English law and digital securities

UKJT consultation event on 21 November 2022: Oxera analysis– prepared for LawtechUK

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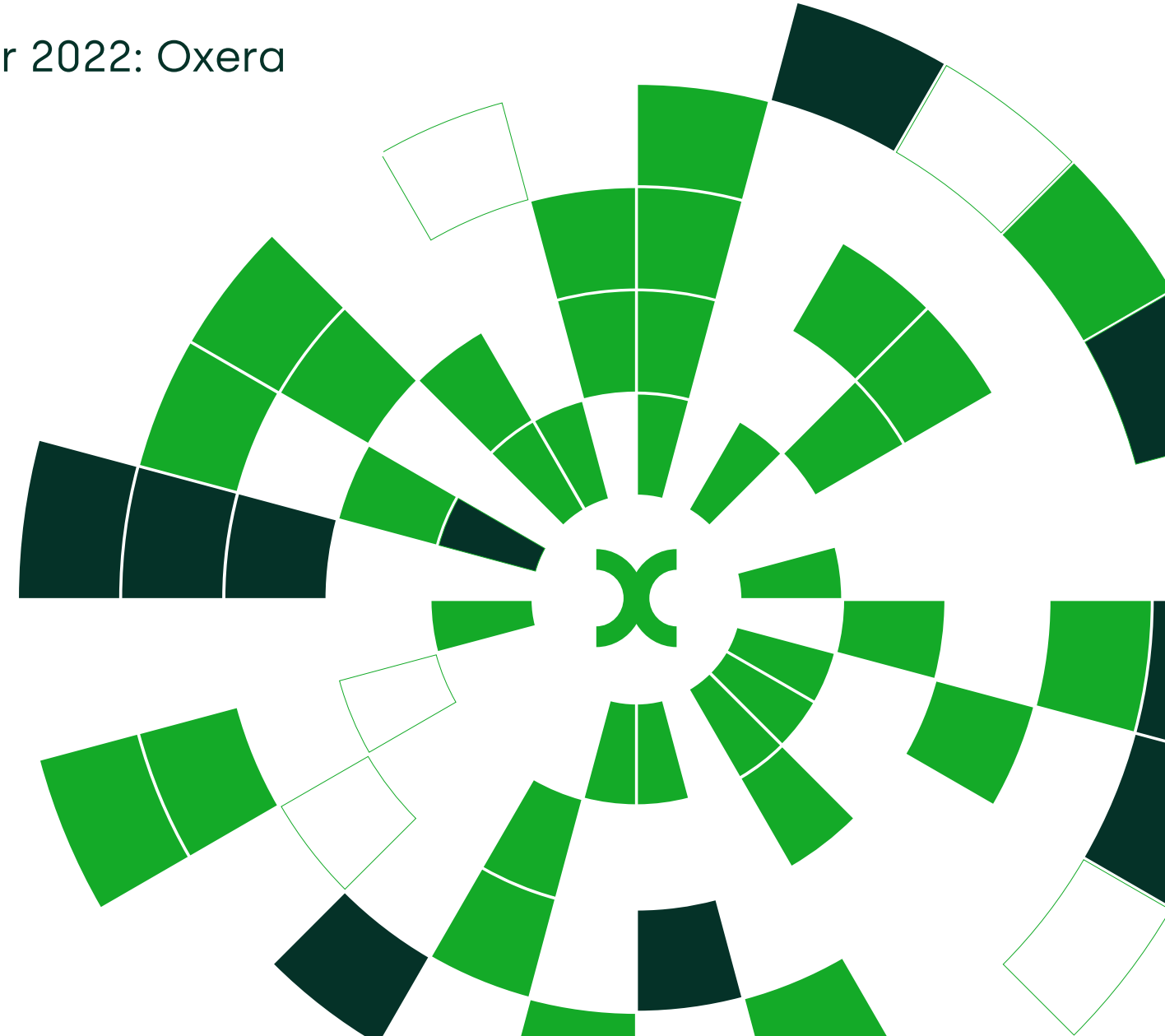


Our approach

Oxera were commissioned by LawtechUK to undertake an economic analysis of digital securities and English law, particularly of the value associated with an English legal system that is recognised as being supportive of digital securities.

This research built on Oxera's previous work assessing the value of English law[1], as well as our extensive experience working across various areas of capital markets (including primary markets, trading and post-trading)[2].

Our research regarding English law and digital securities was informed by:

- a review of the academic and policy literature regarding digital securities
- a review of case studies of current experiments and commercial applications of digital securities
- interviews with market practitioners covering the market landscape for digital securities, potential barriers to further development and the benefits of an English legal system that is supportive of digital securities

These slides can be read in conjunction with two short videos, which provide a brief explanation of the relationship between digital securities and English law. The two videos are available at: https://www.youtube.com/@lawtechuk2934

[1] Oxera (2021), 'Economic value of English law', report prepared for LegalUK. [2] See, for example: Oxera (2020), 'Primary and secondary equity markets in the EU', report prepared for DG FISMA, November; Oxera (2011), 'Monitoring prices, costs and volumes of trading and post-trading services', report prepared for DG Internal Market and Services.

