The design and functioning of CSD services in the EU

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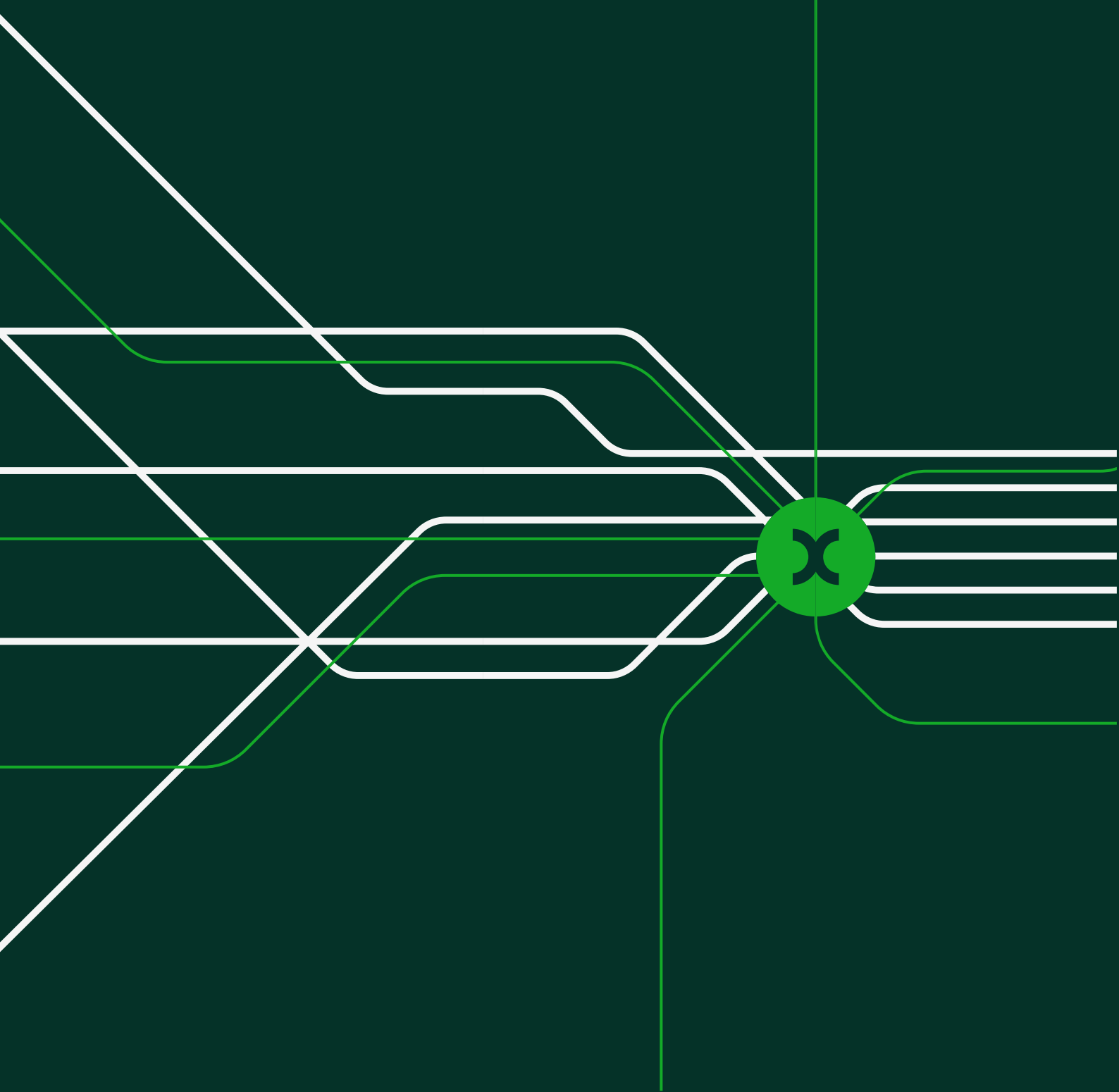
Economic analysis prepared for Euronext Securities

October 2025



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1.1 Why this report?

There is growing attention from policymakers regarding the market structure of EU Central Securities Depository (CSD) services. The 2024 reports of Mario Draghi and Enrico Letta both call for further consolidation of financial market infrastructures—particularly in the area of CSD services. In parallel, the European Commission has recently launched a consultation on removing barriers to deeper integration of EU capital markets.[1]

This is an important debate with implications for investment and the real economy. As we explain in our report, the efficiency of CSD services impacts overall execution costs for EU investors and, ultimately, affects the cost of capital for companies in the EU.

This policy debate raises important questions about market design and functioning. CSD services—in particular settlement and custody—are examples of economic networks in which buyers, sellers, and securities issuers interact. From a public policy perspective, ensuring that these markets function effectively for end-users requires a clear understanding of these services as part of a broader economic network. The dynamics of competition and efficiency in network industries can be complex, and there is a substantial body of economic literature that explores these issues across a variety of sectors.

This report, commissioned by Euronext Securities, provides an economic analysis of CSD services from a market design perspective. It focuses on whether (and how) competition is possible at different levels of the value chain and identifies the conditions for competition to be effective and beneficial for end-users. Broadly speaking, CSD services consist of issuance, settlement, custody and asset servicing. This report focuses on these services.

In 2024, Euronext announced a new strategy for its CSD operations within the EU, as part of its group-wide 'Innovate for Growth 2027' initiative. This report also evaluates Euronext's CSD strategy through the

[1] See: Letta, E. (2024), 'Much more than a market', April; Draghi, M. (2024), 'The future of European competitiveness. Part B: In-depth analysis and recommendations', September; European Commission (2025), 'Targeted consultation on integration of EU capital markets', April.

lens of market design, assessing its implications for end-users and the overall functioning of CSD services.

1.2 Our approach

Our analysis draws on the economics of network industries, market design theory, and Oxera's extensive experience in capital markets and post-trade services.[2] It also incorporates insights from the academic and policy literature on EU CSD services, alongside technical discussions with Euronext representatives to better understand the practical implementation of the strategy.

The focus of this report is the economic characteristics of CSD services and the implications for market design. As a result, our analysis is primarily a conceptual one, grounded in the economics of network industries, rather than an empirical exercise.[3] Such a conceptual economic analysis is currently not available and provides an important input into the policy debate.

When describing the market structure and EU landscape we are generally describing the situation for equities, although as we explain below the model for competition applies to various asset classes.

1.3 Key findings

Fragmentation in CSD services today

In relation to CSD services, fragmentation is commonly used in the policy debate as a shorthand to refer to the large number of CSD legal entities in the EU, as well as the perception that (partly as a result of fragmentation) the costs to end-investors of settlement and custody in some EU financial centres, and generally for cross-border transactions are high.

From an economics perspective, a potential problem of having too many CSDs in the EU is that individual infrastructure providers (with fixed costs) are too small to benefit from economies of scale. Moreover, the very large number of CSDs in the EU also means that custodians have to

[2] See, for example: Oxera (2002), 'The Role of Custody in European Asset Management', Report prepared for the European Asset Management Association; Oxera (2010), 'Costs of securities trading and post-trading—UK equities', Report prepared for Euroclear UK & Ireland; Oxera (2011), 'Monitoring prices, costs and volumes of trading and post-trading services', Report prepared for the European Commission DG Internal Market and Services; Oxera (2014), 'Global cost benchmarking of cash equity clearing and settlement services', Report prepared for ASX; Oxera (2020), 'Primary and secondary equity markets in the EU', Report prepared for the European Commission DG FISMA.

[3] For example, we do not seek in this report to quantify the costs of post-trading services and/or the potential for efficiencies in the EU. Oxera has undertaken various pieces of empirical analysis in relation to trading and post-trading and presented this in other studies; see, for example, the reports cited in the footnote above.

establish and maintain a lot of connections to individual CSDs potentially resulting in further additional costs in the value chain.

Solutions

How can the EU achieve and benefit from economies of scale? One solution would be to establish a single EU-wide CSD, as suggested in the 2024 Draghi report.[4] Another solution is competition. As our economic analysis in this report demonstrates, competition between CSDs can work and be effective in addressing the current fragmentation. Competition can work effectively, as the regulatory framework and infrastructure, particularly TARGET2-Securities (T2S), is in place and provides the foundation for competition. A concern that is sometimes raised in relation to competition is that it would result in even more fragmentation. Our report clarifies that this is not the case and explains that this a misunderstanding.

A single EU-wide CSD, such as that proposed by Mario Draghi, would be similar to the market structure that exists in the USA, where equity CSD services are provided by the user-owned Depository Trust & Clearing Corporation (DTCC). A CSD like DTCC clearly benefits from economies of scale, but would this model work for the EU today?

First, economies of scale do not automatically mean the optimal market structure consists of a single provider. In modern economies there are relatively few industries where economies of scale are so significant that the market can only sustain one provider. This is partly as a result of technological change reducing the cost of building competing networks as well as changes to regulation and market design (e.g. interoperability arrangements). For example, although mobile phone networks come with high fixed costs, the market can still sustain a number of different players.

Second, when DTCC emerged as the single equity CSD via market-driven consolidation in the 1990s, the US market did not benefit from interoperability arrangements such as those provided by TARGET2-Securities in the EU today (which enables user choice in settlement). In other words, the foundations for competition between CSDs to work were not in place.

