paxos has opened accounts with [Brink's](#) bullion vaults in London, one of the six bullion vaults for London gold, which will maintain the vault or vaults for storage of allocated gold corresponding to PAX Gold tokens. As a fiduciary and qualified custodian, Paxos custodies gold for PAX Gold token holders in a segregated account at the vault. For sourcing of gold, Paxos also maintains an account with [INTL FCStone](#), a well-established gold-trading and wholesale institution, that sells gold to Paxos and buys gold from Paxos as needed for token issuance and redemption.

Customers can also purchase or redeem PAX Gold at participating gold retail locations or websites, such as [Bullion Exchanges](#).

We expect PAX Gold to be available on partner exchanges, wallets, lending platforms and more in the near future.

### Oversight

Paxos has always sought to be highly transparent with robust third-party oversight. With this foundation, it has been a leader amongst blockchain-related companies in regulatory compliance. As the first regulated trust company to trade digital assets, Paxos continues to work closely with regulators and other supervisory authorities in the existing financial services ecosystem.

#### *Regulatory Approval*

In 2015, the NYDFS granted Paxos its Limited Purpose Trust charter and it continues to regulate the company as a Trust organized under New York banking law. This includes ensuring consumer protection through maintenance of substantial capital reserve requirements, frequent regulatory examinations and monitoring of our operating procedures. Not only does the NYDFS regulate Paxos at the company level, but it also regulates Paxos' suite of products and services.

In 2018, the USD-backed PAX Standard token was granted regulatory approval by the NYDFS and continues to be overseen by the regulator. In July 2019, the NYDFS granted regulatory approval for the PAX Gold token. The approval process included an in-depth vetting of Paxos' internal token-specific operational and compliance workflows and its consumer protection measures. In addition, Paxos has secured the advice of legal counsel that PAX Gold should not be considered a security or futures contract under U.S. securities and commodities laws.

#### *Financial Audit*

Paxos works with a third-party, independent, trusted, nationally top-ranking public accounting firm to review and attest on a monthly basis that PAX Gold tokens correspond 1:1 with ounces of London Good Delivery gold held in vaults by verified third-party partners.

#### *Smart Contract Audit*

The PAX Gold smart contract is based upon the Paxos Standard smart contract which was audited by three third-party specialists ([Nomic Labs](#), [ChainSecurity](#), and [Trail of Bits](#)) in September-October 2018. In January 2019, Trail of Bits performed an additional audit for a potential upgrade to the PAX USD smart contract.

Once the PAX Gold contract was developed, Paxos engaged two third-party specialists: ChainSecurity and [CertiK](#). ChainSecurity, a leading research lab in blockchain security, audited the new code differentiating PAX Gold from PAX USD and proposed amendments which Paxos implemented. CertiK, a technology-led blockchain security company founded by Computer Science professors from Yale University and Columbia University, audited the entire PAX Gold smart contract and performed formal verification using its proprietary technology that applies rigorous and complete mathematical reasoning against code. CertiK proposed amendments regarding code organization, coding style and best practices around

signature verification. Paxos incorporated these suggestions into the PAX Gold smart contract.

*Transaction Monitoring and Surveillance*

Paxos utilizes third party analytical tools from [ComplyAdvantage](#) and [Chainalysis](#) to monitor transactions on its platform and on the blockchain. Monitoring is conducted to detect and investigate potential instances of fraud and money laundering. Because PAX Gold is built on the Ethereum blockchain, it is also possible and easy for anyone to review the entire history of transactions on the chain.

## APPENDIX

### About Paxos

Paxos is a regulated financial institution on a mission to create a global, frictionless economy. By building infrastructure to enable the movement between physical and digital assets, Paxos is creating a future where all assets—from money to commodities to securities—are digitized and can move instantaneously, 24/7.

Today, as the first regulated Trust company for digital assets, Paxos technology makes it possible to custody, tokenize, trade and settle assets. Our institutional-grade stablecoin, PAX Standard (PAX), is the world's most popular alternative stablecoin, and our digital asset exchange, itBit, is one of the leading Bitcoin trading platforms.

With offices in New York, London and Singapore, Paxos takes a global view of modernizing the financial system. Learn more at [www.paxos.com](http://www.paxos.com).

### About Charles Cascarilla

Charles Cascarilla is the CEO and co-founder of Paxos. With over 20 years of experience in financial services, Charles has a unique perspective on integrating blockchain technology with traditional systems.

Before Paxos, Charles co-founded institutional asset management complex Cedar Hill Capital Partners in 2005 and its blockchain-focused venture capital subsidiary, Liberty City Ventures (LCV), in 2012. Through LCV, Chad has invested in many promising blockchain companies including Abra, BitGo, BRD, Earn.com and more. He was a founding member of CoinCenter and the Association for Digital Asset Markets.

Earlier in his career, Charles was a portfolio manager at Claiborne Capital and an analyst at both Bank of America Securities and Goldman Sachs. He serves on the board of several charities and private companies including Project ALS and The Centurion Foundation.

Charles holds a B.B.A. in Finance from the University of Notre Dame and is a CFA charterholder.

### Related Links

- COMEX Gold Futures - <https://www.cmegroup.com/trading/why-futures/welcome-to-comex-gold-futures.html>
- Ethereum Foundation - <https://www.ethereum.org/>
- London Bullion Metals Association - <http://www.lbma.org.uk/home>
- SPDR Gold Shares - <https://www.spdrgoldshares.com/>
- World Gold Council - <https://www.gold.org/>