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Private International Law Aspects of Smart Derivatives Contracts Utilizing Distributed Ledger Technology: French Law

CONTENTS

INTRODUCTION

This paper considers the private international law, or conflict-of-law, aspects of derivatives contracts governed by the laws of France involving distributed ledger technology (DLT), commonly known as blockchain technology.

The development and implementation of new technologies such as DLT within the derivatives industry have the potential to create a more robust financial markets infrastructure, achieve operational efficiencies through increased automation and reduce costs for market participants.

As these technologies mature, it is important to understand the evolving legal treatment of derivatives traded on DLT platforms. Given the novel complications over where data, assets and even counterparties are located in a DLT environment, it is useful to examine key questions on how to determine which law applies and how to evaluate conflicts of governing law. While some jurisdictions[1] have produced analysis on areas of perceived legal uncertainty, these issues remain untested in many of the jurisdictions and cross-border environments important to the derivatives industry.

In January 2020, ISDA, R3, Clifford Chance and the Singapore Academy of Law jointly published *Private International Law Aspects of Smart Derivatives Contracts Utilizing Distributed Ledger Technology*[2]. That paper considered the private international law, or conflict-of-law, aspects of derivatives contracts governed by the laws of England and Wales or Singapore involving DLT.

These issues include:

- Whether the introduction of DLT or a DLT platform provider to a traditional trading relationship might create additional legal rights and obligations for the trading parties. These may be governed by different laws to those governing the trading documentation, which could have implications for the resolution of contractual disputes.

- How to identify the legal *situs* of digital assets for effecting payments or exchanging collateral on certain DLT platforms.

These issues are critically important for derivatives market participants that want to ensure the legal enforceability of their contracts and the associated netting and collateral arrangements are not undermined by an unexpected change in governing law or by an inability to enforce judgements. As derivatives are often traded on a cross-border basis, it is important these issues are examined and understood as clearly as possible from the perspective of the governing laws and jurisdictions typically used in ISDA documentation.

As a result, ISDA (in association with R3 and local counsel) has published additional papers that consider these issues from French, Irish, Japanese and New York law perspectives[3,4].

[1] See the UK Jurisdiction Taskforce (UKJT) *Legal Statement on Cryptoassets and Smart Contracts*: https://35z8e83m1ih83drye280o9d1-wpengine.netdna-ssl.com/wp-content/uploads/2019/11/6.6056_JO_Cryptocurrencies_Statement_FINAL_WEB_111119-1.pdf

[2] https://www.isda.org/a/4RJTE/Private-International-Law-Aspects-of-Smart-Derivatives-Contracts-Utilizing-DLT.pdf

[3] ISDA has published forms of ISDA Master Agreement and associated collateral documentation governed by the laws of England and Wales, New York, Ireland, France and Japan

[4] These papers can be accessed here: https://www.isda.org/2019/10/16/isda-smart-contracts/

Through this analysis, ISDA hopes to support the work of international standard-setting bodies, regulators, judiciaries, market participants and other key stakeholders examining these issues. The papers are also intended to provide greater certainty to participants incorporating DLT into derivatives transactions, strengthening the industry's ability to realize the operational and cost efficiencies that greater automation will provide.

While the focus of this paper is on potential private international law issues arising from the use of smart derivatives contracts using DLT, there may be other issues that need to be considered from a French law perspective when determining the legal status or characterization of a smart derivatives contract. These issues might include, for example, whether certain types of smart contract are capable of satisfying contract formation requirements under French law, or whether certain types of digital asset are capable of being treated as property under French law. Such discussions are beyond the scope of this paper[5].

[5] Smart contracts should obey common rules on the formation of contracts under French civil law. Questions might arise over proof of the conclusion of a contract on a DLT platform, bearing in mind that a contract entered into for commercial purposes may be entered into by the parties in electronic format. Further guidance on the required standard of proof would be beneficial for international financial institutions and could be issued by French bodies that typically issue position papers on financial matters – for example, the Legal High Committee for Financial Markets of Paris

UNCOLLATERALIZED DLT TRANSACTIONS

These papers set out two different examples in order to illustrate the relevant issues – an uncollateralized interest rate swap transaction and a collateralized interest rate swap. Both use ISDA documentation and are implemented on Corda, an open-source blockchain and smart contract platform developed by R3 that operates as a private, permissioned ledger (ie, one that only authorized parties may view and use). Types of issues that might arise when entering into derivatives transactions using DLT platforms that have different characteristics from Corda – for example, permissionless ledgers[6] – are also covered.