Finally, from an economics perspective, full structural consolidation is not a necessary condition for achieving scale efficiencies (and,

[4] There have also been calls for greater harmonisation of securities, tax and company laws across Member States.

importantly, not having competition between CSDs come with various disadvantages, particularly in markets where service innovation and dynamic competition is relevant). These outcomes could be achieved by allowing competition to drive efficiency, so long as the market structure supports these dynamics. Allowing effective competition is a sufficient condition for achieving efficiency, enabling the most efficient players to grow.

Would competition create more fragmentation?

While competition can resolve the current problem of fragmentation due to insufficient supply-side economies, is there a risk that competition for CSD services would create an additional form of fragmentation?

Fragmentation today is linked to the fact that most EU Member States have their own CSD, and many of these CSDs are too small. As we have explained above, competition can be the process that drives consolidation, so the EU ends up with a smaller number of more efficient CSDs.

Competition would indeed mean potentially having more than one CSD active in a particular country (e.g. providing central settlement in the same stock). This is a different type of fragmentation altogether and is a question of 'network effects' (not economies of scale).

In services that bring together users, the value of participating in a given infrastructure is a function of the level of participation by others in the market (a network effect) and fragmentation can result in insufficient network effects. This has been the primary concern at the trading-platform level. While the introduction of competition was welcomed, there was a concern that trading fragmentation (i.e. a stock being traded on multiple platforms) could potentially result in liquidity fragmentation, which would be to the detriment of end-users.[5]

Our analysis shows that, in the EU, having multiple CSDs would *not* result in insufficient or suboptimal network effects. As long as all CSDs in the EU are connected and use the T2S platform then all CSDs together form one network. This ensures that settlement can take place at different CSDs and at different levels in the value chain. This means that for the settlement of a transaction in a particular security, the seller and buyer can always find each other even if they use different custodians and/or

[5] We note that *trading* fragmentation (i.e. a stock being traded on multiple platforms) does not necessarily result in *liquidity* fragmentation. For an explanation and analysis see: Oxera (2020), 'Primary and secondary equity markets in the EU', Report prepared for the European Commission DG FISMA.

different (investor) CSDs. In other words, having multiple CSDs does in itself not fragment the network and therefore does not result in suboptimal network effects.

This is an important insight which has implications for the design of the market. It means that if one stock is issued in one CSD and another stock in another CSD, this does not result in fragmentation from a network effects perspective. Similarly, if stocks are issued in one CSD and fixed income securities in another CSD, then again this in itself does not result in fragmentation from a network effects perspective. Similarly, when equities in one Member State are issued in one CSD and other equities in the same Member State are issued in another CSD, then this in itself does not affect the network effects as long as both CSDs are part of the T2S platform and have set up the relevant CSD links.

Unlocking the potential for competition

To summarise, with the introduction of T2S and the EU passporting regime under the Central Securities Depository Regulation (CSDR), policymakers have created the sufficient conditions for competition in CSD services to work. Indeed, Euronext's CSD strategy takes advantage of the common platform structure provided by T2S to improve user choice and introduce competition. Now that the regulatory framework and infrastructure is in place, what is needed is to ensure more CSDs are connected to T2S and the corresponding CSD links are set up. While further action from policymakers and the post-trade industry is needed to promote harmonisation and standardisation of European post-trade activities, competition can work and be effective already in the short to medium term.

Euronext's strategy can unlock the potential for competition and act as a catalyst for change. Euronext's strategy takes advantage of already existing regulatory measures such as the T2S platforms and CSD links. The implementation of its strategy will result in the introduction of competition and choice for central settlement and issuance: for the first time this part of the post-trade value chain can fully enjoy the benefits from a competitive process (for example, in terms of improvements in efficiencies, service quality and innovation). Other CSDs are likely to respond to Euronext's offering by improving their own service quality and efficiency, investing in innovation, or expanding their reach. Over time, this competitive pressure can lead to convergence towards more efficient pricing and better user outcomes. In other words, our analysis shows that competition, supported by the adoption of T2S by all EU CSDs, is the mechanism through which the current fragmentation and inefficiency can be addressed.

1.4 Structure of this report

The rest of this report is structured as follows.

- Section 2 sets out the value chain and economic characteristics of CSD services, drawing on the broader insights from the economics of competition in network industries.
- Section 3 provides a brief description of the market context in the EU, particularly the role of the T2S and CSDR.
- Section 4 describes the potential impact of Euronext's CSD strategy on end-users and market functioning.

2 The economics of CSD services—(how) can this market work well?

2.1 Introduction

The short answer to this question is that with relevant industry practices in place and well-designed regulatory measures, the market for CSD services can work well; competition can work and be effective and deliver good outcomes for end-users.

In this section, we describe the value chain, and analyse the economic characteristics of CSD services and the implications for the design of the market.

2.2 What are CSD services?

The equity CSD value chain comprises the range of activities and services that take place after a trade has been agreed between buyer and seller. Broadly speaking, there are four main types of activities.[6]

- **Issuance**: this refers to the process of establishing securities in book-entry form and providing the initial recording services to issuers (e.g. listed companies).
- **Settlement:** this refers to pre-settlement positioning (ensuring that the buyer has the monies available and the seller has the securities available) and the completion of a transaction through the transfer of ownership of securities and monies. For on-exchange equity transactions, it is initiated once the trade has been cleared by the central clearing counterparty (CCP).[7] In addition to the settlement between the CCP and the trading member, through its settlement agent, there is an over-the-counter (OTC) settlement leg which refers to the settlement between the trading member or broker and its client.
- **Custody:** this refers to the safekeeping and administration of securities held in the CSD. This includes the process of providing/maintaining securities accounts for clients.

[6] For a description of trading and post-trading services, see: Oxera (2011), 'Monitoring prices, costs and volumes of trading and post-trading services', Report prepared for the European Commission DG Internal Market and Services; and Oxera (2010), 'Costs of securities trading and post-trading—UK equities', Report prepared for Euroclear UK & Ireland.

[7] These transactions typically take place simultaneously on a Delivery-versus-Payment (DvP) basis. As discussed below, settlement may take place in different locations. We can distinguish between book-entry settlement which takes place within a securities settlement system operated by a CSD (also referred to as 'central settlement') and settlement internalisation which takes place in the books of custodians where the custodians have an account with the CSD.

- **Asset servicing**: this refers to the value-added services that come attached to the safekeeping of assets, including the handling of corporate actions, processing dividend payments, facilitating the exercise of shareholder rights, collateral management, and securities lending.

Many securities trades are also subject to central counterparty clearing.[8] Clearing is not the focus of our report, although we note that the CCP plays an important role in settlement by preparing settlement instructions for matched and netted trades.

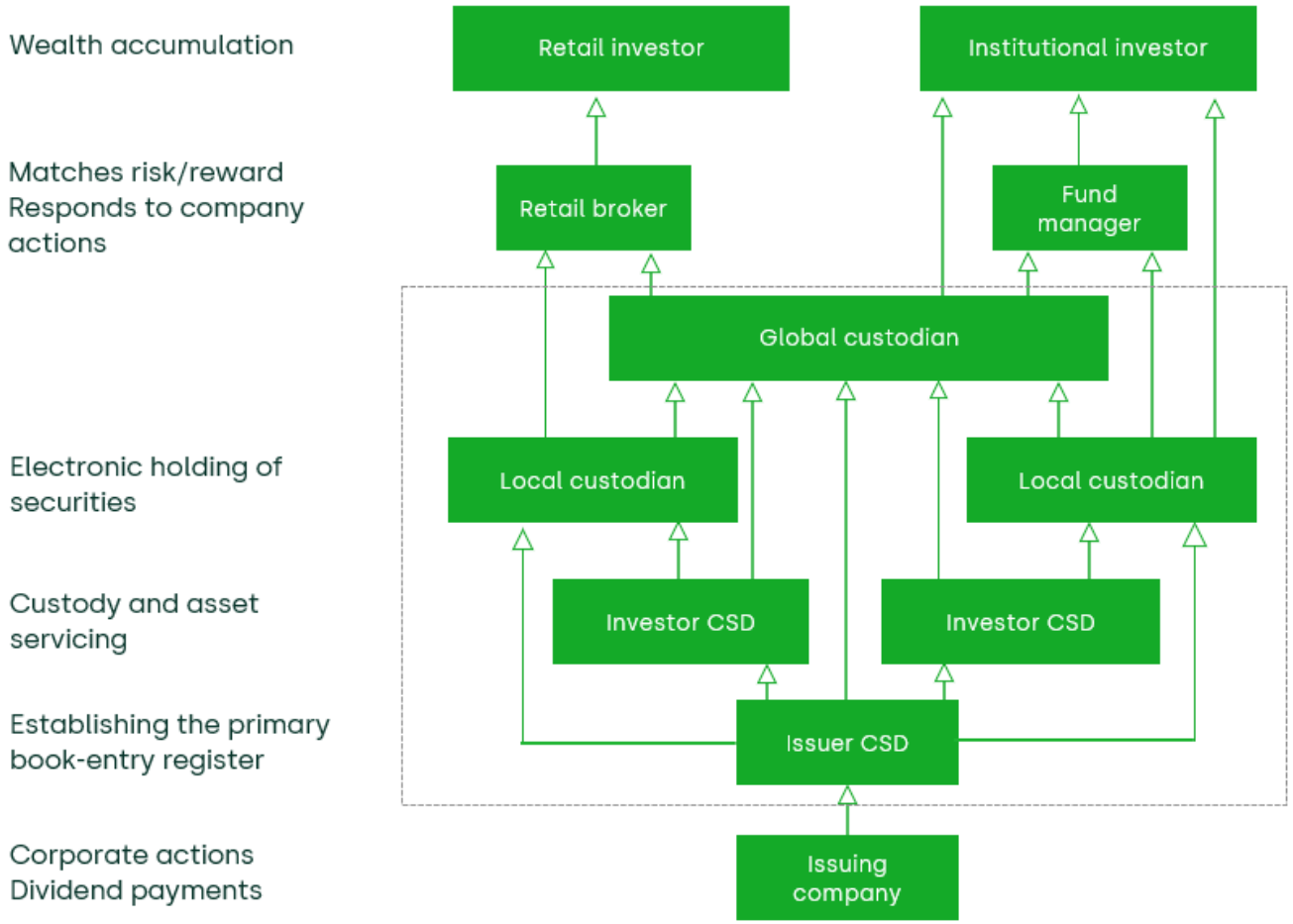
In the above, we can distinguish between flow-related activities and stock-related activities. The former are activities that arise from securities transactions, while stock-related activities are related to the existence of the securities rather than transactions involving those securities.[9] We discuss these in turn below, highlighting the roles played by both CSDs and custodians.