Key findings (I)

The law creates value as a critical piece of business infrastructure

- the law is a critical piece of business infrastructure that enables and encourages the growth of economic value through an increase in transactions
- English law has historically been seen as an attractive legal system in many industries and sectors, in part due to its flexibility, predictability, and constant evolution to address new and complex market issues.
- English law is the international standard for contracts in many capital markets. Many of these (e.g. Eurobonds and OTC derivatives) are internationally mobile – parties can choose the law that governs the contract.

Current applications of digital securities are a combination of small-scale proof-of-concept experiments and some successful commercial applications

- digital securities is an umbrella term for the use of distributed ledger and blockchain technology to record information relating to the ownership and transfer of traditional assets such as shares and bonds.
- market participants highlighted that, depending on the specific use case and asset class, DLT has the potential to bring a range of benefits to capital markets, such as simplifying information sharing, automating processes, reducing reconciliation across the chain of custody, and facilitating faster settlement times.
- while participants noted that the majority of applications of digital securities over the past 5 years have been small-scale proof of concept experiments, it was also highlighted that successful commercial applications are on the rise and could scale up in the coming years.

Key findings (II)

The future for digital securities

- widespread adoption of digital securities relies on network effects, meaning that the full benefits from their use will only be realized fully once significant volumes migrate towards using the new technology.
- markets characterised by network effects are prone to 'tipping' – so even though current levels of digital securities activity (e.g. digital bond issuance) are small relative to total market size, this could change relatively quickly.
- feedback from our interviews highlighted some potential barriers to further adoption of digital securities, in particular the need for regulatory and legal clarity.

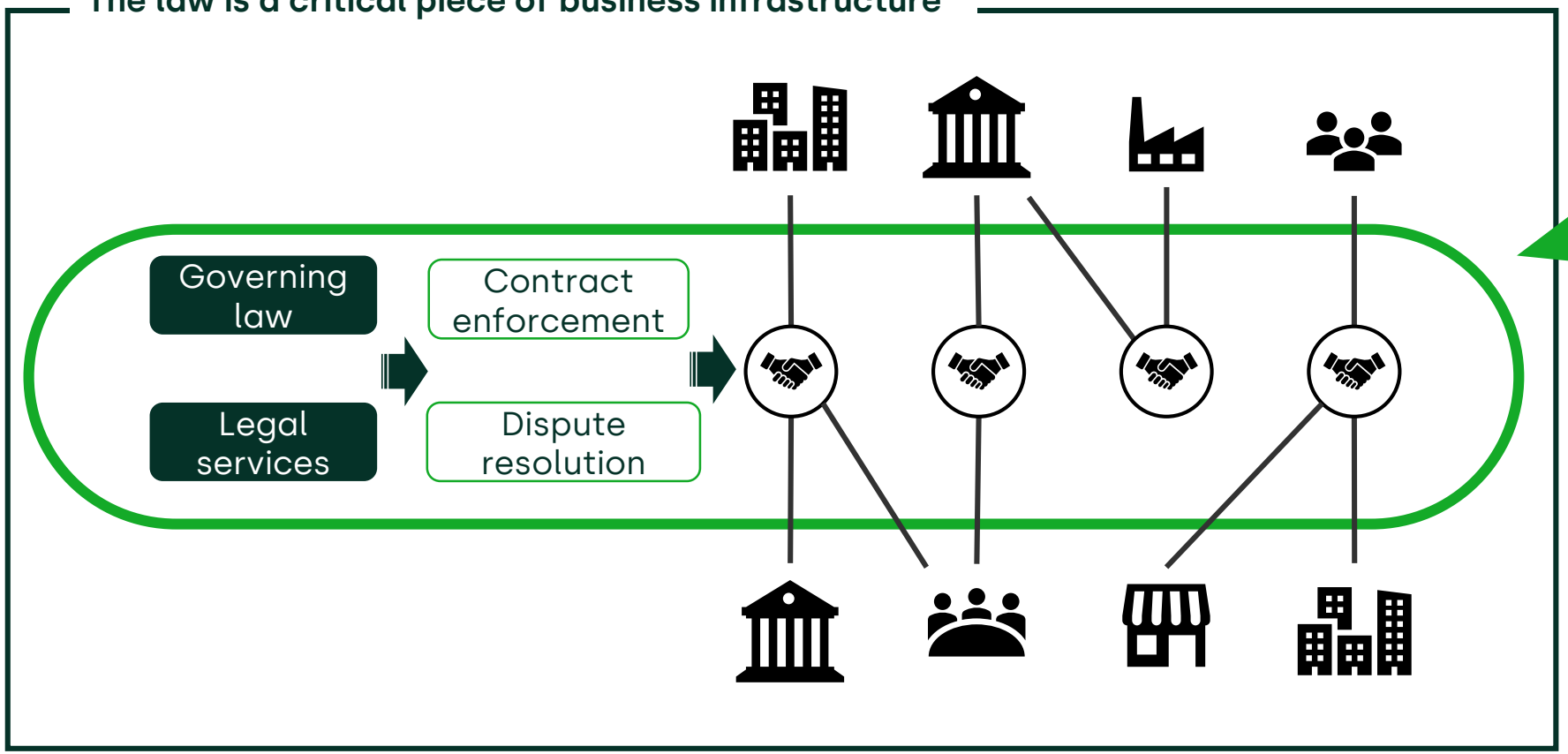
An English legal system that is supportive of digital securities is likely to create value for the UK economy and for the wider UK legal system