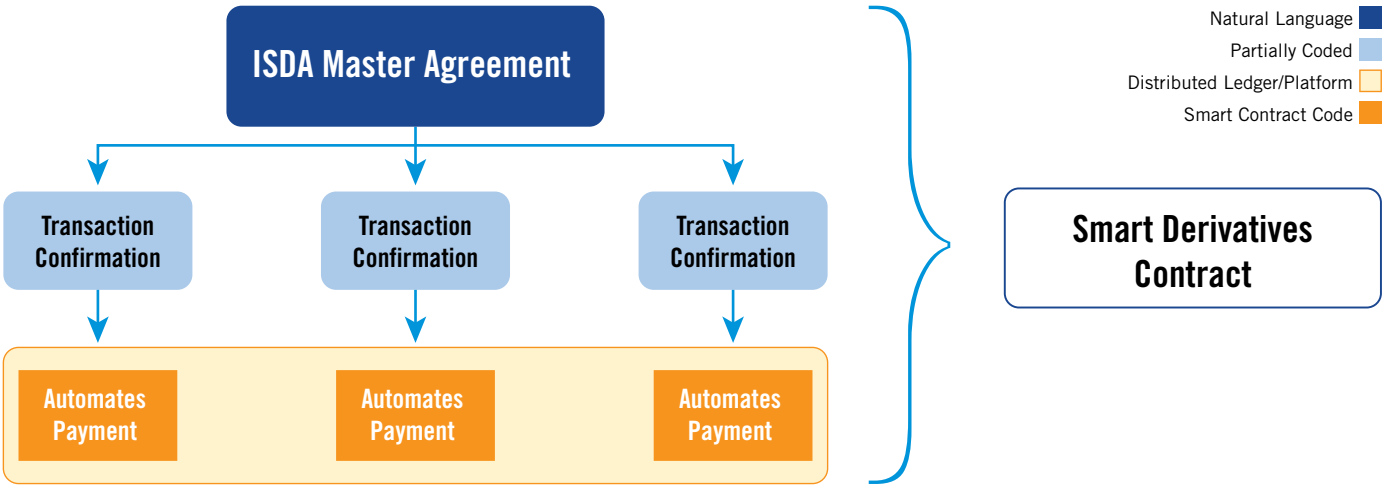
Smart Derivatives Contracts

ISDA has published a series of legal guidelines for smart derivatives contracts[7], which are intended to explain the core principles of ISDA documentation and raise awareness of important legal terms that should be maintained when a technology solution is applied to derivatives trading.

These guidelines establish the concept of a 'smart derivatives contract'. This is a derivatives contract in which some terms are capable of being automatically performed, either by expressing those provisions using some formal representation that enables their automation, or by referring to the operation of smart contract code that is external to the contract[8].

While the guidelines are agnostic about the types of technology that could be used to implement smart derivatives contracts, they provide an illustration of a potential smart derivatives contract construct utilizing a DLT platform, where payments under a series of transactions are automated.

Figure 1



[6] A distributed ledger that is public can be viewed by members of the public, while a permissionless ledger is one that members of the public can make and verify changes to. *Distributed Ledger Technology and Governing Law: Issues of Legal Uncertainty* (London: Financial Markets Law Committee, 2018) at 8, [3.3(a)], http://fmlc.org/wp-content/uploads/2018/05/dlt_paper.pdf (FMLC paper)

[7] ISDA *Legal Guidelines for Smart Derivatives Contracts: Introduction* (January 2019), https://www.isda.org/a/MhgME/Legal-Guidelines-for-Smart-Derivatives-Contracts-Introduction.pdf, and ISDA *Legal Guidelines for Smart Derivatives Contracts: The ISDA Master Agreement* (February 2019), https://www.isda.org/a/23iME/Legal-Guidelines-for-Smart-Derivatives-Contracts-ISDA-Master-Agreement.pdf

[8] For further discussion on these smart derivatives contracts and which provisions might be well suited to automation, see ISDA and Linklaters LLP, *Smart Contracts and Distributed Ledger – A Legal Perspective* (August 2017), www.isda.org/a/6EKDE/smart-contractsanddistributed-ledger-a-legal-perspective.pdf; ISDA and King & Wood Mallesons LLP, *Smart Derivatives Contracts: From Concept to Construction* (October 2018), https://www.isda.org/a/cHvEE/Smart-Derivatives-Contracts-From-Concept-to-Construction-Oct-2018.pdf; and Christopher D Clack and Ciáran McGonagle, *Smart Derivatives Contracts: The ISDA Master Agreement and the Automation of Payments and Deliveries, Artificial Intelligence and Law* (forthcoming)

In Figure 1, the parties enter into an ISDA Master Agreement as normal. Commercial terms relating to the transaction continue to be contained in a transaction confirmation. This example assumes none of the transactions will be collateralized.