Figure 2.1 presents a stylised value chain for the provision of equity custody (i.e. stock activities) and Figure 2.2 for equity settlement activities (i.e. flow activities).

[8] Central clearing is a risk management process in which the CCP interposes itself between the counterparties to a trade. The CCP becomes the legal counterparty to both sides of a transaction—acting as the buyer to every seller and the seller to every buyer—thereby assuming the counterparty credit risk associated with the transaction. Through this novation, the CCP guarantees the performance of contractual obligations, even in the event of default by one of the original counterparties. It manages this risk through collateral requirements (initial and variation margins), daily mark-to-market practices, and default management procedures, including the maintenance of default funds.

[9] There are clearly links between both types of activity, since stock-related activities (e.g. maintaining a book-entry register) facilitate the provision of flow-related activities.

Figure 2.1 Stylised value chain for equity custody



Note: References to 'local' in the figure are from the perspective of the domicile of the issuing company's securities.
Source: Oxera.

The primary book-entry register is established and maintained by the CSD into which the issuing company has issued its securities (the issuer CSD).[10] Historically in the EU, this has been the CSD established in the same financial centre as the company's primary listing, although this does not need to be the case.[11]

As Figure 2.1 above shows, there can be multiple options for investors to access safekeeping and custody services.

[10] An exception to this is the issuance model commonly used for ETFs in the EU. The ETF issuance model involves Clearstream Banking S.A. and Euroclear Bank jointly appointing a financial entity to act as a common depository responsible for issuance.
[11] As we explain in section 3 below, the regulatory framework in the EU enables a CSD in one Member State to offer issuing services to a company domiciled in another Member State by passporting into that country.

- The end-investor appoints a local custodian, which holds an account in the issuer CSD.[12]
- The end-investor appoints a global custodian, which may operate (or contract out) local custody services in a number of financial centres and can access the issuer CSD through its local branch, or remotely via its local legal entity.
- The end-investor may access the issuer CSD indirectly, by holding an account in another CSD (referred to as an investor CSD) which has established a link with the issuer CSD.[13]

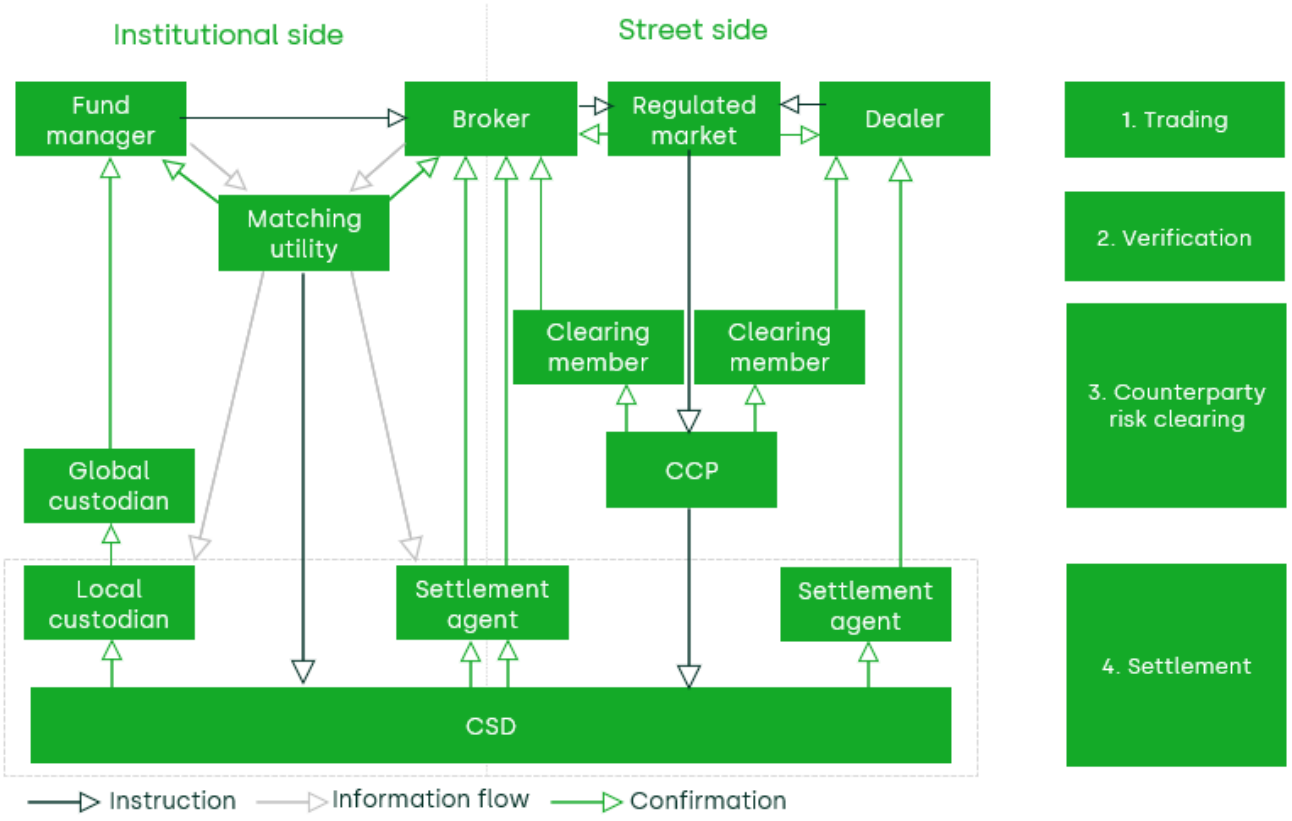
The second two options are particularly relevant for cross-border securities holdings, as it is often not efficient for an end-investor to contract directly with local custodians in each market where they hold equities. The precise structure of the value chain and the route by which an investor accesses the underlying security will vary according to the particular market and investor.

While investor CSDs and global custodians are all used by end-investors to access the issuer CSD, it is important to note that the service offering differs considerably between each player. In particular, global custodians typically cover a much larger number of countries and provide a more extensive bundle of services beyond core safekeeping, including asset servicing, tax services, securities lending and liquidity management, and fund services (e.g. portfolio valuation and compliance).[14] Some of these services require a banking licence to offer, which CSDs do not necessarily have (except for Euroclear Bank and Clearstream Bank).

Figure 2.2 below presents stylised value chain for the provision of equity settlement (i.e. flow activities).

[12] Even when investors and market participants could be a direct member of the CSD, they might still decide to use the services of a custodian with economies of scale and expertise in the procedures of the CSD, market practices and the management of securities holders' rights and entitlements.
[13] Concretely, a CSD A (the investor CSD) opens an account with another CSD B (the issuer CSD) in order to provide its clients access to foreign securities held in CSD B.
[14] For a description of the role of custodians and CSDs, see Russo, D., Rosati, S., Chan, D. and Fontan, F. (2007), 'The securities custody industry', Occasional Paper Series 68, European Central Bank.

Figure 2.2 Stylised value chain for equity settlement



Note: The example value chain assumes trades are taking place on a Regulated Market (RM). In Europe most settlement instructions on the institutional side are sent directly by brokers and fund managers to their respective custodian or settlement agent.
Source: Oxera.

In the above example of the value chain, once a trade has been agreed, the trading venue sends it to the CCP, which provides netting and counterparty risk management on behalf of the buyer and seller.[15] The CCP then sends the trade on to the CSD for central settlement. When the broker receives the securities in its account, it will transfer these to its client through another set of settlement instructions.

Often the CSD where central settlement takes place is the issuer CSD for that security, although this does not need to be the case, providing that the CSD where central settlement takes place has an account in the issuer CSD.

[15] The simple value chain above shows a single CCP sending settlement instructions to a single settlement platform. In practice, a trade on a given venue may be cleared by multiple CCPs, either via interoperability arrangements between CCPs or via a 'preferred clearing' model. For a more detailed explanation, see: Barnes, R. (2010), 'Counterparty clearing house user choice: an evolving European landscape', *Agenda* (an Oxera publication), March.

More broadly, the location where the actual transfer of securities and monies takes place will be determined by the level of account holding set out in Figure 2.1. If both buyer and seller use the same settlement agent, the transaction may be settled in the books of the agent itself (referred to as 'settlement internalisation'). Similarly, if both participants have accounts in the investor CSD, the settlement can take place on its books (this is functionally the same as central settlement).[16]

2.3 Economics of CSD services

2.3.1 Economic characteristics of CSD infrastructure

CSD infrastructure (i.e. custody and settlement) exhibits three main economic features:

- economies of scale;
- economies of scope;
- network effects.

