



Europe's New Post-Trade Infrastructure Rules

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After more than a decade of indecision, the EU is finally now set to implement a consistent regulatory architecture for clearing and settlement. Following the agreement on a European market infrastructure Regulation (EMIR), the European Commission has proposed harmonised rules for centralised settlement depositaries (CSDs), while the European Central Bank (ECB) is moving forward with its plans for a central eurozone settlement engine. After the regrettable circumvention of the 2006 Code of Conduct, the EU will now have a consistent framework allowing cross-border provision of services by and competition among clearing and settlement entities in the EU, with rules ensuring open access and interoperability. This situation will bring about a sea change in the sector, leading to further consolidation at European level, as we have also witnessed in the area of trading platforms since the adoption of the investment services Directive in 1993 and MiFID (Markets in Financial Instruments Directive) in 2007. But important challenges remain in striking a balance between market efficiency and financial stability.

Introduction

The move to require central clearing of derivatives trading is a response to major failures on non-collateralised positions in bilateral OTC (over-the-counter) derivatives trading, mainly with the US group AIG, which sparked systemic disruption across the globe and led to a costly bail-out by US taxpayers in 2008. The need to put in place effective safeguards to deal with counterparty risk in derivatives trading was a key element of the London and Pittsburgh G-20 meetings. The Pittsburgh G-20 decided that “all standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. Non-centrally cleared contracts should be subject to higher capital requirements.”¹ In addition, it was decided that OTC derivatives contracts should be reported to trade repositories. The opaqueness surrounding bilateral net exposures of systemically important financial institutions (SIFIs) induced risk aversion and froze the interbank market, with broader implications for credit markets at global level (Valiante, 2010).

¹ Leaders Statement, 2009 G-20 Pittsburgh Summit, 24-25 September 2009, p. 9.

Together with the reinforcement of bank capital, mandatory central clearing of OTC derivatives is one of the most important shifts brought about by the financial crisis, although many questions yet remain about their impact. The capacity of the infrastructure to clear millions of transactions and to facilitate collateral and counterparty risk management in order to minimise adverse effects on credit availability is only part of the challenge. It may also be necessary for competition authorities to more deeply scrutinise the effects on market structure, due to the unavoidable consolidation process to reach critical mass. In addition, there is the objective to create centralised repositories for all OTC derivatives trades. Initiatives in the settlement arena, by both the European Commission and the ECB, were already on the agenda well before the financial crisis hit, but the resolve to go for harmonised rules and a single settlement engine crystallised as a result.

This paper analyses three components of the new post-trade infrastructure measures: 1) the regulatory framework for and supervision of central counterparties (CCPs) under the new EMIR legislation, 2) the authorisation requirements of trade repositories and 3) the draft CSD Regulation and the progress with the ECB's Target 2 Securities (T2S)

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project. It then discusses the impact of the new rules, and argues that, analogous to the unexpected impact of MiFID on trading infrastructures, a similar EMIR revolution may be on its way. This should allow us to see the effects of the new rules from another perspective.

The anatomy of EMIR

Under the new regulation, CCPs will play a central role in the financial system, but their impact will primarily affect only a few players in the market. The OTC derivatives market on both sides of the Atlantic has so far been dominated by nine players, which control more than 80% of the market (Valiante, 2010). The explicit and implicit costs of participating in CCPs and the resulting impact on their profitability are key factors for these players, as well as the related reduction in systemic risk. The question remains whether risk will be better controlled when ‘multilateralised’ and internalised within a limited number of CCPs, compared to the former regime of essentially bilateral exposure.

For central clearing to occur, much depends on the eligibility of OTC derivatives, which is assumed to account for around 2/3 of the market, and the governance and control of CCPs.² For instance, off-loading contracts that are deemed ‘liquid’ (in line with the current ESMA draft Regulatory Technical Standards on eligibility requirements³) may leave bilateral derivatives markets with ‘tail-risk’ exposures, which can significantly affect markets and increase the risks to be assumed by financial institutions. Inevitably the cost of bilateral trading of complex products that cannot be cleared on highly standardised platforms will increase.