- if English law is recognised as supportive of digital securities, it is well-placed to become a global standard in internationally mobile digitised markets. If not, another legal system is likely to take on that role.
- for domestic securities markets (that cannot choose an alternative legal system), a supportive English law would enable UK firms to implement the use of DLT more widely than would otherwise be the case. While the strength of the business case for the individual applications is not yet fully established, this is likely to be an overall benefit for UK firms' ability to access capital markets.
- for internationally mobile securities markets, a supportive English law will generate additional activity in the legal and professional services ecosystem that is based in the UK (and therefore familiar with English Law).
- the broader benefits of a supportive English legal system relate to: i) the increased value of English law itself, through continuous building of precedent and legal expertise in digital securities, and ii) the widespread use of English law making the UK a more attractive trading and financial cluster for the international economy.

Digital securities and English law

How does the law deliver economic value to society?

The law is a critical piece of business infrastructure



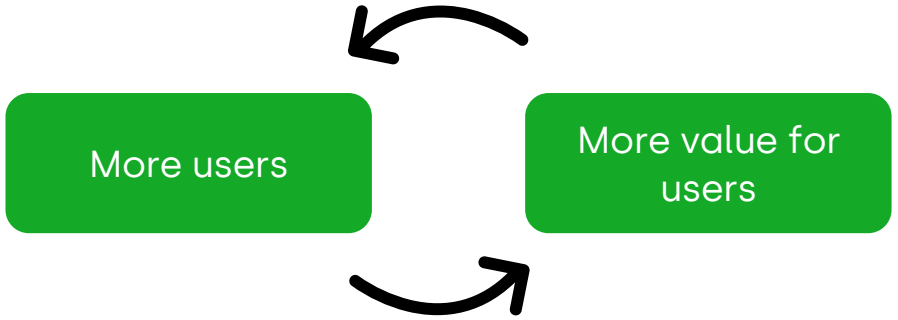
Legal systems add economic value by increasing predictability of outcomes, promoting greater confidence between parties and reducing transaction costs.

Legal systems and the way they support economic value is characterised by **network effects**.

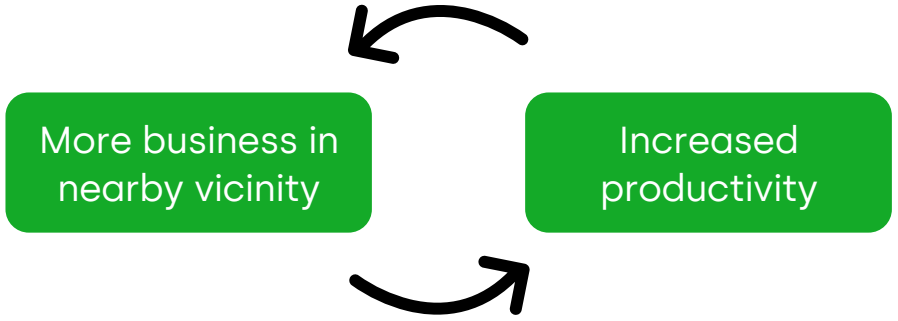
Source: Oxera (2021), 'Economic value of English law', October

The economic characteristics of legal systems

Network effects. The more users who join a platform, the greater the value of the platform to the users, so the easier it is to attract more users. Strong network effects mean that these markets can tip to one or a small number of platforms. In such markets that may be a 'first mover advantage' - where providing solutions early is beneficial in building a user base.



Agglomeration benefits. Clustering of economic activity benefits businesses by providing concentrations of specialized expertise, knowledge sharing and increase productivity and innovation. Expertise from the use of a legal system and legal services can to permeate through the wider economy.



We return to these concepts as they apply specifically to capital markets and digital securities below.

Global Eurobond issuance, 2021

Source: BIS.

UK domestic equity issuance, 2021

Source: London Stock Exchange.