The Uncollateralized DLT Transaction

Corda is a blockchain platform for recording and processing financial agreements. It is a private permissioned ledger – only authorized parties may view and use it. The system supports smart contracts, which R3 has defined as[9]:

> *[…] an agreement whose execution is both automatable by computer code working with human input and control, and whose rights and obligations, as expressed in legal prose, are legally enforceable. The smart contract links business logic and business data to associated legal prose in order to ensure that the financial agreements on the platform are rooted firmly in law and can be enforced […]*

In this example, the parties to the uncollateralized DLT transaction have negotiated the terms of their relationship under an ISDA Master Agreement and have documented the economic terms relating to the interest rate swap under a transaction confirmation.

The parties would also be required to enter into an agreement with a platform provider as the operator[10] of the business network that deploys applications that utilize Corda (each application is called a 'CorDapp'). This agreement requires the parties to accept a business network rule book[11]. This agreement is governed by the laws of the jurisdiction that the parties agree upon.

When implementing the uncollateralized DLT transaction on Corda, the parties would become 'nodes' on the Corda distributed ledger or blockchain, and would use a derivatives CorDapp to execute the transaction.

A CorDapp has a smart legal contract template library, with each smart contract consisting of the following elements:

- **A state object:** This is a digital representation of a real-world fact on the distributed ledger. For example, the ISDA Master Agreement and transaction confirmation entered into between the parties would be a state object.
- **A Corda contract:** This is an element setting out various rules that govern state objects – for example, 'the trade date must be after today's date', 'the fixed rate amount must be above [a specified percentage]', and 'the floating rate amount spread must be [a specified figure]'.
- **A portable document format (PDF) file with parameters:** This is a file containing parameters (for example, the parties' names, dates and amounts of money) that need to be filled in by the parties. The PDF is inextricably linked to the Corda contract for purposes that are explained later.

[9] Richard Gendal Brown, James Carlyle, Ian Grigg and Mike Hearn, 'Corda' in *Corda: An Introduction* (New York, NY: R3, 2016), https://docs.corda.net/_static/corda-introductory-whitepaper.pdf, at 7, [4] (original emphasis)

[10] Although there is most likely only one platform provider contracting with the parties, it is possible for there to be multiple entities operating the CorDapp

[11] A business network rule book is an agreement between the parties governing use of the CorDapps, analogous to agreements that users currently enter into to use electronic trading platforms and financial transaction platforms such as SWIFT

To structure, set up and execute the uncollateralized DLT transaction, the following steps are taken:

1) Party A obtains a smart legal contract appropriate to the transaction from the smart legal contract template library on the distributed ledger, and fills in the parameters of the PDF with the information relating to the transactions.

2) The CorDapp 'scrapes' or obtains the transaction information from the PDF and inputs this into the state object.

3) Party A runs a verify function of the Corda contract to ensure the state object does not break any of the Corda contract's predetermined rules.

4) Once the state object has been determined not to break any of the Corda contract's rules, Party A sends the transaction to Party B.

5) Party B reviews the details of the smart legal contract. When Party B has confirmed that the PDF and state object accurately reflect the transaction, Party B runs a verify function of the Corda contract to ensure the state object does not break any of the Corda contract's rules.

6) Once the state object has been determined not to break any of the Corda contract's rules, Party B digitally signs the transaction and sends it back to Party A.

7) Party A digitally signs the transaction and sends it to the notary, which is a server on the distributed ledger operated by one or more entities that execute what is known as the 'notary function'[12]. The notary checks the cryptographic hash of the state object against its record of hashes[13]. When it confirms that the state object is unique, it digitally signs the transaction and sends it back to both parties.

8) The parties record a copy of the transaction in their respective vaults on the distributed ledger.

After the uncollateralized DLT transaction has been executed in accordance with these steps, subsequent lifecycle events in respect of the transaction, such as a periodic payment, would be managed as follows:

1) On an agreed-upon date, an oracle[14] feeds interest rate data into the smart legal contract that is in Party A and B's vaults.

2) Party A then initiates a new transaction, repeating steps (3) to (8) above. This leads to the smart legal contract being recorded in Party A and Party B's vaults with an updated record of the transaction – that is, the net amount payable by Party A to Party B or vice versa. The actual payment takes place off the distributed ledger.

[12] The 'notary function' can be performed by a collection of servers known as a 'notary cluster'

[13] A cryptographic hash is an electronic signature uniquely identifying a state object that is created by running the contents of the state object through a complex mathematical formula

[14] A service provided by a third party that feeds real-world information into a distributed ledger, which can then be used to initiate the execution of smart contracts

In this scenario, it is not envisaged that any intermediaries, such as brokers, central banks, clearing houses and custodians of securities, would be represented on Corda. Where involved in a transaction, they would continue to operate off-ledger. However, it is possible that an intermediary such as a central counterparty could operate as a node on the distributed ledger. This could be as a party to a derivatives transaction, or as an 'observer node' that is able to receive information relating to a transaction in order to clear but is otherwise unable to participate in the transaction.