In its final text, EMIR remains very much at the level of principles in determining the eligibility of derivatives for central clearing and the prudential requirements.⁴ As shown in Table 1, however, the text has doubled in length compared to the Commission’s draft, mainly as a result of the addition of many exemptions from the scope of the Regulation (namely hedging and intra-group transactions, foreign exchange and pension funds) and clarification of third-country provisions. Moreover, much remains to be done in implementing rules: 40 of the 77 items on ESMA’s

² Today, some 39% of OTC derivatives are centrally cleared (see Deutsche Bank, 2012, p. 10).

³ In assessing the eligibility of OTC derivatives, ESMA takes as guiding principles (Art. 6.1(a)(b), p. 79, ESMA, 2012), the legal and operational standardisation (common legal documentation and automated post-trade processing) and the volumes and liquidity testing (in case a counterparty would default).

⁴ Regulation (EU) No. 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, OJ L 201 of 27.7 2012.

2012 work programme concern EMIR.⁵ This proliferation of rules is a trend that can be observed with other post-crisis financial regulation measures; the question remains what their long-term impact will be.

Table 1. A comparison of the original EMIR proposal and final draft

	Number of articles	Articles open to implementing provisions	Number of words
Original Commission proposal	72	20	19,465
EMIR final level 1	91	24	43,101

Non-financial corporations and pension funds are exempt (for a three-year transition period) from the scope of the Regulation. This former exemption was already on the agenda well before the text was formally proposed, and has been maintained, albeit with the maintenance of a clearing threshold. The same applies in the US under the Dodd-Frank bill, which is only expected to come into effect in the second half of 2013. The exemption for pension funds is regarded as a major success of lobbying efforts with the European Parliament, but it does not apply in the US.

The exemption of non-financial corporations from the scope of the regulation applies below a clearing threshold of €1 billion for credit and equity derivatives and €3 billion for currency, interest rate, commodity and other OTC derivatives (Art. 10, EMIR; Art. 10, p. 82, ESMA, 2012). In addition, transactions that reduce risks directly related to the commercial or treasury-financing activities of non-financial entities, the so-called ‘hedging transactions’ (Art. 10.3, EMIR), will not qualify for the clearing threshold. Following ESMA standards (Art. 9.1 (a)(b)(c), p. 82, ESMA, 2012; based on Art. 10.3, EMIR), ‘hedging’ may assume a broad meaning, i.e. all transactions that are done in order to indirectly or directly mitigate price risk, or are compliant with IFRS standards (Art. 3, Regulation No. 1606/2002).

The exemption of pension schemes from central clearing is less clear cut, as it is only applicable for a three-year transition period. Representatives of pension schemes successfully argued that the margin requirements of CCPs would reduce returns for future retirees. However, pension schemes will be subject to reporting obligations and bilateral collateralisation requirements. “The ultimate aim is, however, central clearing as soon as this is tenable” (recital 26, EMIR). This derogation also applies to group insurance

⁵ One article may include more than one reference to implementing provisions.

schemes, provided they are ring-fenced from other activities within the insurance group (Art. 2.10(c)).

Bilateral contracts that are not centrally cleared are subject to strict risk-management procedures and operational requirements (such as portfolio reconciliation and affirmation/confirmation systems).⁶ The value of outstanding contracts shall be marked-to-market on a daily basis, except if the market is inactive (i.e. a quoted price is not readily available or fair value estimates are too divergent (Art. 15, p. 85, ESMA, 2012). ESMA would then need to refer to marking-to-model criteria (Art. 16, p. 85, ESMA, 2012), using 'accepted' economic methodologies.

Authorisation and operational requirements for CCPs

EMIR follows a dual approach for the authorisation of CCPs. EU-based CCPs are authorised by the relevant authorities in their home country. Authorised third-country CCPs can be recognised to do business in the EU by ESMA, subject to an equivalence decision by the European Commission and an ESMA cooperation agreement with the respective home supervisory authority on the exchange of information (Art. 25.2(c)) and an 'equivalent' system of anti-money laundering and terrorist financing rules.

Once the initial conditions have been met, clearinghouses will be able to offer their services freely within the EU, after notifying the host-country authorities. So far, further to MiFID (Art. 34), investment firms could have access to host-country clearing and settlement services, but the latter could not provide their services freely across borders, which is what EMIR and the draft CSD regulation are now putting in place.