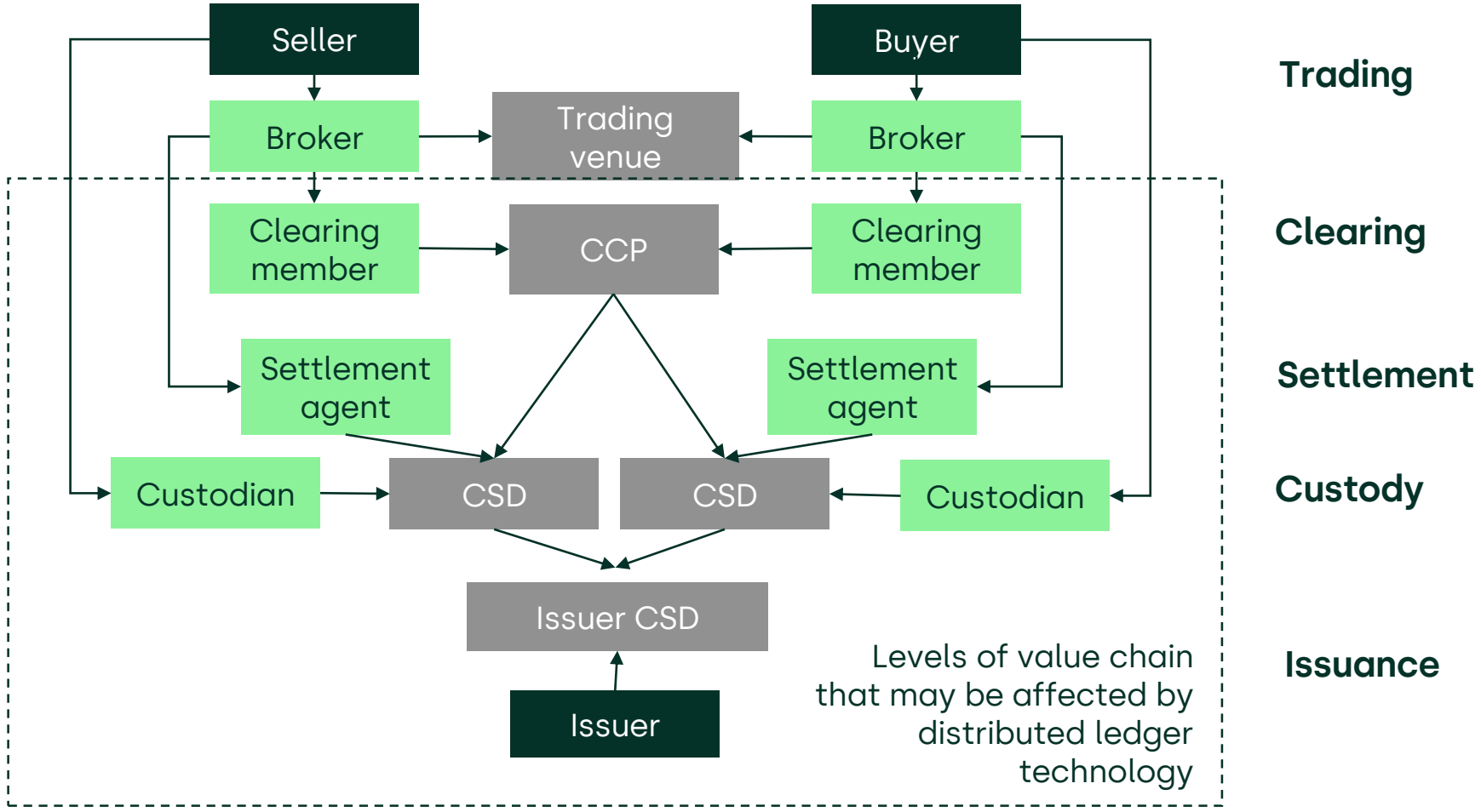
Repo turnover with a UK counterparty, 2021

Source: ICMA.

Global OTC interest rate derivatives turnover, 2022

Source: Bank of England.

Illustrative example of equities post-trade value chain



Sources:

