

Accounting for and auditing digital assets

50th World Continuous Auditing & Research Symposium
November 6, 2020



The better the question. The better the answer.
The better the world works.



Agenda

1. Blockchain ecosystem
2. Enterprise blockchain
3. Digital assets
4. Auditing digital assets
5. Accounting for cryptocurrencies
6. Accounting for stablecoins



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The basics

Blockchain ecosystem

Summary of how we view the blockchain ecosystem

Pillar 1	Pillar 2	Pillar 3	Pillar 4	Pillar 5
Entities that hold and/or transact using digital assets	Entities that hold and/or facilitate trading of digital assets on behalf of customers	Entities that create digital assets for sale or distribution to third parties	Entities that use blockchain-based business models	Traditional entities that operate or participate in blockchain processes and/or consortiums
Examples include investment funds and high-frequency trading companies.	Examples include digital asset exchanges, broker-dealers and custodians.	Examples include entities that sell or distribute stablecoins or other tokens to third parties via initial coin offerings or other means.	Examples include miners, payment service providers, platform providers and digital wallet providers.	These entities leverage blockchain to process and/or record transactions relevant to their financial reporting.

We use these five 'pillars' to organize our analysis of the applications of blockchain and their related risks.

Enterprise blockchain use cases (looking forward)

Industry use cases

Retail

- ▶ **Supply chain** – tracking movement of goods throughout the supply chain cycle
- ▶ **Inventory** – provides real-time validation of ownership and inventory levels
- ▶ **Warranty** – provides history of origin of all components to determine systemic issues

Real estate

- ▶ **Title transfer:** movement of land deeds
- ▶ **Record of ownership and fractional ownership:** provides distribution platform and record of ownership

Banking

- ▶ **Payment clearing:** bank-to-bank payments can be completed securely in a fraction of the time
- ▶ **Peer-to-peer payments:** can facilitate low-cost payments between two parties
 - ▶ e.g., \$600m of Litecoin was sent between two wallets for \$7 fee

Energy

- ▶ Verification of green energy certificates tokenized on a blockchain

Insurance

- ▶ **Underwriting:** adds transparency to premium assessment, enables semi-automatic pricing
- ▶ **Claims management:** can code smart contracts for simple claims, so that claim funds can be transmitted automatically if certain conditions are met

Manufacturing

- ▶ **Logistics** – real-time tracking and payment for tokenized raw materials
- ▶ **Equipment management** – potential for shared asset ownership for machinery or equipment
- ▶ **Intercompany transactions** – use of smart contracts allows for automated invoicing and settlement of transactions

Digital assets

What are digital assets?

- Digital assets include any asset (tangible or intangible) that can be digitally represented on a blockchain, including cryptocurrencies (including stablecoins), utility tokens, security tokens and digital representations of any “real world asset”, including raw materials, consumer and industrial products, real estate or financial instruments.

In what ways do companies engage in digital asset activities?

- Some entities simply hold or transact in cryptocurrencies, others might function as cryptocurrency exchanges or custodians, some might create or issue digital assets for sale or distribution to third parties, while others might participate in the blockchain network, like miners, platform providers or digital wallet providers.