The basic prudential and business conduct standards for CCPs today comprise:

1. An 'adequate' capitalisation of at least €7.5 million, 'proportional' to the risk taken by the CCP (Art. 16),⁷
2. Exposure management, margining rules, default fund, collateralisation and investment policy (Arts 40-47) and

3. Governance and conduct requirements (segregated and portable individual client accounts, conflicts-of-interest rules, outsourcing policy) (Arts 33-39).

These rules, and above all those under item (2), are key elements ensuring the correct functioning of CCPs, but they also serve to assuage the doubts that remain among specialists regarding the resilience of CCPs. No less than 11 out of 41 EMIR items in ESMA's 2012 regulatory work programme relate to the substantiation of these prudential rules.

As regards capital requirements for CCPs, another body, the European Banking Authority (EBA) is required to draft regulatory technical standards (RTSs), which were published in September. Regulatory capital will be required to cover gross operational expenses for winding down and restructuring of CCPs. On top of this, capital will be required to cover operational, legal, and non-covered credit, counterparty and market risks (Art. 3-6, EBA, 2012). Calculations will be done in accordance with the 'risk-weighted assets' methodology of the EU's two main capital requirements Directives (2006/48/EC and 2006/49/EC). LCH Clearnet (2012) has estimated the need for additional capital up to €375 million. As a consequence of market infrastructure surveillance, access to central bank liquidity, and capital requirement regulation, CCPs fall under the supervision of three European authorities – ESMA, EBA and the ECB – apart from the local authority.

The question originally raised by the ECB of where CCPs should be located (within or outside the main currency area) is still pending. Where a CCP is located relates to the situation in which a CCP fails and needs central bank liquidity support to keep the financial system functioning in an orderly manner. Who should be in charge in case of a liquidity crisis: the central bank where the CCP is headquartered with its main operations, or perhaps the central bank where the main financial entities of the CCP are based or the main currency cleared? In effect, EMIR cannot force the European Central Bank and its network (ESCB) to intervene, but recitals 11 and 53 emphasise the ESCB's important role in licensing, supervising and supporting the clearing and settlement system. ESMA had to work very closely with the ECB in drafting the above-mentioned regulatory technical standards.⁸ As a result, CCPs may have access to central bank liquidity and will settle in central bank money. In this context, it should be recalled that the UK Treasury has brought

⁶ Another important service is compression, which allows netted positions to be further reduced (early termination) against each other at an agreed mark-to-market valuation of the contract (Art. 3 RM, ESMA, 2012).

⁷ It should be proportional to the "risk stemming from the activities of the CCP" (recital 48, and Art. 16.2). This is a very open clause, which – for CCPs licensed as bank – could also create conflicts with current capital requirements. The European Banking Authority (EBA) will need to set regulatory technical standards for this. CCPs could also be subject to other regulations governing capital requirements.

⁸ It should be recalled that the discussions on this item between the ECB and CESR, the predecessor of ESMA, have a long history. They started in 2001 and broke down in 2005 for a period of about three years until the EU Finance Ministers were mandated in the context of the financial crisis to resume their work, leading to the ECB-CESR recommendations of June 2009 (see <http://www.ecb.eu/paym/pol/secover/escbcesr/html/index.en.html>).

the ECB before the EU Court of Justice on grounds that its location policy rules requiring clearinghouses that deal with more than 5% euro-based transactions to move within the eurozone, violate single market rules.

Finally, aside from the moral hazard posed simply by the involvement of the ECB in the supervision of a CCP, it is also unclear what form a potential intervention by a central bank would take in the event of a CCP failure. Would the ECB intervene to inject liquidity (as capital or credit line) in a CCP even if the problem was caused by the counterparty default of a US legal (whether the clearing member is a subsidiary or a branch)? This situation could be highly controversial. Three steps are possible in this case: 1) the central bank where the CCP is operating could step in and directly inject liquidity in the CCP, regardless of the composition and nationality of its clearing members (location then plays a key role), 2) the central bank of the main currency traded on the CCP could inject liquidity directly in the CCP or 3) MoUs among central banks could actually regulate a common intervention based on the percentage of the default fund held by clearing members operating in the central bank's jurisdiction or under its supervision. For instance, if US clearing members' subsidiaries hold only 10% of the default fund, in case of liquidity problems, the FED would only inject liquidity equal to 10% of the total amount requested.