We describe each of these characteristics in turn below.

Economies of scale

Economies of scale arise when the average cost per unit falls as the number of units increases. With regard to CSD infrastructure, the fixed costs of setting up the system are usually high relative to the variable costs of processing each additional transaction. Therefore, the more transactions a system processes, the lower the cost per transaction.

Economies of scale tend to reward size: higher transaction volumes drive greater efficiency, which can enhance competitive positioning.[17] However, they typically have a limit and this explains why markets where economies of scale are important can still sustain a number of different (large) providers.

These economies of scale can exist at the level of the individual transaction, at the level of market players and at the level of a financial centre and can be observed at different levels of the value chain. For example, custodians and settlement agents enable end-investors to access multiple CSDs, which may not be efficient for an end-investor to

[16] Settlement via investor CSDs is covered by the same regulatory requirements for settlement finality and settlement discipline as settlement taking place within the issuer CSD.
[17] In other words, competition is important in allowing economies of scale to benefit customers.

connect to directly.[18] Likewise, depending on economies of scale custodians and settlement agents will themselves work out the most efficient arrangements to access a CSD (including use of local custodians).

Economies of scope

Economies of scope occur when it is cheaper to produce a range of products from a common cost base. For example, if a bank sets up a credit-scoring facility to assess the creditworthiness of potential customers, it can use this facility to supply a wide range of loan products, including credit cards, overdrafts, and personal or business loans. These economies may also be amplified by customer convenience and opportunities for cross-selling, for example when telecom providers offer bundled media services (tv, broadband and telephony via the same network connection).

In the context of CSD services, infrastructure, personnel and technology can be used for multiple purposes. For example, it is common for the same CSD to provide both stock- and flow-related activities in a given equity (e.g. operating a settlement system and offering safekeeping services) and to provide these services for different types of securities and asset classes. Similarly, the value-added services offered by a custodian (e.g. processing corporate actions) may draw from the same cost base as core safekeeping services.

Network effects

Post-trade infrastructures bring together buyers, sellers and issuers of equities. The value of participating in a given platform is therefore a function of the level of participation by others in the market—a 'network effect'. Network effects, as demand-side economies, can be one-sided (i.e. between the same type of user), or two-sided (i.e. between different types of user, such as issuers and investors).

Settlement systems exhibit one-sided network effects among investors. When more investors settle their trades through a common settlement platform, the value of that infrastructure increases for all participants. Settlement becomes faster and cheaper due to greater standardisation, fewer manual reconciliations or intermediaries are needed, and

[18] Economies of scale are not the only reason for intermediation in post-trading services. For example, use of an intermediary also allows services to be tailored to an individual customer's needs.

operational risks and errors decrease when more counterparties use the same system.[19]

CSDs also exhibit multi-sided network effects: they bring together equity investors (as well as intermediaries, such as brokers and market makers) and issuers. The attractiveness to an issuer of using a particular CSD will be positively influenced by the number of investors on the other side of the system, and vice versa.

The more accessible and widely used a settlement system is, the more issuers are incentivised to issue securities through it—because doing so enables them to tap into a larger pool of investors. Similarly, a settlement system that is widely used by investors will benefit from economies of scale, with the resulting lower execution costs making an issuer's securities more attractive to potential investors which, in turn, makes the settlement system more attractive to issuers. Such cross-platform dynamics often lead to different fee structures for each type of user.

As we explain in more detail below, in the EU, the network effects associated with settlement are not limited to a single CSD but apply at the level of all CSDs using T2S as their settlement platform and connected to each other.

Custody and asset servicing do not require interaction of buyers and sellers and therefore do not exhibit the same one-sided network effects between investors as settlement systems. However, two-sided network effects may still exist. The value to an issuer of using a custody and asset servicing platform will increase as more investors use that platform (so the issuer can reach more investors e.g. for corporate actions). The network effects are not limited to a single CSD but apply at the level of all providers of custody services in the value chain.

The intermediated structure of custody chains means that the two-sided network effects (between investors and issuers) do not apply at the level of the individual CSD but at the level of all CSDs and custodians connected to the broader custody network. The issuer CSD manages asset servicing for all its participating clients and in turn all participants

[19] For a discussion and analysis of the benefits of standardisation and operational risk reduction in post-trading services (and capital markets more generally), see: Oxera (2004), 'Corporate action processing: what are the risks?', May; Oxera (2009), 'What are the benefits of the FIX Protocol? Standardising messaging protocols in capital markets', Report prepared for FIX Protocol Limited.

in the issuer CSD (including investor CSDs and custodians) will perform asset servicing for their own clients further up the custody chain.

Network effects should not be confused with the potential demand-side benefits of a reduction in the large number of CSDs in the EU. This may be attractive because a user that needs to connect to a large number of CSDs is likely to incur higher connectivity costs. Since the value chain for CSD services is predominantly intermediated, any benefits of lower connectivity costs from a reduction in the number of CSDs active in the EU today would be beneficial for intermediaries and end-users.

2.3.2 Types of competition

The way in which organisations in markets with network effects (including post-trade infrastructures) compete will differ according to the features of the market. In some cases, price will be the most important determinant of competition (where goods are relatively homogenous). However, service quality and innovation can play an equally important role—for example, Apple and Google competing to introduce new features on iOS and Android respectively.

Another important general feature of competition between networks is the possibility of a 'tipping point'. Consider an example of a card payment scheme. In a situation where the card proposition becomes less attractive than a new challenger payment method, the cardholder might switch to using the alternative method. As a result, this makes accepting the new payment method more attractive to merchants, encouraging an increase in merchant adoption. This, in turn, makes the method more attractive to the cardholder, and therefore more cardholders will switch, potentially resulting in an upward spiral for the challenger and a downward spiral for the incumbent.

Similarly, there have been examples of liquidity in financial markets 'tipping' between platforms. One such high-profile example is the 'Battle of the Bund', in which, during the mid-1990s, Deutsche Terminbörse was able to successfully attract trading in bund futures away from LIFFE. It was able to do this partly as a result of its product and service differentiation (particularly its focus on electronic trading and introduction of access points to traders across Europe).[20]

In the economics literature, this type of competition is referred to as 'competition for the market' instead of 'competition in the market'.

[20] For a detailed discussion, see: Cantillon, E. and Yin, P.L. (2010), 'Competition between Exchanges: Lessons from the Battle of the Bund', Working paper.

Rather than having multiple providers competing head-to-head for each transaction (competition in the market), multiple players compete to become the most popular trading platform (for a certain derivative) and once they have achieved that, they will compete with smaller players and new entrants to maintain that position; in particular the risk of the market tipping means that they remain subject to competitive pressure which forces them to continue to enhance services, innovate and offer their services at competitive prices.

There are also many examples of *competition in the market* in industries with network effects. In mobile telephony, competition is sustained between different cellular networks, despite strong network effects and scale economies.[21] In payment systems, the overall competitive picture is that multiple card networks have operated alongside each other in Europe along with several rival payment methods.

In the next sub-section, we discuss how the economic characteristics of a particular network influence the degree and nature of competition that is likely to prevail.

2.3.3 How does competition work in network industries?

Whether network industries, such as CSD services, tend towards concentrated markets (and potentially a single provider), and the extent to which competition may be feasible, depends on whether:

- network effects are one- or two-sided;
- there are large benefits to universal reach—there is a high level of demand for users to reach every other potential user;
- there is a central record—there must be one record that stores information of ownership within the network, and disjointed or misaligned records would lead to substantial inefficiencies.

In particular the combination of these last two features (universal reach and central record) explains the potential for competition. When the latter two characteristics are present, more concentrated market structures tend to result in at least some parts of the network.

For example, for an air traffic control system to be useful, it will need to cover all airlines using the airspace in a particular geographic area; this explains why there is typically one air traffic control centre in each

[21] This is made possible by interoperability arrangements between the different networks.

geographic area such as a city or country.[22] Similarly, for a postal service to be useful, it must be possible for a user to send a letter wherever they like. This explains why traditionally many countries would operate a government-regulated (or sometimes state-owned) postal service that provides mail delivery across the entire country.[23]

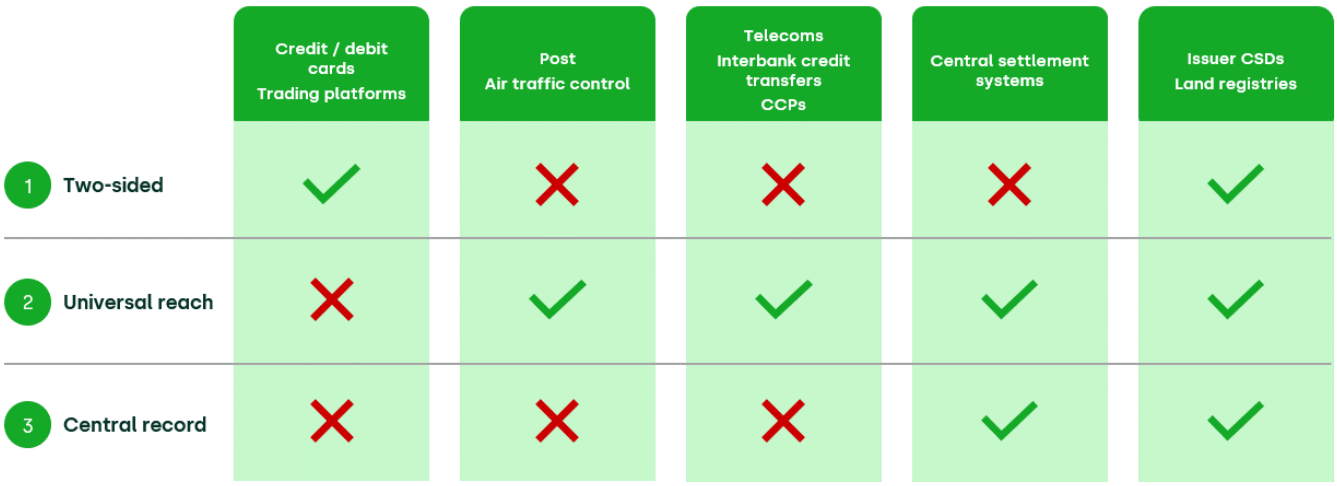
When using a phone network, users expect to be able to reach anyone else that has a phone; in other words, universal reach is required. This, together with the substantial costs of developing a fixed-line telephone network, has resulted in most countries traditionally having one provider of fixed-line telephony services. Similarly, when using a bank credit transfer system, there is also an expectation of universal reach; i.e. that users can send money to anyone else with a bank account—whether in their country or abroad. In practice, this, together with the substantial costs of developing a credit transfer system, has also resulted in most countries traditionally having one single provider of account-to-account credit transfer services.