While the objective of the DLT platform is often to eliminate the need for some or all of these intermediaries, their complete removal is unlikely to be feasible or desirable. Beyond the transacting parties, there are likely to be numerous other entities that act as nodes in the ledger, including the operator(s) of (parts of) the platform and parties that facilitate communication and record maintenance[15]. For a collateralized transaction, this would also include custodians, which are required to hold and segregate collateral under initial margin requirements for non-cleared derivatives transactions[16].

The issues arising from such a use of a DLT platform are outside the scope of this paper.

[15] See Thomas Keijser & Charles W Mooney, Jr, *Intermediated Securities Holding Systems Revisited: A View through the Prism of Transparency* (Institute for Law and Economics Research Paper No. 19-13), https://ssrn.com/abstract=3376873, at 17-18 (forthcoming in Louise Gullifer & Jennifer Payne (eds), Intermediation and Beyond (Oxford: Hart Publishing, 2019))

[16] Further discussion of these regulatory requirements can be found in the ISDA *Legal Guidelines for Smart Derivatives Contracts: Collateral*, https://www.isda.org/a/VTkTE/Legal-Guidelines-for-Smart-Derivatives-Contracts-Collateral.pdf

Private International Law Rules Relating to Contracts

How a Court Determines the Governing Law of a Contract

Under French law, rules on the law applicable to contracts are governed by the Rome I Regulation[17]. How a French court would determine the governing law of the contract will depend on whether or not the parties have chosen a specific law to apply.

Parties' Choice of Law

As a general rule and subject to the absence of any fraudulent intention, French law allows the parties to a contract to freely elect the law that will govern their agreement[18], provided the agreement is entered into in a situation involving a conflict of laws[19].

The parties' choice can be explicit but it can also be inferred where it is clearly demonstrated by the terms of the contract or the circumstances of the case[20]. In the absence of an explicit choice-of-law provision, the demonstration of the parties' choice could be influenced by various indicators, such as any jurisdiction clause in the contract[21] or the inclusion of clauses specific to the law of a particular state[22].

The parties' freedom of choice extends to the election of a law that has no objective connection with the contract or parties to it[23]. Moreover, the Rome I Regulation specifies that "parties can select the law applicable to the whole or to part only of the contract"[24]. According to authoritative doctrine, the parties have the right to elect at least two different governing laws (*dépeçage*), so long as: (i) the respective parts and aspects of the contract governed by different governing laws can be clearly separated and identified; (ii) there is no risk for one single provision of the contract to be governed by two or more different governing laws; and (iii) enforcement of the obligations under such an arrangement is not rendered impossible in practice because of such *dépeçage* (for example, where two provisions have to be governed by the same law to ensure consistency in their implementation).

[17] Regulation (EC) No 593/2008 of June 17, 2008, on the law applicable to contractual obligations (Rome I)

[18] Article 3(1) of the Rome I Regulation

[19] The report on the convention on the law applicable to contractual obligations by Mario Giuliano and Paul Lagarde (Official Journal C 282 , October 31, 1980, P. 0001 – 0050) describes these situations as those *"which involve one or more elements foreign to the internal social system of a country (for example, the fact that one or all of the parties to the contract are foreign nationals or persons habitually resident abroad, the fact that the contract was made abroad, the fact that one or more of the obligations of the parties are to be performed in a foreign country, etc.), thereby giving the legal systems of several countries claims to apply"*. Prior to the entry into force of the Rome I Regulation, the French Supreme Court (*Cour de Cassation*) ruled that the parties to a purely domestic contract are not free to elect a foreign law to govern their agreement (*Cour de Cassation*, (Soc.) July 8, 1985 - Allard - *Revue Critique de Droit International Privé*, 1986, 113). Such choice is exclusively reserved for parties to an international contract. The concept of 'international contract' has been defined by case law by using both business and legal criteria. From a business perspective, the contract should involve cross-border flows of money or goods. From a legal perspective, the contract should be linked to different jurisdictions. Basically, French courts consider an international contract to be one that is not restricted to the sole boundaries of the internal French territory

[20] Article 3(1) of the Rome I Regulation

[21] Recital 12 of the Rome I Regulation: "An agreement between the parties to confer on one or more courts or tribunals of a Member State exclusive jurisdiction to determine disputes under the contract should be one of the factors to be taken into account in determining whether a choice of law has been clearly demonstrated"

[22] The Giuliano and Lagarde Report (see footnote n°19), 17, para. 3

[23] Specific rules may apply in relation to some categories of contracts not relevant here (eg, contracts of carriage, some insurance contracts, employment contracts)

[24] Article 3(1) of the Rome I Regulation

Determination of Applicable Law Where the Governing Law is Neither Expressed Nor Implied

In the absence of choice, a court would first need to characterize the contract and determine whether it falls within one of the categories listed in Article 4(1) of the Rome I Regulation, including the following:

- A contract for the sale of goods or for the provision of services shall be governed by the law of the country where the seller or the service provider has its habitual residence;
- A contract for the sale of goods by auction shall be governed by the law of the country where the auction takes place, if such a place can be determined; and
- A contract concluded within a multilateral system that brings together or facilitates the bringing together of multiple third-party buying and selling interests in financial instruments, as defined by Article 4(1), point (17) of Directive 2004/39/EC, in accordance with non-discretionary rules and governed by a single law, shall be governed by that law.