Open access and interoperability

For cash securities (recital 73),⁹ CCPs may enter into interoperability arrangements, provided certain criteria are met (Arts 51-53). These include interoperability with other CCPs and non-discriminatory data access to trading venues and settlement systems (Art. 51.2). ESMA will need to report by the end of 2014 on the appropriateness of the extension of these interoperability arrangements to non-cash securities. In any case, counterparties can voluntarily enter into a bilateral interoperability agreement for non-cash securities, to be agreed by the authorities.

The interoperability agreements will be approved by national authorities, but ultimately ESMA can only issue a non-binding opinion (reconsidering clause) in case disagreement persists between the financial authority granting/denying approval and the financial authority where the CCP is located (Art. 54.3). This lack of power may affect the implementation of this requirement if the dispute among national authorities is not resolved by ESMA's moral suasion, especially if ESMA perceives that the national authority has not correctly interpreted the requirements set by the regulation.

⁹ It is worth noting that EMIR defines cash securities as "transferable securities and money market instruments".

Arts 7 and 8 and recital 34 of EMIR set a 'reverse' open-access principle, also included in the Markets in Financial Instruments Regulation (MiFIR, Arts 28 and 29), but they are applicable to all financial instruments.¹⁰ As a result, a competing CCP would obtain access to data feed from the incumbent trading venue to offer clearing services in competition, and, vice-versa, the incumbent CCP must agree to clear transactions executed in different trading venues, to allow competing trading venues to compete with the incumbent trading platform on reasonable terms. Access to these services should be non-discriminatory, and it should not create the need for interoperability or liquidity fragmentation.¹¹ In case one of these two conditions obtain, the incumbent can deny access. Even if the 'liquidity fragmentation' condition has been clearly defined by ESMA, the requirements establishing when open access may need interoperability are unclear, which may leave space for market players to claim an arbitrary need to be interoperable in order to deny access (whether this is actually true or not).

In addition, it is difficult to imagine CCPs competing without interoperability agreements in place, as this would imply fragmenting pools of collateral into vertical infrastructures and ultimately increasing costs. The risk of locking the system into separate pools of collateral that cannot be consolidated may drastically reduce the efficiency (and ultimately the stability) of the financial system. However, it is difficult to achieve interoperability for derivatives because of the varying nature and characteristics of these transactions. Against this background, technologies in this area are quickly progressing, and competition among CCPs will certainly escalate in the near future around the provision of services that can improve the management of collateral and generate important savings for end-users, ultimately leading to a more interoperable environment.

Trade repositories

A second part of EMIR deals with the registration and operation of trade repositories (TRs). These entities centrally collect and maintain the records of any derivative contract that has been concluded and any modification or termination of the contract. All derivative contracts must be reported to a trade repository within one business day from the day of execution (T+1). This applies to both cleared and non-cleared trades, listed and OTC derivatives and to outstanding and pre-enacted swaps. This report must

¹⁰ According to the current version of the text under discussion in the European Parliament.

¹¹ Following ESMA (Art. 8, p. 81, ESMA, 2012), there is no "liquidity fragmentation" if there is at least one CCP in common (after the competing CCP is allowed to enter) and there are already clearing arrangements established by the CCP.

specify the parties to and the main characteristics of the contract.

So far, limited information is available on the outstanding OTC derivatives contracts, and for existing contracts, no harmonised international standards were in place. Opacity in derivatives markets caused disruptive adverse selection effects in the interbank market, following Lehman Brothers' bankruptcy. Only one TR, the US DTCC, had been in existence before the financial crisis, covering only credit derivatives. Several new initiatives, however – such as the Regis TR (a joint initiative of Iberclear and Clearstream) – have been launched in the meantime and have recently started operations.