On the other hand, in the case of debit and credit cards, universal reach is not required—a payment card product can be successful even if only some consumers hold it or some merchants accept it—consumers and merchants can always switch to another payment method. This explains why there are multiple providers of payment methods in most countries.

Figure 2.3 below shows various combinations of these network features, along with examples of networks that exhibit them.

[22] There are some exceptions. For example, in some countries, the military may have its own dedicated air traffic control systems and personnel. Although they primarily focus on managing the air traffic within military airspace and around military airfields, they work with civilian counterparts when they use the same airspace.
[23] This has changed significantly in the past 10 to 15 years or so. Various countries nowadays have a combination of public and private postal services where private postal services are not subject to a universal obligation and where the national postal service may be required to give access to its network to other operators.

Figure 2.3 Economic features of networks



Source: Oxera.

While trading platforms clearly exhibit (two-sided) network effects (both between liquidity demanders and liquidity providers, and between investors and companies listing on the platform), there is no requirement for universal reach. Indeed, it is possible for a trading platform to function and be successful even if not all potential users are active on it. As a result, it is possible to have a market in which multiple trading platforms co-exist and compete head-to-head to offer trade execution in the same equity security (i.e. competition in the market).[24]

Conversely, universal reach is required at the clearing level of the value chain. On a multilateral and anonymous trading platform (such as a stock exchange), participants do not know which counterparty they are trading with. Therefore, the CCP must be able to connect with every possible user of the trading platform.

Importantly, even where the structure of the market as a whole is of a form that would tend to lead to limited scope for competition (e.g. as a result of the importance of universal reach), particular industry practices or well-designed regulatory measures can still create the conditions for competition to work and be effective. For example, interoperability arrangements between mobile telephone networks

[24] We note that *trading* fragmentation (i.e. a stock being traded on multiple platforms) does not necessarily result in *liquidity* fragmentation. For an explanation and analysis see: Oxera (2020), 'Primary and secondary equity markets in the EU', Report prepared for the European Commission DG FISMA.

means that the requirement for universal reach applies at the level of the mobile phone network as a whole and not to individual providers within the network; this means that the market can sustain multiple mobile telephone networks and that competition between individual operators can work.

2.3.4 Would competition between CSDs be feasible?

We can apply these principles in a similar way to settlement and custody services to understand the degree and nature of competition that would be feasible.

- When considering the settlement activities described in Figure 2.2, the securities settlement system operated by a CSD is characterised by the requirement for universal reach and the need for a central record—parties transacting on a (multilateral and anonymous) trading platform need to know that they can settle a transaction with any potential buyer or seller and there must be one record that stores information of ownership at the top-tier account level.[25] This means that settlement takes place on a *single* platform or within accounts held on that platform (i.e. further down the custody chain). This explains why, currently, there is a single CSD in each EU Member State. However, as we explain in the next section, user choice and competition in central settlement is possible in the EU, given the common platform facilitated by T2S. This means that individual participants can choose which CSD to use for central settlement as long as the chosen CSD has links with other CSDs and uses T2S.
- Likewise, when considering the top-level custody activities described in Figure 2.1, the need for universal reach and a central record explains why there must be a *single* issuer CSD responsible for maintaining the register at the furthest upstream level of the chain of custody. However, competition can still take place at this level of the value chain: CSDs can compete to be the single issuer CSD for a given listed company (this is referred to as 'competition for the market'). In section 4, we explain that such competition for issuers is now being introduced in relation to domestic equities.
- Conversely, at downstream levels of the custody chain, there is no requirement for a central record nor universal reach. In

[25] In practice, an omnibus account structure means that the underlying securities are held at the top-level account at the CSD by an intermediary, while settlement may happen further down the custody chain, if both parties to the settlement use the same custodian or investor CSD.

effect, suppliers of downstream custody services (including asset servicing) are providing the customer with an access route to the issuer (via a chain of custody going to the top-level custody account). The client can choose a custodian to provide this service independently of the choices of other investors. It is therefore possible to have direct competition in the market between custodians to provide access to the issuer CSD, and end-investors can choose the provider that best meets their needs. This is also the case for investor CSDs (some investors may decide to use an investor CSD instead of the issuer CSD).

In sum, although CSDs exhibit network effects and come with a requirement for universal reach (which has traditionally resulted in a single CSD in each Member State) competition can work and be effective, to some extent similar to how competition functions in other markets with network effects (such as mobile telephony where interoperability arrangements deliver universal reach and enables different network providers to compete). In the next section, we explain how this can work in practice in CSD services and how EU initiatives such as T2S and the passporting regime under CSDR have laid the foundations for competition to work and be effective.

3 The current CSD landscape—what is the problem and how to solve it?

3.1 Introduction

The market for CSD services is currently not working well; the market is characterised by fragmentation and a lack of competition. However, our analysis shows that EU initiatives such as T2S and the passporting regime under CSDR have laid the foundations for competition to work and be effective.

In this section, we provide a brief overview of the EU CSD landscape. This section is not intended to provide a comprehensive history of the regulatory and market developments, but focuses on the changes that have provided the conditions for competition to work and be effective. We also discuss the problem of fragmentation in EU CSD services (and explain why post-trade fragmentation has different implications to fragmentation at the trading level).

3.2 The EU CSD landscape

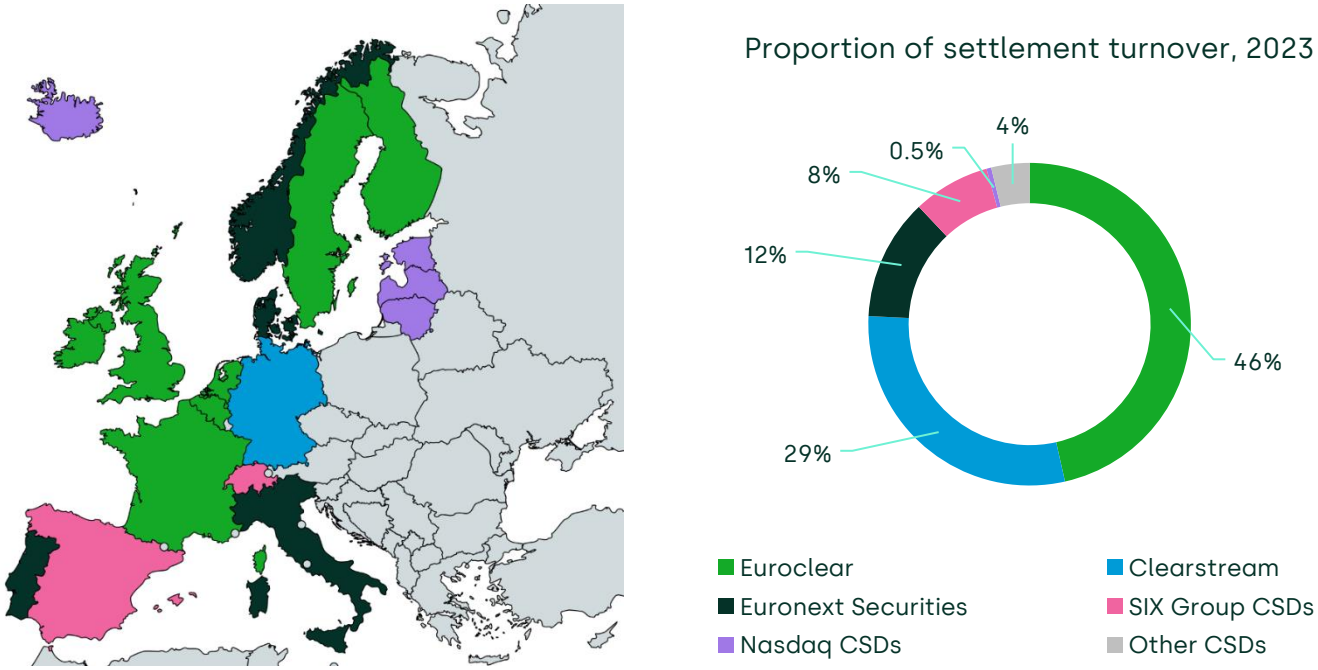
There is now considerable attention from policymakers regarding the market structure, efficiency and competitiveness of EU trading and CSD services.