For companies and other bodies, the habitual residence is typically the place of central administration at the time the contract is concluded[25]. If the contract is concluded as part of the operations of a branch, agency or any other establishment, or if performance of the contract is the responsibility of these entities, then the habitual residence will be the place of that branch, agency or establishment[26].

If the contract does not fit within any of the categories listed in Article 4(1) of the Rome I Regulation, or if it could fit into more than one category, then the contract will be governed by the law of the country where the party required to effect the characteristic performance of the contract has its habitual residence[27].

If it is not possible to determine the applicable law by applying the test described above, then the court will apply the law of the country with which the contract is most closely connected[28].

It must be noted that Article 4(3) of the Rome I Regulation provides an escape clause if it is clear from all the circumstances of the case that there is a manifestly closer connection with a country other than the one resulting from the application of the above-mentioned tests.

The influence of these different criteria may lead to unpredictable results, and parties are therefore advised to make an explicit choice of law to guarantee contractual certainty.

[25] Article 19(1) and (3) of the Rome I Regulation

[26] Article 19(2) of the Rome I Regulation

[27] Article 4(2) of the Rome I Regulation. Recital 18 of the Rome I Regulation specifies: "In the case of a contract consisting of a bundle of rights and obligations capable of being categorised as falling within more than one of the specified types of contract, the characteristic performance of the contract should be determined having regard to its centre of gravity"

[28] Article 4(4) of the Rome I Regulation

Limitations to the Effects of the Governing Law Chosen by the Parties or Applicable in the Absence of Choice

Four factors may limit the parties' freedom of choice or the effects of the law that is chosen or otherwise applicable.

- **Purely domestic contracts:** If the parties have chosen a foreign law to govern an otherwise purely domestic contract, the choice of the parties cannot prejudice the application of mandatory provisions of the law of the country in which they are located[29].
- **Mandatory EU laws:** If the parties have chosen the law of a country that is not a European Union (EU) member state to govern their contract, even though all elements relevant to the situation (other than the parties' choice of law) are located in one or more member states, then the parties' choice of law shall not prejudice the application of mandatory provisions of EU law and their national implementation as the case may be[30].
- **Overriding mandatory laws**[31]**:** A court may apply any overriding mandatory provisions of: (i) the law of the forum[32]; and (ii) the law of the country where the contractual obligations have to be or have been performed, in so far as they render the performance of the contract unlawful[33].
- **Public policy:** A French court may deny the application of a foreign law if it is manifestly incompatible with French public policy (*ordre public*)[34].

How a Court Determines the Appropriate Jurisdiction for a Dispute Regarding Contractual Obligations

If the contract includes a jurisdiction clause, French courts should uphold the parties' consent to submission to the jurisdiction specified in the agreement[35], provided the agreement is not a purely domestic contractual relationship[36].

[29] Article 3(3) of the Rome I Regulation

[30] Article 3(4) of the Rome I Regulation

[31] "Overriding mandatory provisions are provisions the respect for which is regarded as crucial by a country for safeguarding its public interests, such as its political, social or economic organisation, to such an extent that they are applicable to any situation falling within their scope, irrespective of the law otherwise applicable to the contract under this Regulation" (Article 9(1) of the Rome I Regulation)

[32] Article 9(2) of the Rome I Regulation

[33] Article 9(3) of the Rome I Regulation

[34] Article 21 of the Rome I Regulation

[35] *Cour de cassation, Civ. 1e, December 17, 1985*, Article 25 of the Brussels I Recast Regulation or Article 23 of the Lugano Convention.

[36] See, for example, in relation to the Brussels I Recast Regulation: CJUE, *Armin Maletic and Marianne Maletic v lastminute.com GmbH and Tui Österreich GmbH* (Case C-478/12, November 14, 2013)

If the contract does not include a jurisdiction clause, French courts will determine their jurisdiction in accordance with various rules, depending on the location of the defendant (ie, the party a dispute has been initiated against). The main sources considered are: (i) the EU Brussels I Recast Regulation[37] if the defendant is located in an EU member state; (ii) the Lugano Convention[38] if the defendant is located in a member jurisdiction of the European Free Trade Association that is not an EU member state[39]; and (iii) the French domestic regime if the aforementioned regulation and convention do not apply[40]. Other bilateral treaties may apply depending on the location of the defendant and will be assessed on a case-by-case basis.