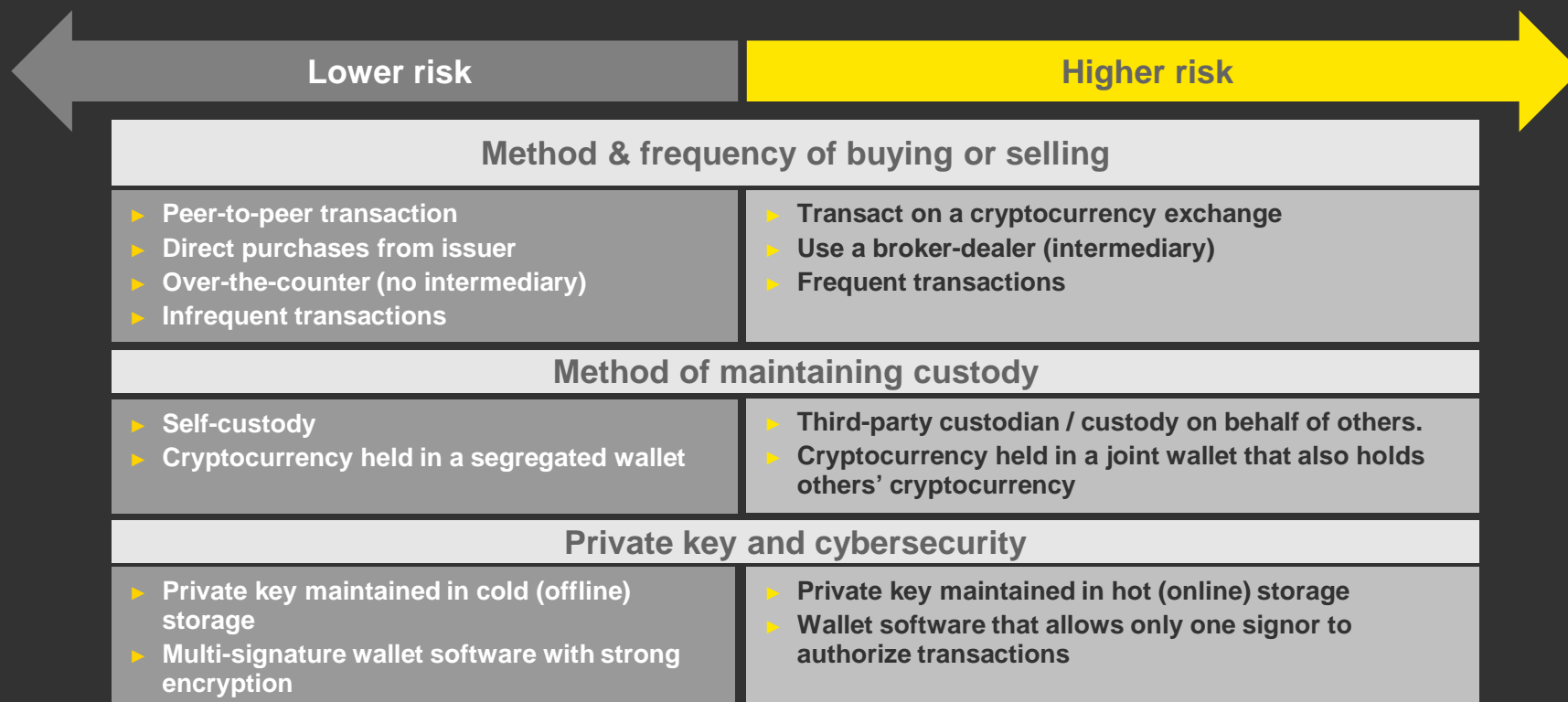
Our focus for today:

- In order to focus on key audit considerations and to demonstrate ways of gathering relevant and reliable audit evidence, our examples today will focus on holding and transacting in cryptocurrencies.