The structure of EU capital markets (including CSD services) has evolved significantly over the past 20 years. This has been particularly pronounced in trading services. The introduction of MiFID I in 2007 allowed equity trading to take place away from national stock exchanges. As new platforms entered the market and began to compete with exchanges to offer trading services, this resulted in lower trading fees and the introduction of new methods for trade execution. Much of the focus in post-trading has been on cross-border settlement and the holding of equities. Beginning with the work of the Giovannini Group in 2001–03, various studies have sought to assess the barriers to cross-border activity and track the progress that has been made in addressing them.[26]

[26] See: The Giovannini Group (2001), 'Cross-Border Clearing and Settlement Arrangement in the European Union', November; The Giovannini Group (2003), 'Second Report on EU Clearing and Settlement Arrangements', April; European Post Trade Forum (2017), 'European Post Trade Forum Report', May; Advisory Group on Market Infrastructures for Securities and Collateral (2023), 'AMI-SeCo survey on remaining barriers to securities post-trade integration in Europe', November.

Historically, CSDs in the EU were established along national lines to provide a venue for the settlement and safekeeping of securities listed on the national stock exchange.[27] In addition to the EU CSDR, each CSD is subject to the securities laws and tax frameworks of their respective Member States. This has tended to act as a barrier to integration, although, as we discuss in section 4, it is now technically and legally feasible for a single CSD system to provide services catering to the specificities of multiple financial centres. Many of the larger EU CSDs are now part of pan-European groups (see Figure 3.1).

Figure 3.1 European CSD landscape



Note: The figure includes 27 EU CSDs authorised under CSDR, SIX SIS and Euroclear UK & Ireland. Settlement turnover includes equities, collective investment vehicles and fixed income securities.
Source: Oxera analysis of ECSDA data.

More importantly, as discussed in section 2.3 above, the economic characteristics of issuer CSDs and central settlement (in particular the requirements for universal reach and central record) mean that these parts of the value chain typically tend towards concentrated market structures with limited scope for competition.

[27] There are currently 27 CSDs authorised in the EU.

However, EU regulatory initiatives have provided the foundations to enable greater competition in CSD services.

First, the provisions within CSDR on issuer choice and passporting of CSD services enable a CSD based in one EU Member State to provide services in another Member State.[28] In 2023, as part of CSDR Refit, the EU implemented a further simplification of the passporting regime with the aim of reducing the time and complexity associated with obtaining permissions from a host Member State. These provisions make it easier for CSDs to offer their services across all EU Member States and have made issuer choice legally feasible. Similarly, MiFID II requires regulated markets to offer all their participants the right to designate the settlement system for transactions undertaken on that regulated market.[29]

Second, T2S provides a common platform for central settlement, used by participating CSDs (see Box 3.1). This platform has enabled the emergence of the investor CSD model described in section 2 above, in which investors, custodians, brokers or other intermediaries can use their preferred CSD as an alternative path to access the issuer CSD.

Box 3.1 TARGET2-Securities (T2S)

T2S is a common securities settlement platform owned and operated by the Eurosystem. It was launched in 2015 and facilitates Delivery-versus-Payment (DvP) settlement using central bank money for the cash leg of the settlement.

The volume of settlements processed by T2S has increased from around 87m in 2016 to around 203m in 2024. In 2024, equities accounted for the largest proportion (46.7%) of total settlement volumes.

[28] See Regulation (EU) 909/2014, Articles 23 and 49.
[29] Under MiFID II this obligation is subject to the following conditions: 1) such links and arrangements between the designated settlement system and any other system or facility as are necessary to ensure the efficient and economic settlement of the transaction in question; and 2) agreement by the competent authority responsible for the supervision of the regulated market that technical conditions for settlement of transactions concluded on the regulated market through a settlement system other than that designated by the regulated market are such as to allow the smooth and orderly functioning of financial markets. See Directive 2014.65/EU, Article 37(2).

T2S is not a CSD itself but provides a common technical platform for undertaking settlement, governed by a harmonised set of standards. The scope of T2S is restricted to facilitating settlement, meaning that it is not used for safekeeping or asset servicing.

Market participants can access T2S by holding an account in a CSD that is connected to T2S and a cash account at a Eurosystem central bank. As at 2025, 24 CSDs are connected to T2S.

The primary objectives of T2S were to reduce the complexity of cross-border settlement and to increase the efficiency of settlement of securities transactions in euros.

While not an explicit objective of T2S, the investor CSD model described in the previous section was itself enabled by T2S. This is because T2S facilitates cross-CSD settlement using the same rules (and incurring the same T2S fee) as intra-CSD settlement.

Intra-CSD settlement takes place between the account of the CCP and the account of the relevant clearing member (or settlement agent). This happens within the CSD, although is facilitated by the T2S platform. Cross-CSD settlement on T2S takes place between the account of the investor CSD and the account of the relevant clearing member (or settlement agent).

Source: Oxera, based on ECB (2007), 'Target2-Securities: The Blueprint', March; ECB (2025), 'TARGET Services Annual Report 2024', July.

When considering flow-based activities, T2S has also provided for potential user choice at the central settlement level of the value chain. This is because it allows for cross-CSD settlement (effectively a form of interoperability).

Although the majority of T2S settlement activity to date has been intra-CSD, this cross-CSD settlement functionality was an important aspect of the design of T2S. Euronext is currently one of the main users of cross-CSD settlement functionality in T2S. In 2024, the share of cross-CSD

settlements in T2S increased from 1.6% to 3.8% of total volumes due to the reorganisation of Euronext Clearing's activities in T2S.[30]

There are some limitations to T2S as the central settlement network for the full European market—in particular, not all EU CSDs are currently connected to T2S.

In section 4, we discuss how these regulatory initiatives have played an important role in enabling Euronext's CSD strategy.

3.3 What is the problem, and how to solve it

3.3.1 What do we mean by fragmentation?

Much of the debate surrounding post-trade market structure in the EU has focused on fragmentation. For example, in its communication regarding the Savings and Investments Union, the European Commission states that:[31]

'Intermediation in the EU's capital markets remains very fragmented along national borders, limiting efficiency and impeding market operators from harnessing the scale effect of a more integrated market.'

We note that this term has been deployed in different contexts and may have different meanings to different stakeholders. In relation to CSD services, fragmentation is commonly used as a shorthand to refer to the very large number of CSD legal entities in the EU, as well as the perception that (partly as a result of fragmentation) the costs to end-investors of settlement and custody in some EU financial centres and generally for cross-border transactions are high.

It is important to clarify the difference between on the one hand the concept of fragmentation at the level of trading platforms, and on the other hand at the level of settlement and custody.

From an economics perspective, fragmentation can lead to suboptimal outcomes for end-users for different reasons. Whether the root cause is on the demand-side or the supply-side is important when identifying potential policy solutions.

[30] ECB (2025), 'TARGET Services Annual Report 2024', July.
[31] European Commission (2025), 'Communication on the Savings and Investments Union', March, p. 12.

First, fragmentation may result in insufficient network effects (demand-side economies). As explained in section 2 above, settlement systems (and CSDs more generally) exhibit network effects when the value to a particular user increases as more users join the platform.

Second, fragmentation may mean that individual providers (with fixed costs) are too small to benefit from economies of scale (supply-side economies) resulting in high unit costs for users.

The objective of introducing competition at the trading platform level was to impose competitive pressure on the incumbent exchanges. However, although the introduction of competition was welcomed, there was a concern that *trading* fragmentation (i.e. a stock being traded on multiple platforms) could potentially result in *liquidity* fragmentation (i.e. a reduction in network effects), which would be to the detriment of end-users.[32] In others words, the primary concern from a public policy perspective was about suboptimal demand-side economies.

At the CSD level, the situation is somewhat different. A security is currently issued into a single issuer CSD, and all transactions in that security must settle in that CSD, either directly or indirectly via interoperable links (through T2S), or settle at a point further downstream. This downstream settlement could take place within the books of a custodian that itself holds an account in the issuer CSD (referred to as settlement internalisation), provided both buyer and seller are clients of the same custodian so that there is no net settlement position in the issuer CSD.

As a result, there is no equivalent concept of liquidity fragmentation in CSD services. This is an important point; put differently, provided the CSDs are connected to T2S, the fact that securities are issued and settled through different CSDs does *not* fragment the settlement and custody of those securities, because all trades in a given security ultimately converge on the same point of final settlement and custody.

So, in relation to settlement and custody, fragmentation (in the sense of each Member State having its own CSD) is related to economies of scale rather than network effects; fragmentation is a concern if economies of scale are not achieved. If each CSD operates below

[32] We note that *trading* fragmentation (i.e. a stock being traded on multiple platforms) does not necessarily result in *liquidity* fragmentation. For an explanation and analysis see: Oxera (2020), 'Primary and secondary equity markets in the EU', Report prepared for the European Commission DG FISMA.

efficient scale or replicates fixed costs unnecessarily, this may result in persistently higher fees for settlement and custody.

3.3.2 How to solve the problem of fragmentation?

This means that having multiple CSDs is in itself not an issue as long as each CSD operates efficiently and if competition ensures that economies of scale are achieved. Indeed, some policy discussions, including the 2024 Draghi report, have raised the idea of establishing a single EU-wide CSD to address fragmentation.[33] This is similar to the market structure in the USA, where CSD services are provided by the user-owned Depository Trust & Clearing Corporation (DTCC) and the Fedwire Securities Service.