Trade repositories will be authorised by ESMA, and thereby become, after rating agencies, the second specific entity to be supervised exclusively by ESMA. In return for performing this function, ESMA will charge fees to the repositories, which should fully cover its expenses. ESMA may delegate supervisory tasks to the member state authorities. Trade repositories from third countries may also be recognised, as soon as an equivalence agreement with the country in question has been concluded (Art. 75). As for other new EU directives (e.g. Alternative Investment Fund Managers Directive), the use of an 'equivalence' regime raises questions concerning which criteria will be used to determine equivalence. An excessively strict equivalence regime would ring-fence EU markets and affect linkages with non-EU counterparties, while too lax an equivalence regime would create space for regulatory arbitrage.

For a proper supervisory framework to work, ESMA needs to have the powers to conduct general investigations, do on-site inspections of and eventually impose fines on trade repositories. This is a fairly new concept in a European context, although it also already appears in the rating agencies Regulation. Data collected by TRs should be made available to the relevant European and national supervisory authorities.

Notwithstanding the formal obligation to report, the market for TRs may remain small and highly concentrated. This market is, like the market for market data, global, with high economies of scale and only a few dominant players. TRs should be interconnected and exchange information, with regulators defining mandatory formats ensuring that TRs are capable of communicating with each other (Benito, 2012). It remains to be seen whether this will actually happen, as the market data world has been grappling with this issue for a long time, without much progress. Commercial interests in setting joint standards and exchanging information may be minimal, which is fully recognised in the EMIR text (recital 42). To counter this tendency, TRs should provide information on non-discriminatory terms, while regulation should clearly define how much

information TRs can retain for commercial purposes (analytical data services) and how much should be disclosed to the market. The presence of multiple TRs, adopting the same standards and sharing information in order to reconcile a global picture of the market can promote further competition among them in the provision of additional services to support middle-office operations (e.g. confirmation) and collateral services (e.g. compression and real-time risk management), or just reporting services to regulators. In addition, TRs could also collect data in other less transparent areas, such as securities lending and repo operations, where transparency today is based on surveys and voluntary bilateral agreements between dealers and data vendors.

The CSD proposal and T2S progress

Following EMIR, the single license facilities should also apply to central securities depositories (CSDs), which hitherto has only been subject to a self-regulatory Code. While the Code made some progress in the area of price transparency, hard-core issues such as interoperability and service unbundling have not advanced, as too much was at stake for the operators. The new draft Regulation defines settlement, the settlement cycle (T+2) and settlement discipline, with penalties for settlement failures. It requires transparent access criteria, price and fee transparency, and interoperability between CSDs and with other infrastructures, such as CCPs (chapter IV). An 'equivalence' regime for recognition to provide services in the European Union, as for EMIR, applies to third-country CSDs.¹²

The CSD proposal establishes for the first time harmonised prudential rules for CSDs in the EU. Although general global standards have existed since 2002, and were recently updated by the Committee on Payment and Settlement Systems (CPSS) and the International Organisation of Securities Commissions (IOSCO) in a report entitled "The principles for financial market infrastructures",¹³ the EU had so far left this to the member states, which has hampered cross-border provision of settlement services. The proposal sets harmonised organisational requirements, conduct-of-business rules, rules for other CSD services, prudential standards and requirements for links with other CSDs. Authorisation is in the hands of the member states, with ESMA placed in charge of maintaining a CSD register. The draft also requires member states to provide for a harmonised minimum level of administrative sanctions (including

¹² Proposal for a regulation of the European Parliament and of the Council on improving securities settlement in the European Union and on central securities depositories (CSDs) and amending Directive 98/26/EC, 7 March 2012.

¹³ For details, see press release of the Bank for International Settlements, 16 April 2012 (<http://www.bis.org/press/p120416.htm>).

authorisation withdrawals) to be applied in case of breaches of the Regulation to legal and natural persons (Art. 65).¹⁴ In light of the recent banking union project, authorisation of and sanctions against CSDs would fit more logically with the ECB, all the more so in the T2S context.