Auditing digital assets

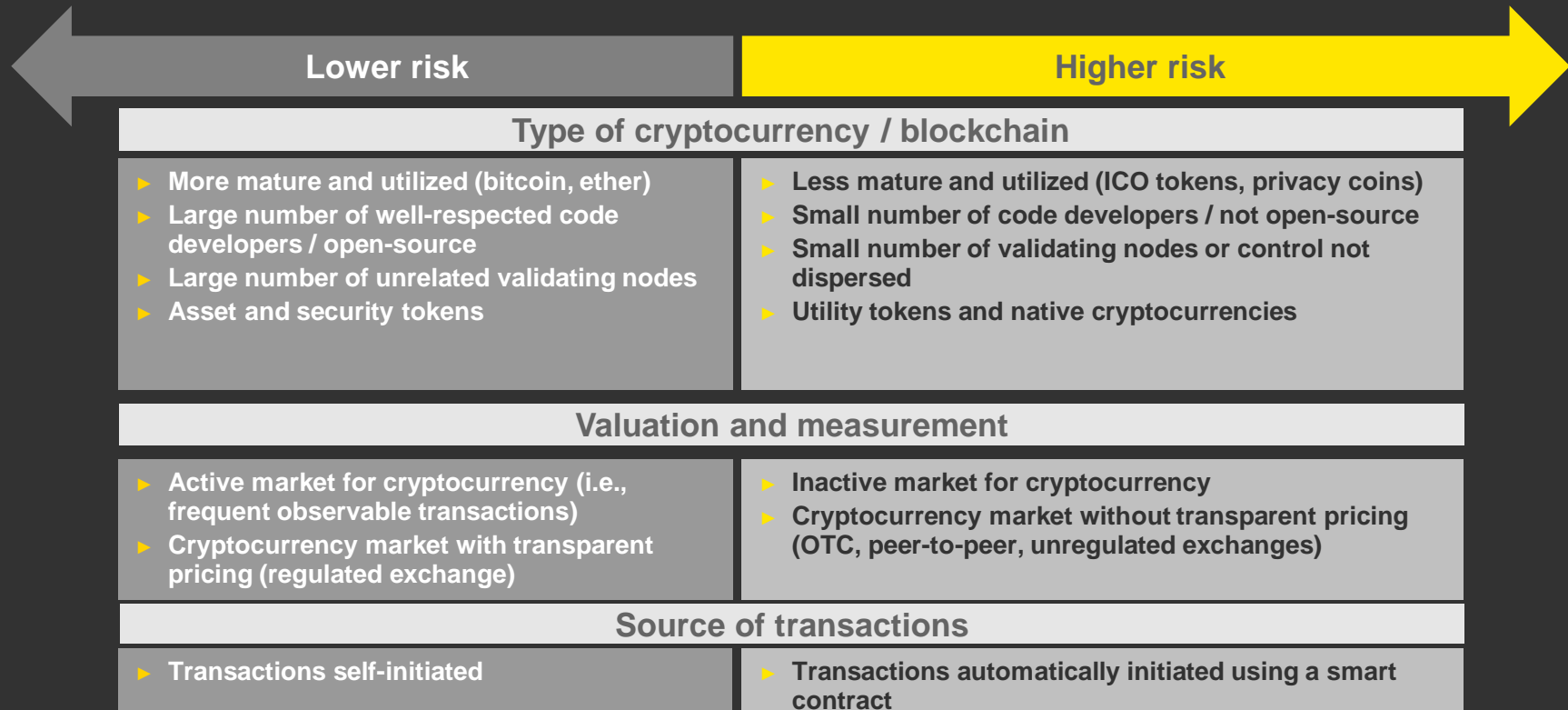
Risk spectrum

Entities that hold or transact in cryptocurrencies (Pillar 1)



Risk spectrum (cont'd)

Entities that hold or transact in cryptocurrencies (Pillar 1)



Identifying incremental audit risks

Risks related to Company's books and records

- All transactions are not recorded (Completeness)
- Cryptocurrency assets recorded do not exist (Existence)
- Transactions recorded did not occur (Existence)
- Entity may not own cryptocurrency (Rights and Obligations)

Risks related to the blockchain itself

- All transactions are not recorded on the blockchain (Completeness)
- Blockchains may contain inaccurate information (Completeness)
- Theft, loss, destruction or misappropriation of cryptocurrency (Existence)