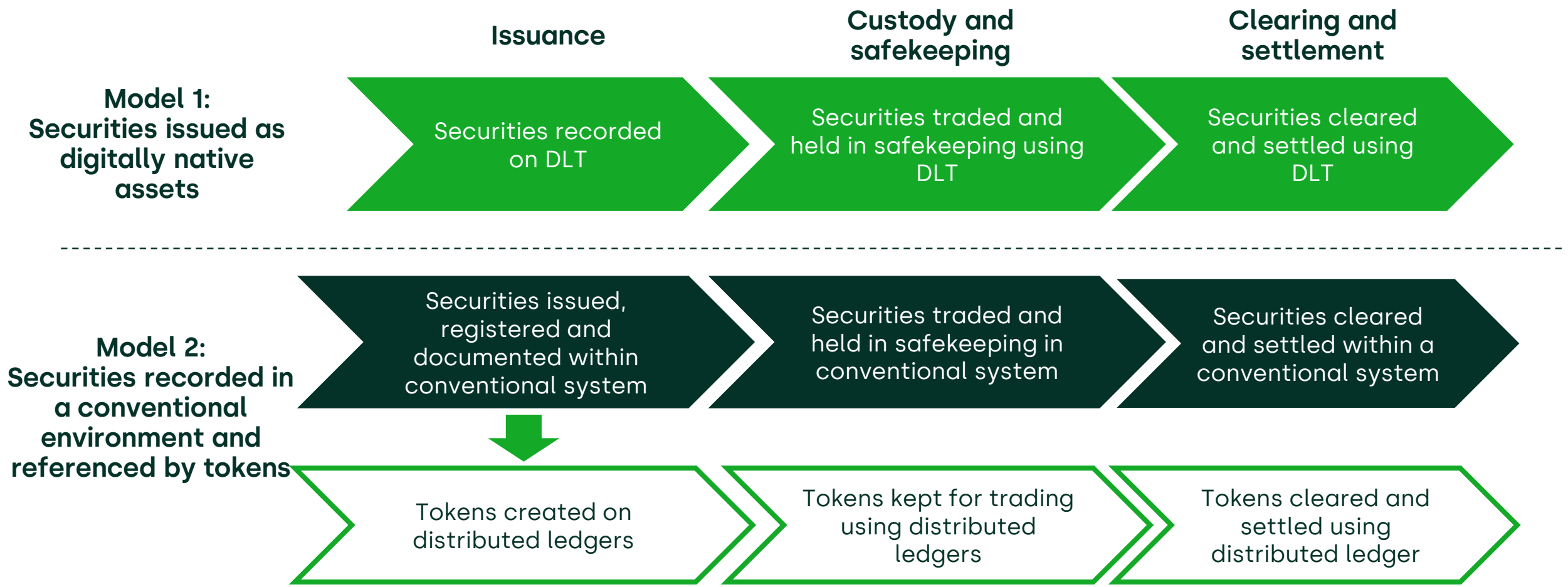
Oxera (2020), 'Primary and secondary equity markets in the EU', for the European Commission.

Oxera (2011), 'Monitoring prices, costs and volumes of trading and post-trading services', for the European Commission.

Oxera (2010), 'Costs of securities trading and post-trading—UK equities', for Euroclear UK & Ireland, April.

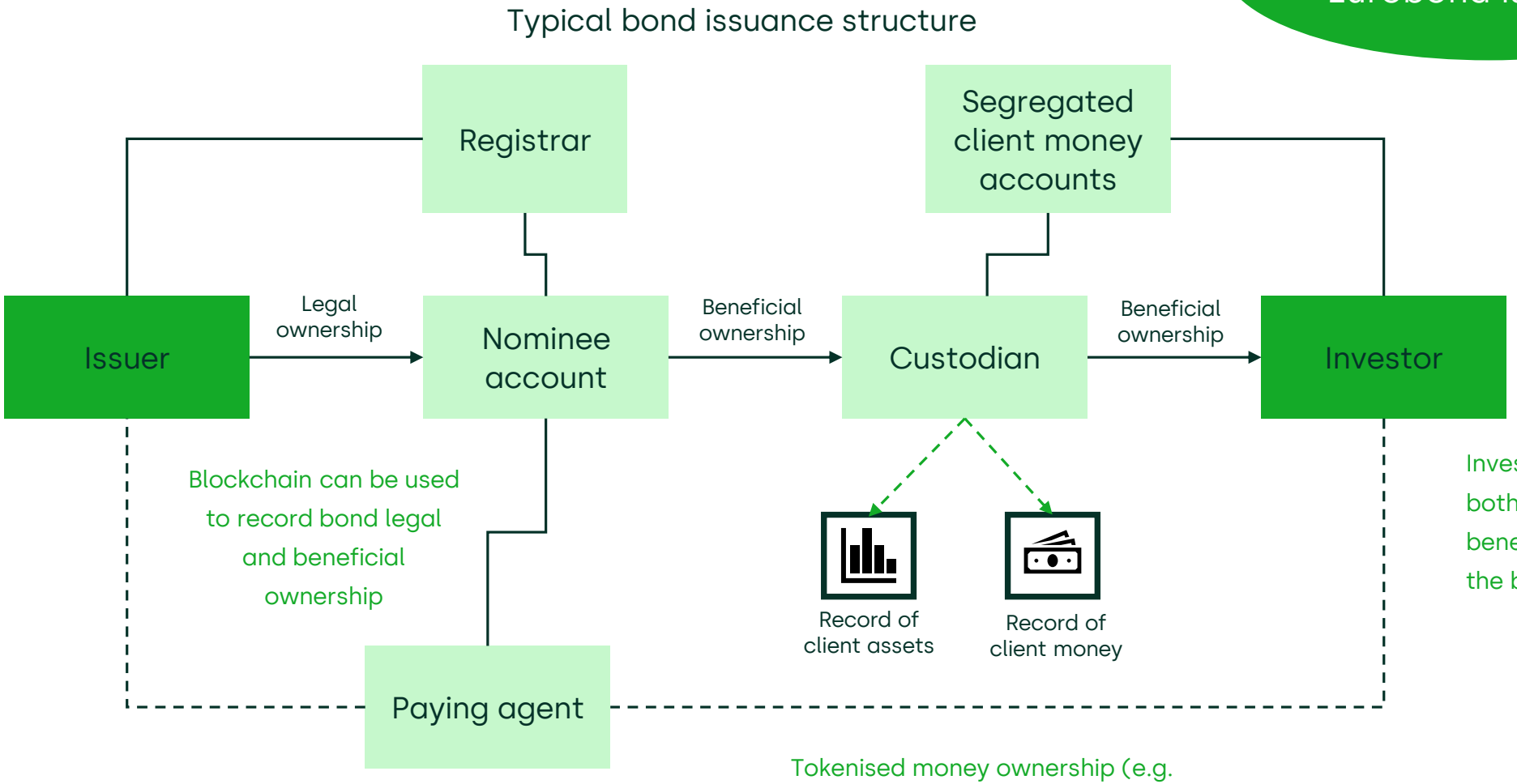
Oxera (2006), 'The Cost of Capital: An International Comparison', for the City of London Corporation and the London Stock Exchange.