In addition to specific operational requirements, such as daily reconciliation of the number of securities with the accounts, CSDs should segregate accounts of each participant and enable participants to segregate clients' individual accounts (Art. 39). Cash settlement services in commercial bank money must be provided through a separate credit institution, as they are classified in the annex of the proposal as 'banking-type' ancillary services. In effect, according to Art. 52, the provision of banking-type ancillary services by CSDs must be carried out through a separate credit institution, although an exception can be made in a reasoned request by the competent authority to the European Commission, an exception that was deleted in the draft European Parliament report.¹⁵ This provision attempts to avoid risk concentration and limits the possibility that conflicting functions and interests will arise by allowing a single entity to execute both pure settlement and pure banking services. The separate legal entity, however, can be set up within the same group. Authorities may even designate more than one credit institution in case the concentration of risks is too high. Fears that securities accounts will be misused to support banking activities have emerged after recent losses of clients' assets due to banking activities carried out by the same entity, such as securities lending. Moving these services under a different legal entity will provide a clear separation between pure settlement services and banking activities. At the same time, in combination with open-access rules, this move may increase competition with other entities providing value-added services across markets and CSDs.

As CSDs will have to look downstream to expand their services with the arrival of T2S, they will come even more in direct competition with custodian banks, as well as with firms providing middle-office services. In this context, the current phrasing of the provision regarding banking services may cause uncertainty for CSDs, at least in the short-term, on the costs and future of their vertically integrated business model. The Commission may argue that this is only a legal cost, but besides additional administrative and regulatory

¹⁴ Administrative fines can go up to 10% of total turnover of a legal entity or to 10% of total income of a natural person or to €5 million. The simultaneous use of a 10% threshold in some countries and a fixed €5 million threshold in others may still maintain substantial divergences among EU countries.

¹⁵ European Parliament, Draft Report on the proposal for a regulation of the European Parliament and of the Council on improving securities settlement in the European Union and on central securities depositories (CSDs) and amending Directive 98/26/EC, Rapporteur Kay Swinburne.

costs (i.e. separate capital requirements), there is the issue of lost economies of scale and scope resulting from splitting activities across several entities. The question arises whether similar rules will *ceteris paribus* apply to custodian banks providing other banking-type ancillary services.

By mid-2012, almost all eurozone CSDs and six non-eurozone CSDs, including the Swiss CSD SIX, had signed up to T2S or announced their intention to do so, thereby allowing the ECB to have a moderately favourable business case to go ahead.¹⁶ According to the 2008 impact assessment, settlement costs could decline by approximately 30% if all eurozone countries were to join (see Lannoo & Valiante, 2009). This will further decline when additional non-eurozone countries sign up, with the Nordic countries, part of the Euroclear group, already having announced their intention to join as well. The Bank of England has indicated, however, that it will not participate in the platform for sterling-denominated settlements.

The framework agreement for those CSDs joining T2S, published in October 2011, runs over 700 pages, containing 54 articles, divided over 7 chapters. It contains amongst other things the pricing for the settlement services of T2S, which has constantly increased after the first estimates, weakening the original business case made by the ECB (i.e. an important reduction in settlement costs). The prices are now expected to vary between €0.40 and €0.60, which are on the higher end of the 2008 ECB business case (scenario 1 assumes all eurozone countries participate). Additionally, as we pointed out in our earlier work (Lannoo & Valiante, 2009), T2S will also force efficient business models to charge more than what they actually charge today as they have 'agreed' to migrate to the T2S infrastructure.

Despite the uncertainty surrounding the costs and the question of who ultimately bears the operational risks, the EU institution-driven settlement platform is trying to succeed where market-driven solutions have not been able to progress at the same pace due to conflicting commercial interests, i.e. the creation of a harmonised framework for securities (and cash, with T2) settlement infrastructure. As a result of this initiative, competition between CSDs and providers of related services (e.g. global custodians) will become harsher on value-added services and potentially on middle-office services as well, while small national players will gradually find themselves pushed out of the market.

The EMIR revolution?