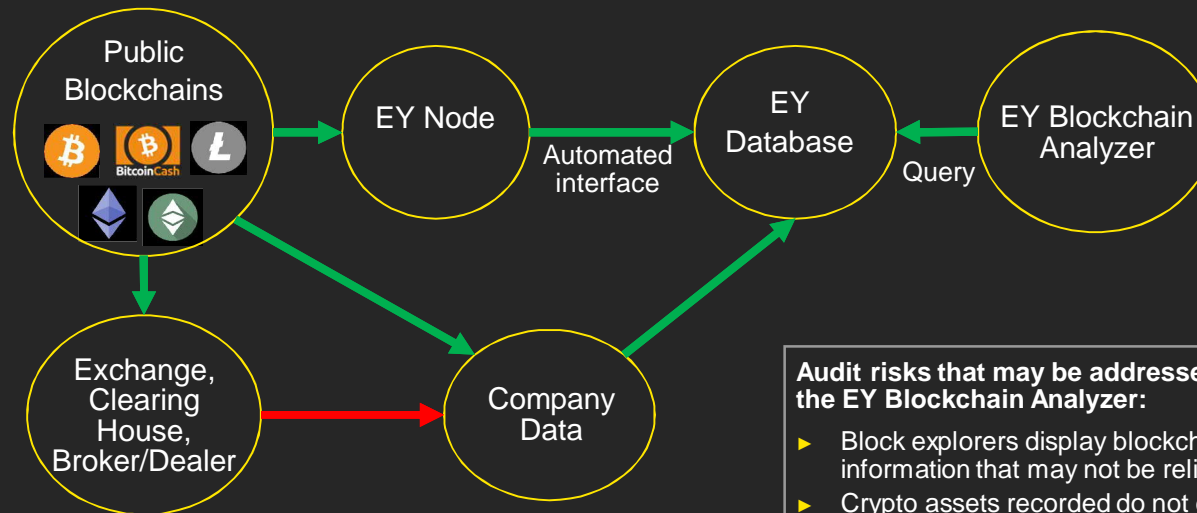
Risks related to the extraction of data using block explorers

- Block explorers that display blockchain information may not be reliable (Completeness / Existence)

EY Blockchain Analyzer

The EY Blockchain Analyzer obtains public blockchain data from an EY node and:

- ▶ Assists audit teams with comparing an entity's cryptocurrency balances and transaction details per the entity's books and records to the public blockchain
- ▶ Provides enhanced analyses compared to third-party block explorer tools by allowing audit teams to examine 100% of an entity's cryptocurrency transactions and readily identify unusual items or trends



Audit risks that may be addressed using the EY Blockchain Analyzer:

- ▶ Block explorers display blockchain information that may not be reliable (C, E)
- ▶ Crypto assets recorded do not exist in the blockchain (E)
- ▶ All transactions in a particular digital wallet are not recorded (C)
- ▶ Transactions recorded did not occur (O)

Blockchain evaluations

EY has performed procedures to support the ability of audit teams to use transaction-related information from certain public blockchains as audit evidence.

Each public blockchain evaluation includes:

- ▶ A description of how transactions are initiated, recorded, processed and reported in the blockchain
- ▶ Identified risks that, if not addressed by controls within the blockchain, could affect the reliability of the transaction-related information in the blockchain
- ▶ Identified controls within the blockchain that are designed to mitigate the identified risks
- ▶ Procedures to evaluate whether the identified controls have been implemented within the blockchain

- ▶ We have used EY's blockchain and cryptography resources to help evaluate these public blockchains
- ▶ It is the responsibility of each audit team to read the evaluation for each relevant public blockchain and determine the degree to which information from the blockchain contributes to the overall body of evidence for an assertion.
- ▶ These evaluations are periodically updated.

Accounting for cryptocurrencies

Cryptocurrencies

Accounting for the classification



Cryptocurrencies

Determining the ownership

- When cryptocurrencies are held indirectly through a third party (e.g., a digital wallet service provider), entities must determine the ownership of the cryptocurrencies
 - Accounting may be different depending on whether the entity owns the cryptocurrencies

Who is the owner of the cryptocurrencies?