What are digital securities?



Digital securities: case studies (typical Eurobond issuance process)

Typical settlement process for a Eurobond is 5 days



Source: Oxera, based on Cohen et al. (2018); World Bank.

Existing use cases / services using DLT

	Pre-issuance / issuance	Custody & asset servicing	Clearing and settlement
Main economic function	• Information exchange • Gathering data from multiple parties • Creating database record of a security	• Safekeeping of assets • Ensuring ownership rights (e.g. dividends, coupons) are exercised	• Safe transfer of legal or beneficial ownership of security in return for payment
Problem DLT is attempting to solve	• Simplifying information sharing • Automating certain processes e.g. creating term sheets • Alternative way to transition to dematerialised securities	• Reduction in reconciliation across chain of custody • Alternative way to facilitate beneficial owner account model	• Reduction in reconciliation across chain of custody • Alternative way to facilitate faster settlement times
Example use cases and providers	• DLT-based platform for management of syndicated bonds and structured product issuance (e.g. Agora) • DLT-based platform for processing documents associated with issuing corporate notes (e.g. Nivaura) • DLT-based register as alternative to book-entry system (e.g. Clearstream D7)	• Embedding smart contracts within bond token to automate payment of coupons (e.g. Symbiont)	• Representing existing equities as tokens to provide easier access to overseas investors, equivalent to depository receipt model (e.g. KALYP) • Enabling faster transfer of tokenised collateral while underlying securities remain in place (e.g. HQLAx)

Digital securities: case studies (UK)

Nivaura / LuxDeco issuance, 2017

- In 2017, LuxDeco issued two digital bonds as part of the FCA regulatory sandbox.
- The DLT environment (using the Ethereum public blockchain) was developed by Nivaura and the issuance was managed by JP Morgan and Allen & Overy.
- Both bonds were issued under English law.
- The first bond was a sterling denominated bond that used Nivaura's DLT platform to facilitate settlement (of tokenised fiat currency) and as a register.
- The second bond was denominated in Ether and was fully settled on the Ethereum public blockchain using smart contracts.
- For both bonds, the issuance removed the need for a registrar and allowed the legal and beneficial titles to be united. The experimental bond also eliminated the need for a paying agent

Agora / R3

- Agora digital capital markets is a UK-based fintech provider that is developing a DLT-based platform for the issuance of syndicated bonds and structured products.
- The platform is built using the Corda blockchain, developed by R3.
- During the pre-issuance phase, the Agora platform converts the term sheet representing the security into a smart contract, which allows certain lifecycle events (e.g. payouts) to be automated
- The DLT-based platform is designed to reduce the level of reconciliation required between parties to the transaction
- Holding and settlement of the security takes place via a CSD

Source: Various

Digital securities: case studies (Europe)

European Investment Bank (EIB) issuance, 2021

- In April 2021, EIB issued a €100m 2-year bond via the Ethereum public blockchain.
- This experiment involved multiple dealers and investors not affiliated with the issuer.
- The issuance was led by Goldman Sachs, Santander and Société Générale (who also acted as a registrar).
- The bond was issued under **French law.** Since 2017, French law gives the same legal effect to securities defined on distributed ledger as book entries in a CSD.
- The transaction was selected by Banque de France as part of an experiment with its own central bank digital currency (CBDC). Cash settlements were materialised by CBDC using smart contracts.

HQLAx platform

- The HQLAx DLT-based platform allows for collateral swaps in the securities lending market.
- The securities are issued in a conventional environment and grouped in the form of baskets of securities.
- For the purpose settlement, the baskets are tokenised, i.e. represented in a DLT environment by tokens. The underlying securities remain in the custody locations of both parties.
- Transactions are settled using atomic (i.e. immediate) Delivery vs Delivery at a pre-agreed time.
- This process is aimed at eliminating the time and operational costs associated with to physically moving securities across settlement systems.