The new rules, as always, provide costs and benefits for the market. As with MiFID after the 2004 adoption, much debate focused on costs, but the dynamic effects

¹⁶ See ECB press release, 3 July 2012.

of the new rules on technological investments to compete in the new market environment are often underestimated. For end users, whether financial or non-financial institutions, the costs of collateral will certainly increase, at least in the short term – the Tabb Group (2011) estimated the need for collateral to be around \$2 trillion.¹⁷ Over \$3.7 trillion collateral is in circulation today and 84% of all OTC derivatives have collateral agreements in place (ISDA, 2012), but uncollateralised OTC derivatives exposure is still a considerable part of the market.¹⁸ Roughly \$100 trillion of OTC derivatives contracts (as notional value) do not have any collateral agreement in place, but collateralisation is growing at a fast pace. The creation of a modern and flexible infrastructure that optimises the use of collateral and allows offering diversified services for end users is essential for this process to succeed. This situation, on the one side, creates a lot of opportunities for the industry to develop, through new technologies, competitive services such as real-time risk management services, or cross-asset classes clearing. On the other side, it clashes with commercial interests that impede initiatives to make collateral pools more fungible to promote interoperable clearing platforms with other CCPs (mainly through cross-margining agreements).

By setting risk-management procedures among CCPs and instituting strict day-to-day supervision under the ESMA-ECB umbrella, an interoperable environment would certainly deliver better collateral management and huge savings for end users, a key element for the creation of a truly pan-European infrastructure. EMIR is very timid in this area and it sees interoperability as a threat for the stability of the CCP (interoperability will only be limited to 'cash securities'). However, the lack of fungible collateral pools would itself be a threat to the efficiency of the market as it could create costly sealed CCP operations, which are going to increase the need for collateral. In effect, two CCPs on both sides of the same transaction may ask for the same amount of collateral, which will represent a costly duplication. In an interoperable framework, once risk-management procedures are fixed and well-supervised, competition among CCPs would move to value-added services linked to collateral management, inter alia. In any case, EMIR will lead to investments in new clearing technologies, as the current clearing technology is not scalable or flexible enough to handle the changes that are coming (Tabb Group, 2011). As a result of better technology, moving potentially to almost real-time clearing will increase transaction volumes and liquidity, as well as the size of the pie for market participants that enter the arena. Shortening settlement

cycles will also free up more capital, which can then be redeployed to improve market efficiency.

In addition to the implications for clearing and CCP business, the cost of membership in and reporting to TRs should also be considered. EMIR, in effect, offers huge opportunities for TRs too, and the expected volume increase in traded and cleared derivatives will further stimulate their growth. Existing organisations in clearing, trading and data reporting may benefit from this change, provided they make the necessary adaptations.

For this to happen, competition between CCPs will need to be strengthened, and interoperability will also need to be enforced in the exchange-traded derivatives (ETD) space. Today, the duopoly of Deutsche Börse-NYSE controls more than 90% of the European exchange-traded derivatives market. Synergies with ETD may expand oligopolistic settings in adjacent markets ('cross-subsidisation'), such as the unlisted OTC derivatives clearing space. Access to the respective CCPs by competing trading venues and to the incumbent trading venue by competing CCPs (reverse open access) is constrained because of closed vertical silos, i.e. there is no direct access to the data feed of the incumbent trading venue by competing CCPs and no possibility for competing trading venues to send trade data to the incumbent CCP. This lack of competition may further limit growth and innovation in the EU's derivatives markets. Compared to the US, where anecdotal evidence suggests that the market grew by 35%, the EU's exchange traded derivatives market has been rather stagnant. This is also why the European Commission prohibited the merger between the two entities, which would have "created a quasi-monopoly in a number of asset classes, leading to significant harm to derivatives users and the European economy as a whole. With no effective competitive constraint left in the market, the benefits of price competition would be taken away from customers. There would also be less innovation in an area where a competitive market is vital for both SMEs and larger firms."¹⁹ The implementation of EMIR should bring more competition in these markets, while allowing European competition policy authorities to better monitor markets.

Conclusions

With a delay of more than 10 years, the EU is finally going to have a regulatory framework in place for the post-trade financial market infrastructure. In the context of the financial crisis, this regulatory

¹⁷ The Bank of England estimates that the cost of margin requirements for clearing of interest rate derivatives amounts to about £ 500 bn. See Bank of England (2012).

¹⁸ The European Commission (2010) estimated this exposure roughly to \$1.4 trillion, but it is likely to be much higher.