Asset = cryptocurrency
(intangible asset under ASC
350)

Asset = a deposit of
cryptocurrency at the third
party (may be viewed as a
hybrid instrument)

Cryptocurrencies

ASC 350 Intangible assets

- Cryptocurrencies generally meet the definition of indefinite-lived intangible assets under ASC 350
 - Measured at cost, less impairment (if any)
 - Test for impairment annually and more frequently if “more likely than not” asset is impaired

*While
cryptocurrencies
are held ...*

Increases in value
are not recognized

Decreases in value
are recognized

Cryptocurrencies

Fair value measurement – impairment testing

Identify the principal market



Measurement based on whether principal market is considered an:

Active market

(Price x Quantity)

Inactive market

Prioritize observable inputs
Assess relevance and
reliability of prices observed

Cryptocurrencies

Other matters

"Investment companies" (ASC 946)

Subsequently measure cryptocurrency investments at fair value

Hard forks and airdrops

Determining the timing of recognition for newly granted cryptocurrencies

Mining activities

Accounting for transaction fees and "block rewards" received

- Regulatory and accounting environment around cryptocurrencies continues to evolve
- Entities should provide disclosures that help investors understand the effect of cryptocurrency activities on their financial conditions and performance

Accounting for stablecoins

Stablecoins

Accounting classification

- Stablecoins generally link value to an asset or a pool of assets to minimize price volatility.
- They may have different underlying rights and obligations depending on, for example:
 - The types of collateral (e.g., fiat currency, commodity, another crypto asset)
 - The timing of redemption (e.g., any time, a specified time)
 - The redemption terms (e.g., a fee upon redemption)
- The accounting treatment for a stablecoin will ultimately be driven by the specific facts and circumstances, including terms, form, underlying rights and obligations of the stablecoin.

Stablecoins

Accounting classification

Considerations
for
classification

- ▶ What is the purpose of the stablecoin and how does it achieve that purpose?
- ▶ What are the rules on the stability mechanism?
- ▶ Who is the issuing entity or who comprises the group of entities pooling resources to support the stablecoin?
- ▶ What are the rights of the holder and the obligations of the issuing entity?
- ▶ Can the stablecoin be traded with parties other than the issuing entity?
- ▶ What is the type of asset or collateral backing the stablecoin (e.g., fiat currency, commodity, crypto-asset)?
- ▶ How is the collateral verified and perfected? What is the level of collateral (i.e., is it partially, fully or over collateralized)?
- ▶ If it is redeemable, how and how often can it be redeemed? Are there significant barriers to redemption (e.g., fees)?
- ▶ Does the stablecoin represent an ownership interest in an entity?
- ▶ Do any credit or liquidity concerns exist?

Stablecoins

Accounting classification

Example:

A stablecoin issued by an entity (not a bank):

- Serves as a means of payment and store of value
- Has a stated value of USD1
- Is collateralized on a 1:1 basis and held in a segregated bank account by the issuing entity
- Is redeemable for USD1 at any time with no penalty
- Can be traded on certain crypto-asset exchanges

Stablecoins

Accounting classification

Financial instrument

- ▶ Definition: a financial instrument is cash, an ownership interest in an entity or a contract that imposes an obligation to deliver or a right to receive cash or another financial instrument.
- ▶ Met: stablecoins represent a contractual obligation by the issuer to deliver cash and a right by the holder to receive cash.

Cash

- ▶ Definition: consistent with common usage, cash includes currency, demand deposits and other accounts that have the general characteristics of demand deposits with financial institutions.
- ▶ Not met: stablecoins are not accepted as legal tender or backed by sovereign governments and generally do not represent demand deposits.

Cash equivalents

- ▶ Definition: cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and represent insignificant risk of changes in value.
- ▶ Not met: stablecoins are largely untested; given their nascent nature, they pose legal, regulatory, oversight and operational risks that are not typically presented in highly liquid investments.

Q&A session

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