Source: Various

Digital securities: case studies (Europe)

Euroclear OAT bond experiment, 2020

- In March 2020, Banque de France, AFT, Euroclear, French primary bond dealers and custodians set up an experiment to assess the potential of settling French government bonds (OATs) using central bank digital currency (CBDC).
- The experiment involved the AFT issuing "native" securities tokens and Banque de France issuing CBDC tokens in a blockchain environment.
- After issuance, the experiment included a number of simulated transactions e.g. repurchases, secondary market trades and coupon payments.

Source: Various

Timeline of digital securities

Digital securities primarily exist as proof-of-concept experiments

Early stage commercialisation of certain use cases

Some stakeholders begin to focus on established use cases

Selected milestones

2017
France introduces law governing digital securities

2017
Nivaura issues Ethereum-denominated bond in the UK under FCA sandbox

2018
World Bank issues blockchain bond in Australia

2019
HQLAx settles first live settlement on DLT platform

2020
Euroclear French government bond settlement experiment

2021
Germany introduces law permitting issuance of unregistered securities via DLT

2021
EIB issues a €100m bond via Ethereum under French law

2022
SDX and UBS launch three-year digital bond, issue volume of CHF 375m

2023
HM Treasury to launch UK FMI sandbox for testing DLT

Source: Various.

Barriers to adoption of digital securities

From the perspective of market participants, there are several potential **barriers to adoption** which must be overcome

- **Network effects** required to establish a broad market **ecosystem**
- **Security** and **privacy** concerns around DLT networks
- Unsuitable or unsupportive **regulatory framework**
- **Perceived lack of private law clarity**
- Lack of common/**interoperable technological standards**
- Clear business and commercial rationale for investment

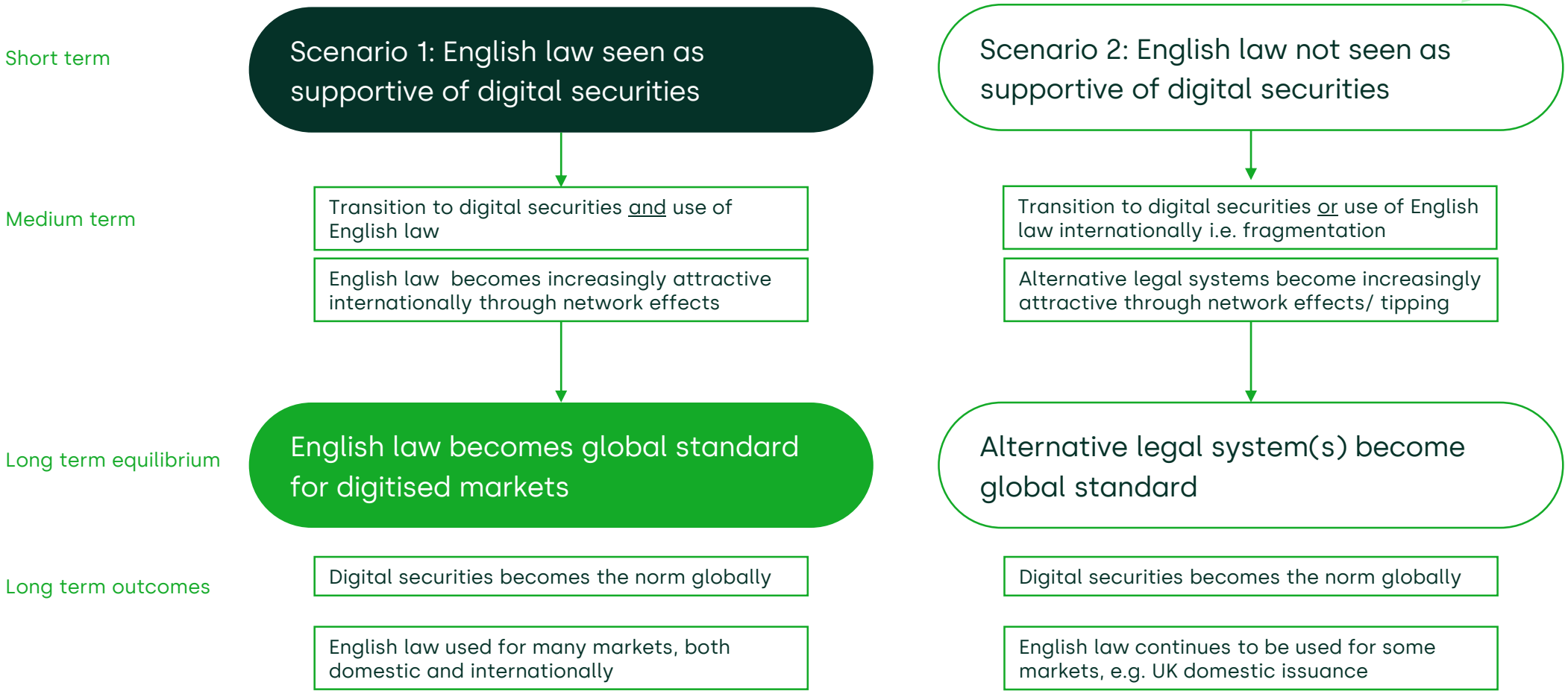
Source: Various.