¹⁹ The European Commission blocked the proposed merger between Deutsche Börse and NYSE Euronext after the companies' refusal to apply tough conditions and sell the part of their businesses that was creating strong concentration (see press release, 1 February 2012, http://europa.eu/rapid/press-release_IP-12-94_en.htm?locale=en).

framework follows two important trends. On the one hand, there is the general mandate given by the G-20 to regulators to strengthen financial stability, mainly through transparency and mandatory use of highly standardised infrastructures. On the other hand, since the launch of the Financial Services Action Plan in 1999, Europe has been trying to build a pan-European infrastructure leveraging on healthy competition among national incumbent infrastructures and new pan-European competitors. Competition is what indeed has kept the single market so far together and given it shape. Europe should continue to work to ensure stability without compromising the higher-level goal of greater integration through competition at pan-European level, and common market architecture with common minimum standards through more effective on-going supervision and enforcement. Any attempt by market operators to impede competition along the long value chain of financial market infrastructure on unfounded grounds of risks for financial stability should be considered as an attack on the single market. It cannot be denied, however, that profitability will go down drastically for the business model of market infrastructures. Due to fiercer competition, revenues may go down even further; therefore, in order to remain commercially viable, they need to integrate their businesses vertically (greater consolidation among trading, clearing and settlement providers is already part of the process) and horizontally to create economies of scale (size) and scope (services).

EMIR, in particular on the clearing side, may instigate a sea change, since a new market has to be structured for central clearing of previously bilaterally-traded derivative contracts. Huge investments have been made and are still to come in clearing technology and value-added services, which will bring important changes in the coming years. Existing CCPs will see huge opportunities for growth, and new ones can be expected to emerge. On the settlement side, free competition between CSDs may lead to further concentration and vertical consolidation within the sector, as this is a scale business by excellence, but also to greater competition with specialised banks for the expansion of territory. With growing concentration in the clearing and settlement sector, the task for macro and prudential supervisors will not become easier. However, as long as the regulatory and supervisory frameworks ensure that these integrated infrastructures are sufficiently interoperable, i.e. open at each key juncture of their value chain (trading, clearing and settlement), the process of ‘pan-Europeanisation’ of the market infrastructure will continue and be beneficial for financial integration. Locking-in collateral and customers in vertical and non-interoperable market infrastructures may also have spill-over effects on trading flows, by distorting flows from non-vertically integrated infrastructures. In the short-term, this may generate predatory practices by

vertically integrated and non-interoperable market infrastructures to push infrastructures that are unable to ring-fence collateral pools with post-trading operations out of the market. This may drive further consolidation but with limited benefits in terms of efficiency, as these pools of collateral will be unable (and unwilling) to interact.

A problem on the supervisory side is the multiplicity of actors: on the European level alone, three different bodies are in charge – the ECB (and other central banks), ESMA and EBA – with licensing and supervision still in the hands of local authorities, contrary to the initial plan. With the banking union project firmly under construction, a more streamlined structure will be necessary, given also that it concerns only a few players of systemic importance. In addition, close cooperation between the two major European supervisors, the ECB and the Bank of England, will be required, in the form of an MoU to structure control.

Finally, more light should be shed on the implications of forthcoming market infrastructure regulation on the availability of collateral (total volumes), in particular on the possibility for this collateral and assets, if segregated in individual client accounts by CCPs and for settlement and custody by CSDs, to be re-used for other purposes (re-hypothecation) or to limit its re-use by the infrastructure/intermediary. Based on our conservative estimates, the securities lending and repo markets in Europe have exceeded more than €6 trillion.²⁰ In the end, much will also depend on how each CCP will draft the ‘right of use’ procedures in the use of collateral, in line with the guidelines set by Art. 47 on the investment policy of a CCP (and Art. 52.1 on risk management procedures with interoperability agreements). The entire financial system depends on the integrity and turnover of collateral channels (Sissoko, 2011; Singh & Stella, 2012), on which the market has leveraged and grown so rapidly in the last decade. Any change with the potential to generate indirect effects on the architecture of the financial system should be subject to an in-depth investigation and testing period to assess unintended effects and new sources of systemic risk.

²⁰ Authors’ estimates based on data from International Securities Lending Association and International Capital Markets Association.

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