As a general rule[41], French courts will have jurisdiction if the defendant is located in France[42]. If the defendant is a commercial company, then it will be treated as located in France if it has its registered office (*siège social*) in France, or if the dispute originates from the operations of its branch, agency or other establishment located in France[43].

For disputes relating to a contract, the claimant may choose either the place where the defendant is located or the place of performance of the obligation in question[44]. The place of performance should be:

- For the sale of goods: the place where the goods were delivered or should have been delivered under the contract.
- For the provisions of services: the place where the service were provided or should have been provided under the contract.

These criteria may be difficult to interpret for contracts relating to the delivery of assets or provision of services on a distributed ledger. Determining the location of a decentralized ledger is particularly difficult as the various nodes of the ledger may be located in different jurisdictions. For contracts entered into and entirely performed on the internet (for example, the sale of a license for a dematerialized software), some legal authors[45] argue that the place of performance of the contract should be the location of the buyer or the beneficiary of the service[46]. This reasoning might be applied to contracts performed on a distributed ledger, but it can only be a part of the solution as it might be difficult to determine which party is the buyer or the beneficiary of a service for some derivatives contracts.

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[37] Regulation (EU) No 1215/2012 of the European Parliament and of the Council of December 12, 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters

[38] Convention on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters of October 30, 2007

[39] For example, Switzerland, Iceland and Norway

[40] Depending on the date the contract was entered into, other legal sources may apply, such as the 1968 Brussels Convention or the 1988 Lugano Convention, which will not be considered for the purposes of this analysis

[41] Employment, insurance or consumer contracts may follow different rules and are not considered for the purposes of this analysis. Disputes relating to real estate are also excluded

[42] Article 42 of the French Civil Procedure Code, Article 4 of the Brussels I Recast Regulation or Article 2 of the Lugano Convention, as the case may be

[43] Article 43 of the French Civil Procedure Code and the so-called '*gares principales*' case law under French domestic law, Article 7(5) of the Brussels I Recast Regulation or Article 5(5) of the Lugano Convention, as the case may be

[44] Article 46 of the French Civil Procedure Code, Article 7(1) of the Brussels I Recast Regulation or Article 5(1) of the Lugano Convention, as the case may be

[45] CACHARD, La régulation internationale du marché électronique, 2002, LGDJ, préf. FOUCHARD, spéc. no 618

[46] See also a decision from the Court of Appeal of Pau in relation to a dispute between a French consumer and Facebook. The court decided that French courts had jurisdiction on the basis that the service provided by Facebook was deemed to be provided in France (*Pau, March 23, 2012, RG no 11/03921, CCE janv. 2013. Chron. 1, no 10, obs. M.-É. Ancel*)

French courts might also claim jurisdiction in some other scenarios – for example, to order conservatory and/or temporary measures[47] or in case of an emergency relating to persons or assets located in France – even if they would not have had jurisdiction over the substantive dispute at stake between the parties.

In addition, French courts may assume jurisdiction over disputes relating to obligations entered into by an EU national (whether in the EU or abroad[48]) if no other EU court has jurisdiction, even if a third country has closer links with the dispute[49].

Admissibility of Evidence in Electronic Form

Provided a contract is validly formed, there is no difference in terms of admissibility – which is related to the evidence issue – between an electronically signed contract and a contract executed with a 'wet-ink' signature. This principle is reflected in Article 25(1) of the eIDAS Regulation[50], which specifies that "an electronic signature shall not be denied legal effect and admissibility as evidence in legal proceedings solely on the grounds that it is in an electronic form (…)". Article 1365 of the French *Code civil* (the French Civil Code) states that "a writing consists of a series of letters, characters, numbers or any other signs or symbols with an intelligible meaning, whatever their medium".

When a written instrument is required for the validity of a contract, this instrument can be created and stored in electronic form in accordance with Articles 1366 and 1367 of the French Civil Code. This assumes: (i) the author of the document can be duly identified and the record is created and stored under conditions that ensure its integrity; and (ii) the electronic signature is a trustworthy[51] identification process that warrants its link with the related signed document[52].

However, the following points should be considered for specific relationships, such as two bank parties to a contract.

- For legal instruments that are executed by commercial parties (for example, banks, as a result of the combination of Article L. 311 1 of the monetary and financial code and Article L. 110 1 of the commercial code) in the context of their commercial activity, the evidence of a legal instrument with respect to the commercial party does not necessarily have to be made by means of a signed written instrument (Article L. 110 3 of the commercial code).