The value of English law and digital securities

English law and digital securities

Stakeholder feedback confirms that a trend towards digitisation has begun in certain areas, and is likely to accelerate in the next 5-10 years. Parties will require legal certainty and clarity – we assume that legal uncertainties will be overcome in at least some jurisdictions. We can therefore consider two illustrative scenarios.

Even in scenario 2, English law may eventually be seen as supportive of digital securities. However, the presence of tipping markets means that there may be a first mover advantage.



English law and digital securities

We categorise capital markets transactions broadly into two types. The extent to which English law is supportive of digital securities will impact these types in different ways.

Domestic UK transactions

These are markets which do not have a choice of governing law (i.e. UK equity issuance), and hence will necessarily contract under English law.

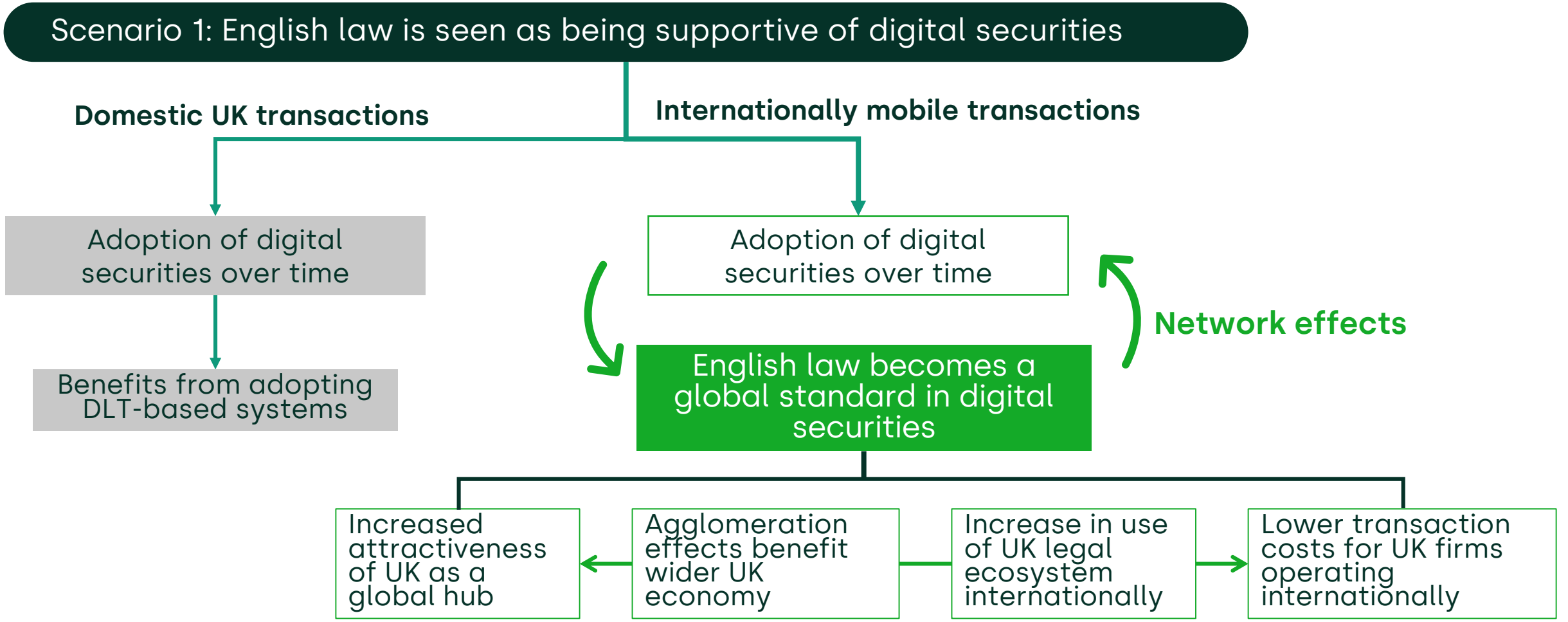
- Contracts remain under English law in any case
- No or slow adoption of digital securities if English law is not supportive

Internationally mobile transactions

Parties have a choice of governing law to contract under (e.g. international bond issuance). The choice of law is not necessarily linked to the physical location of the parties, assets or processing technology.

- Adoption of digital securities over time
- Transition away from English law over time if not supportive of digital securities

Note: Internationally mobile transactions are not the same as cross-border transactions, and can still involve UK companies. The key is whether the parties are free to decide the governing law of the contract.


Scenario 1: English law is seen as being supportive of digital securities
Domestic UK transactions
Internationally mobile transactions
Adoption of digital securities over time
Benefits from adopting DLT-based systems
Adoption of digital securities over time
Network effects
English law becomes a global standard in digital securities
Increased attractiveness of UK as a global hub
Agglomeration effects benefit wider UK economy
Increase in use of UK legal ecosystem internationally
Lower transaction costs for UK firms operating internationally

Discussion/Q&A

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