However, economies of scale do not automatically mean the optimal market structure consists of a single provider. In modern economies there are relatively few industries where economies of scale are so significant that the market can only sustain one provider. On the contrary, many sectors that have historically been supplied by a single provider (e.g. fixed-line telecoms) have given way to market structures with multiple competing providers (e.g. mobile networks). This is partly as a result of technological change reducing the cost of building competing networks as well as changes to regulation and market design (e.g. interoperability arrangements). Moreover, in those industries where there is only one provider (particularly provision of utilities such as water), innovation and technological change plays significantly less of a role compared to trading and post-trading.

It should also be noted that the market structure in the US itself came about as a result of competition and consolidation over time, as DTCC acquired a number of competitor CSDs during the 1990s.[34] We note that, at the time, the US market did not benefit from interoperability arrangements such as those provided by T2S (which enable user choice in settlement even in the presence of demand-side economies).

From an economics perspective, full structural consolidation is not a necessary condition for achieving scale efficiencies (and not having competition between CSDs would come with various disadvantages, particularly in markets where service innovation and dynamic competition is relevant). What matters is not the number of legal entities, but whether the market allows efficient providers to grow,

[33] Draghi, M. (2024), 'The future of European competitiveness. Part B: In-depth analysis and recommendations', September.
[34] For more discussion of the history of DTCC, see: Rodengen, J.L. (2023), 'The Story of the Depository Trust & Clearing Corporation', DTCC.

reduce unit costs, and deliver high-quality services. These outcomes could be achieved by allowing competition to drive efficiency, so long as the market structure supports these dynamics.

This means that from a market design perspective, allowing effective competition is a sufficient condition for achieving efficiency, enabling the most efficient players to grow and potentially consolidate the market.

Accordingly, the concerns regarding fragmentation can be split into two (related) questions: 1) whether there is scope for further economies of scale at each level of the value chain; and 2) whether there is effective competition at each level of the value chain. Generally speaking, effective competition forces companies to become more efficient over time and reach an efficient level of scale. This means that where there is scope for further economies of scale and where effective competition is feasible, economies of scale can be achieved (and fragmentation can be reduced) by facilitating CSDs to compete.

As explained in section 2, these questions can be assessed at each level in the value chain:

- From an end-investor perspective, there are multiple routes of accessing central settlement systems and the relevant issuer CSDs. Global custodians already compete with each other to provide access in the most efficient way possible, so end-investors benefit from their economies of scale.
- Similarly, the common platform provided by T2S and links between CSDs allow investors or their intermediaries to use their preferred CSD to hold and settle shares issued in other CSDs. This is because the common platform of T2S means that the need for universal reach and a central record apply at the level of the network as a whole (and not to individual CSDs).
- Critically, despite the foundations now being in place, as described in section 3.2, competition for issuance and central settlement has not yet materialised for equities. In the following section, we discuss Euronext's CSD strategy, focusing on the impact it will have by improving user choice for central settlement and 'competition for the market' in issuance, and the wider impact this will have at each level of the value chain.

4 The future landscape—unlocking the potential for competition

4.1 Introduction

EU initiatives such as T2S and CSDR have already laid the foundations for greater efficiency and competition in CSD services. These measures have made it technically feasible for CSDs to offer services in multiple Member States and compete beyond their local market.

However, effective competition among CSDs has not yet materialised in practice. Most CSDs continue to operate largely within their national borders, and market participants have limited ability or incentive to switch providers. As a result, many of the potential benefits to end-users of competition, such as greater economies of scale and lower costs, greater innovation, and improved service quality, have not yet been realised.

In this section we explain how Euronext's strategy directly addresses this gap, by consolidating settlement activity and by improving choice for the issuance and central settlement of equities.

4.2 What is Euronext's strategy?

In 2024, Euronext announced its three-year strategic plan ('Innovate for Growth 2027').[35] As part of this strategic plan, Euronext's stated objective is to 'position Euronext Securities as the CSD of choice in Europe'.[36]

Euronext has since announced several strategic initiatives comprising the initial phase of its broader CSD strategy. These include:

- **Introducing settlement choice**—Euronext Securities will be designated as the default CSD for the settlement of Euronext Amsterdam and Paris equity and exchange-traded fund (ETF) trades and Euronext Brussels equity trades by September 2026 with market participants having the option to make their own choice about which CSD to use for settlement. Currently, settlement for the aforementioned markets typically takes place on Euroclear Netherlands, Euroclear France and Euroclear

[35] Euronext (2024), 'Strategic plan: Innovate for Growth 2027', November, https://www.euronext.com/en/innovate-for-growth-2027.
[36] Ibid.

Belgium, respectively (with some securities settling in Euroclear Bank).

- **Improving issuer choice**—Euronext intends to enter the market and compete to provide issuer CSD services in various EU Member States, beginning with France, Belgium and the Netherlands. In March 2025, Euronext transferred the issuance of its own shares from Euroclear France to Euronext Securities. The objective of this transfer was to demonstrate the technical feasibility of existing listed companies switching between issuer CSDs.
- **Innovation**—Euronext is developing a new common technology platform upon which its CSDs will operate (CSD convergence programme). Euronext Securities Copenhagen will migrate to the new platform in 2027, while Milan, Porto and Oslo will move by 2030.

As we will explain in more detail below, Euronext's strategy takes advantage of (and is only possible due to) the common platform structure provided by T2S (as well as the CSD links it has established). This also means that, while the initial phase of initiatives set out above is primarily focused on equities and ETFs traded on a subset of Euronext markets, the competitive model (underpinned by T2S and CSD links) could be expanded in the future to cover other financial centres and asset classes in the EU.

4.3 What are the potential market impacts?

In this section we discuss in more detail the potential market impacts of the three main strategic initiatives listed above.

4.3.1 Scale efficiencies

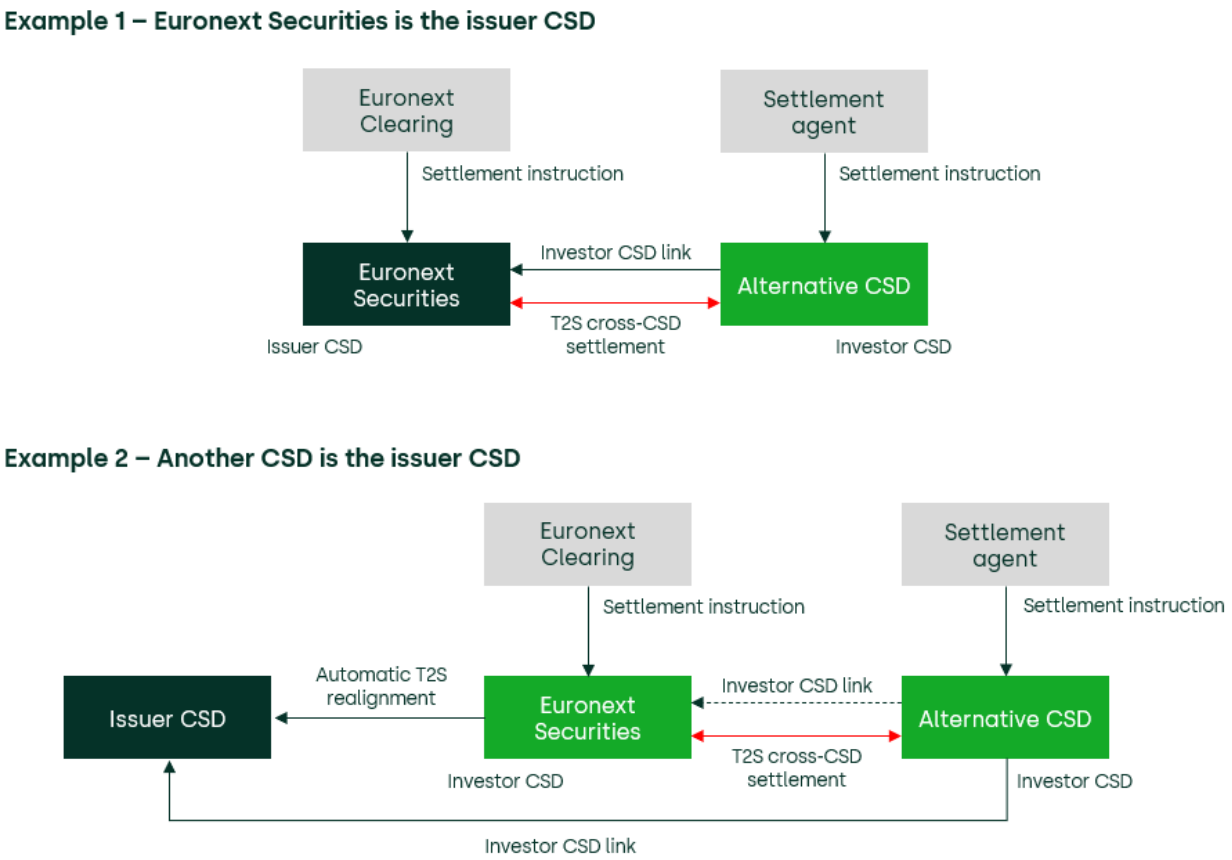
As explained in section 2.3 above, networks such as settlement systems are characterised by economies of scale. In the initial phase, Euronext intends to consolidate the central settlement activity for four equity trading venues on a single Euronext CSD settlement system—Euronext Securities. This will significantly increase the volumes processed by Euronext Securities and, in turn, is likely to lead to a reduction in average per-transaction settlement costs, as the fixed infrastructure costs are spread across a larger volume.[37] When expanding this model to cover

[37] Greater scale efficiencies due a consolidation of volumes on Euronext Securities are likely, in the short term, to be accompanied by a reduction in volumes settled in other CSDs, potentially increasing unit costs for these systems. The competitive process will incentivise these systems to respond and become more efficient over time. In the medium term, competition allows efficient providers to grow, reduce unit costs and ensures that economies of scale are achieved.

other markets and other types of securities, the economies of scale are likely to increase further.