[47] For example, see Cour de cassation, Civ. 1re, March 14, 2018, nos 16-27.913 and 16-19.731, JCP 2018. 702, note F. Mailhé; JDI 2018. 1155, note H. Gaudemet-Tallon

[48] Articles 14 and 15 of the French Civil Code

[49] Cour de cassation, Civ. 1e, December 18, 1990

[50] Regulation (EU) No 910/2014 of the European Parliament and of the Council of July 23, 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC

[51] Article 1367 of the French Civil Code does not define specific technical conditions for the trustworthiness of the electronic signature process, so it is always possible to try to prove the trustworthiness of a given electronic signature process. That being said, Article 1367 of the French Civil Code also specifies that an electronic signature process is presumed to be trustworthy if it meets the criteria defined by a decree (decree n°2017-1416 of September 28, 2017). Specifically, when the electronic signature process uses a qualified electronic signature (ie, an advanced electronic signature complying with Article 26 of the eIDAS Regulation and created with a qualified electronic signature process complying with the requirements of Article 29 of the eIDAS Regulation, on the basis of a qualified certificate for electronic signature complying with the requirements of Article 28 of the eIDAS Regulation)

[52] Article 1174 of the French Civil Code

- As a consequence, and unless a specific statutory requirement obliges the type of instrument to be executed in writing, the proof of the execution towards a commercial party (such as a bank or corporates having a commercial form) may not necessarily have to conform to the requirements of Articles 1366 and 1367 of the French Civil Code[53].

In accordance with Article 1368 of the French Civil Code, the parties to a contract can agree on a specific standard of evidence for documentation relating to the performance of the contract. As a result, when a framework agreement (ie, an agreement like the ISDA Master Agreement that defines the contractual terms applicable to the relationship between parties) specifies a standard of evidence that has been agreed by the parties as applicable to any transactions based on that agreement, that standard will be applicable. This could define admissibility requirements for electronic records that are less stringent than the statutory requirements[54].

Disputes Involving the Parties to the Uncollateralized DLT Transaction

In accordance with Section 13(a) of the ISDA Master Agreement, the Master Agreement and the transactions will be governed by the law specified by the parties in the schedule.

Assuming the situation involves a conflict of law, the explicit choice-of-law clause should be enforceable before French courts. There is nothing to suggest the parties' express choice of law would be disapplied by a French court, irrespective of whether the parties and the CorDapp have a connection to the law chosen by the parties.

Excluding asymmetrical jurisdiction clauses, which may raise questions under French law[55], and provided the agreement does not constitute a purely domestic relationship, the choice-of-jurisdiction clause provided by the parties in Section 13(b) of the ISDA Master Agreement should be upheld by a French court.

Provided the smart contracts remain backed by an off-ledger ISDA Master Agreement, and subject to further review of the platform characteristics, this analysis is unlikely to differ only because the platform has different characteristics or functionality to Corda (eg, a permissionless DLT system).

Disputes Involving Parties to the Uncollateralized DLT Transaction and the Platform Provider

Another category of disputes might arise from the functioning of the platform used for the derivatives transaction. Corda, like other DLT platforms, sits at the 'bottom of the stack'. This means application builders utilize Corda to build their CorDapps, with such CorDapps commonly referred to as sitting at the 'top of the stack'. It is important to note that parties using CorDapps interface with platform providers operating CorDapps at the 'top of the stack'.

It is conceivable that, due to software programming bugs or hardware issues, corrupted or otherwise incorrect data might be fed into smart contracts, or smart contracts might not function as envisaged. This would then give rise to a potential dispute between one or both of the parties to a derivatives transaction that have suffered a loss when using the CorDapp.

[53] However, it should be noted that if a party to any of the agreements is not a commercial party, the proof of execution of such document by said party should be made in writing and conform to the requirement of Articles 1366 and 1367 of the French Civil Code

[54] The legal provisions relating to the admissibility of evidence are not systematically public order provisions and, in particular, parties to a contract may agree different standards of evidence applicable between them in the framework of their contractual relationship

[55] See, for example, Cour de cassation, Civ. 1, 3 octobre 2018, n°17-21.309

To participate in a Corda-enabled derivatives transaction using a CorDapp, the parties would have entered into written agreements with the platform provider containing express choices of governing law and submission to jurisdiction. There would generally be two types of agreements governing use of the CorDapp: (1) a platform-level licensing agreement between each party and the platform provider operating the trading platform; and (2) a rule book that governs the transactions.

As with the relationship between the parties to the derivatives transaction, there seems no reason under current private international law rules why a court in France would not enforce the jurisdiction clause or would reject the express choice of law in the absence of any countervailing mandatory legal rule or public policy reason.