Importantly, the interoperability provided by T2S means that under the new settlement model adopted by Euronext, users will be able to nominate an alternative CSD to settle in, provided that that CSD has the required links to Euronext Securities in T2S. In doing so, participants will not need to undertake any re-alignment of securities, i.e. moving the security between Euronext Securities and the issuer CSD (if Euronext Securities is not the issuer CSD). Figure 4.1 below gives examples of how this would work in practice.

Figure 4.1 Settlement processed via alternative CSD



Note: Dark green boxes represent issuer CSDs and light green represent investor CSDs. Although not shown above, in the scenario where the alternative CSD is the issuer CSD, the process would be a mirror of Example 1, i.e. settlement would be facilitated by Euronext Securities acting as an investor CSD in the alternative CSD. In Example 2, settlement could either take place via the alternative CSD acting as an investor CSD to the issuer CSD, and T2S automatic realignment taking place in the issuer CSD (the solid lines), or via the alternative CSD acting as an investor CSD in Euronext Securities (the dashed line). In Example 2, if the issuer CSD is not in T2S, then there is no automatic realignment.

Source: Oxera, based on information provided by Euronext Securities.

In practice, many of these links exist already between CSDs (although the network of links is far from complete). For example, Table 4.1 below lists the active links in place with Euronext Securities and other EU and global CSDs.

Table 4.1 Euronext Securities CSD links

CSD	Investor CSD link (i.e. account held by Euronext Securities in other CSD)	Issuer CSD link (i.e. account held by other CSD in Euronext Securities)
Bank of Greece	Yes	No
Clearstream Banking AG (Germany)	Yes	Yes
Clearstream Banking S.A.	Yes	Yes
Depository Trust Company (USA)	Yes	No
Euroclear Bank	Yes	Yes
Euroclear Belgium	Yes	No
Euroclear France	Yes	Yes
Euroclear Netherlands	Yes	No
Euroclear UK & Ireland	Yes	No
Iberclear (Spain)	Yes	Yes
National Bank of Belgium	Yes	No
OeKB CSD (Austria)	Yes	No
SIX SIS (Switzerland)	Yes	No

Note: The table includes only direct CSD links. Additional indirect or relayed links to other CSDs may exist (i.e. via a third CSD or custodian acting as an intermediary).
Source: ECSDA Members Database.

In other words, by providing for cross-CSD settlement, T2S allows for competition between providers of central settlement, despite the need for universal reach and a single record at the network level. This competition will benefit end-users in terms of choice, but also in ensuring that the scale economies on Euronext Securities are passed on to end-investors in terms of lower settlement fees.

While it is likely that end-investors will benefit from increased scale efficiencies within Euronext Securities, we note that Euronext is not the only player offering trading and clearing in Euronext-listed equities. For

example, trading in Euronext-listed equities takes place on a range of pan-European venues, including Cboe, Aquis, and Turquoise.

Operators of other trading venues and CCPs, as well as OTC trading participants, will also have the option to designate Euronext Securities as the default settlement system for trades executed and/or cleared on their platforms. If these other platforms also choose to switch to using Euronext Securities as the default system (or if their clients choose to settle in Euronext Securities), then the scale efficiencies we refer to above are likely to increase further.

4.3.2 Competition for issuers

The economic characteristics of issuer CSDs mean that, historically, there has been limited competition at this level of the value chain. While companies have a choice to list at different exchanges in the EU, the decision of where to list is influenced by a range of factors (beyond post-trading services) and once an exchange has been chosen, there is currently in practice virtually no choice of issuer CSD.

Euronext entering the market to compete directly with incumbent issuer CSDs means that listed companies in several Member States will now have a choice of provider for issuance. Competition between issuer CSDs will be in the form of 'competition for the market', where CSDs compete to be the single issuer CSD for a given listed company (i.e. there is no multi-homing required).

Two-sided networks (such as issuer CSDs) have generally skewed pricing for each side of the network. Typically, issuers pay low (or zero) fees for securities issuance. Instead, Euronext will compete to attract issuers based on its service proposition and the overall reduction in execution costs for investors through scale economies. It has been well-established in the economics literature that investors who pay lower fees to acquire or dispose of a security require a higher lower return from holding it, and thus bid the price of the asset up; this ultimately decreases the cost of capital for listed companies.[38]

[38] See Domowitz, I. and Steil, B. (2001), 'Innovation in Equity Trading Systems: The Impact on Transactions Costs and Cost of Capital', in R. Nelson, D. Victor and B. Steil (eds), *Technological Innovation and Economic Performance*, Princeton University Press. They show that higher (lower) transaction costs for investors are associated with lower (higher) asset prices. Investors who pay higher (lower) fees to acquire or dispose of a security require a higher (lower) return from holding it, and thus bid the price down (up); this ultimately increase (decreases) the cost of capital for listed companies.

This multi-sided network effect is particularly relevant when considering custody and asset servicing.

As we have explained above, T2S enables competition for central settlement by providing a common platform across CSDs. This means that the requirement for universal reach and a central record no longer apply at the level of the individual CSD but at the level of all CSDs participating in T2S. Ultimately this means that investors can have a choice over which CSD they settle in.

Custody and asset servicing are not within the scope of T2S. Investors can access the custody network for a given security either by participating directly in the issuer CSD (at the 'core' of the network) or by using a custodian or investor CSD. While there is already competition to provide access to the 'core' of the network, investors cannot choose the issuer CSD. The chain of custody must ultimately converge on the issuer CSD, which will charge for the custody and asset servicing it provides to its direct participants.

However, by providing *issuers* with a choice of CSD, Euronext's entry will introduce 'competition for the market' in issuance. In turn, this will help to bring competitive pressure in the market for custody and asset servicing because, ultimately, issuers benefit from lower execution costs, and are likely to choose the issuer CSD that provides the lowest costs to investors.

4.3.3 Dynamic competition

In every industry, technology infrastructure will require upgrading over time both to keep up with increased performance demands, and to meet new service requirements of users. This is particularly true for post-trading services, where greater automation of manual processes brings significant benefits to end-users (lower operational risk and reduced costs).

As explained in section 2.3, networks may compete to attract users based on price, but also based on service quality and innovation. In other words, incentivising investment in new technology is a key benefit of competition.

Ultimately, whether the incumbent or new entrant is better placed to be successful in 'dynamic competition' depends on the specific technology in question. Incumbents may have an advantage over challenger firms if, for example, they can more accurately predict customers' future service needs as a result of having access to a larger customer base. Conversely, challenger firms often have an ability to design

infrastructure from scratch, with less reliance on existing legacy systems.

In the post-trade context, one of the elements of Euronext's strategy is the development of a new common technology platform upon which the CSDs within its group will operate. The two potential types of benefit to end-users are as follows.

- New services for users of Euronext Securities—for example, as part of the common technology platform, Euronext is implementing a single corporate actions service across Euronext Securities. The new service will allow users to manage their corporate actions across all the Euronext CSDs via a single interface, which should deliver operational efficiencies for users.
- Facilitating downstream service innovation—in network industries, investment in new technology at the 'core' of the network can also enable service innovation downstream (i.e. improving the service offering of intermediaries).

4.4 The future competitive landscape

The implementation of Euronext's strategy will result in the introduction of competition and choice for central settlement, top-level custody and issuance. This means that for the first time this part of the market can fully enjoy the benefits from a competitive process in terms of improvements in efficiencies, competitive fees, quality and innovation.

Other CSDs could respond to Euronext's offering by improving their own service quality and efficiency, investing in innovation, or expanding their reach. Over time, this competitive pressure can lead to convergence towards more efficient pricing and better user outcomes, particularly for cross-border investors who currently face higher costs and operational frictions. In other words, competition itself, not just consolidation, is the mechanism through which fragmentation and inefficiency can be addressed.

A helpful analogy can be drawn from the development of other industries, such as telecommunications or aviation. In the early stages of liberalisation, national markets were typically served by one domestic operator, e.g. a state-owned telecoms provider or national airline. Over time, as regulatory and technical barriers were removed, new entrants began offering cross-border services. This shift forced incumbents to modernise, improve quality, and lower prices. Consumers benefited not just from having more choice, but from the knock-on effects of competition on all providers.

A similar pattern is now beginning to emerge in CSD infrastructure, with Euronext's strategy playing a key role in catalysing this transition.

As explained above, the development of CSD links (facilitated by T2S) has played a critical role in enabling this new model of competition to emerge in CSD services. However, not all EU CSDs are connected to T2S and the network of interoperable CSD links is not complete, particularly with respect to smaller EU financial centres and some CSDs.[39] Further work may be needed to develop these links to allow end-investors in these financial centres (or cross-border investors) to benefit from competition and scale efficiencies.

Moreover, there is still considerable progress to be made in addressing barriers to cross-border investment caused by differences in national securities and corporate laws and market practices, particularly those pertaining to asset servicing.[40] It is likely that further coordinated effort between regulators and market participants towards harmonisation and standardisation in this space will further facilitate competition.

[39] ESCB (2025), 'ESCB reply to the European Commission's targeted consultation on integration of EU capital markets', June, Section 2.3.
[40] Ibid.

Contact

Reinder Van Dijk
Partner
+44 (0) 20 7776 6614
reinder@oxera.com

oxera.com