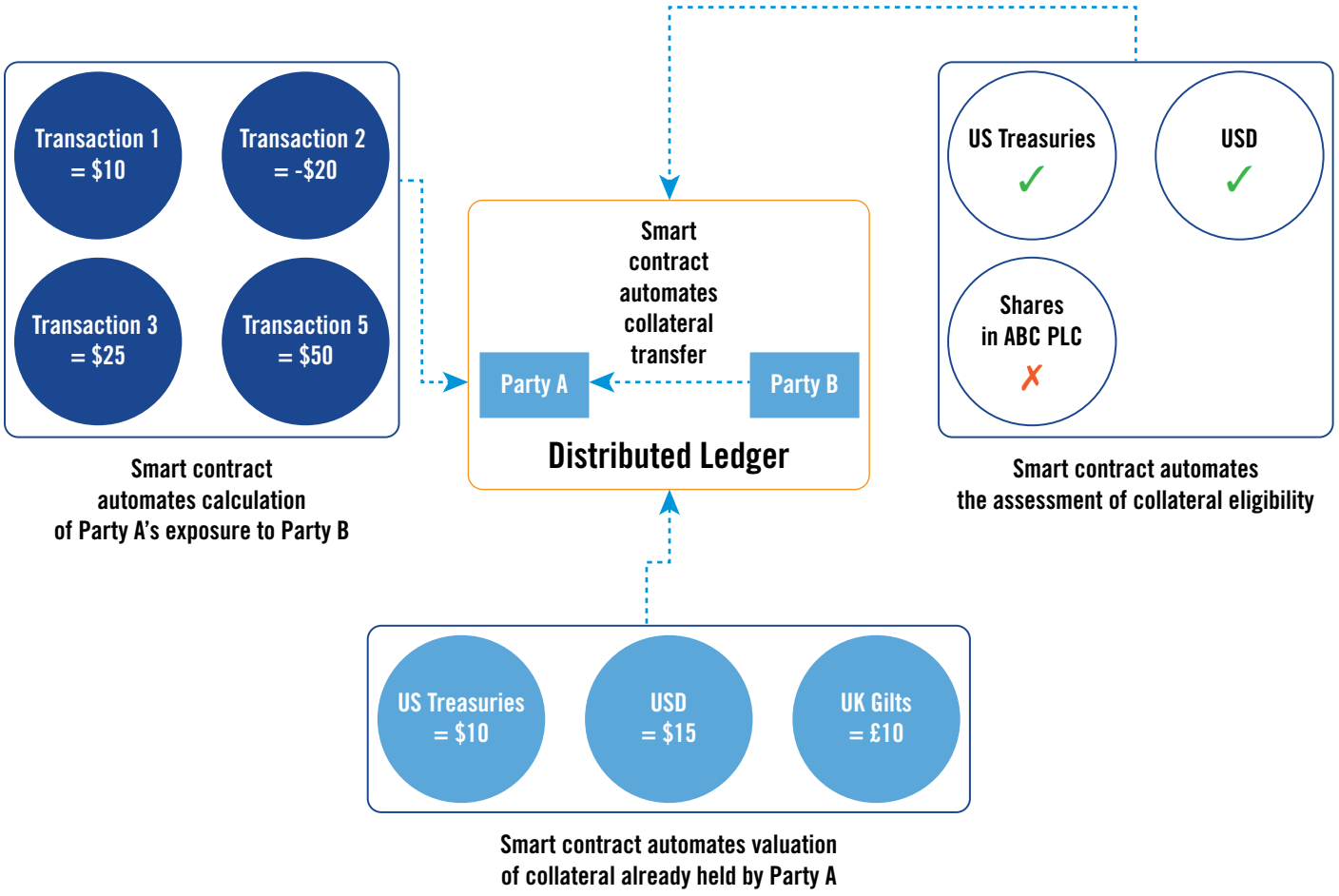
COLLATERALIZED DLT TRANSACTIONS

Smart Derivatives Contracts – Collateral

In September 2019, ISDA published *Legal Guidelines for Smart Derivatives Contracts: Collateral*[56]. These guidelines provide an overview of current legal standards that exist within the collateral management process, and how they can be more effectively applied to assist technology developers, collateral operations, risk management and other key stakeholders in developing technology solutions that are consistent with applicable legal and regulatory standards that govern and regulate collateral relationships and processes.

These guidelines are agnostic about the types of technology and solutions that may ultimately be used. However, they do provide an illustration of a potential smart derivatives contract construct using DLT that is designed to automate certain aspects of the collateral management process.

Figure 2



[56] ISDA *Legal Guidelines for Smart Derivatives Contracts: Collateral*, https://www.isda.org/a/VTkTE/Legal-Guidelines-for-Smart-Derivatives-Contracts-Collateral.pdf

In considering the use of DLT in this context, it is useful to recall the distinction made in the ISDA *Legal Guidelines for Smart Derivatives Contracts: Introduction*[57] between different types of potential DLT implementation that could support smart derivatives contracts. In the context of collateral management, a system designed as a 'light chain' would not house any collateral, whereas a system designed as a 'heavy chain' would be able to support the key operational mechanisms of the ISDA collateral documentation. Figure 2 illustrates how, under a heavy chain implementation, the platform could house tokenized collateral assets that are native to a DLT platform and could support the transfer of such assets between the parties.

The guidelines note the importance of understanding the precise nature and location of these digitized assets, as well as any security or ownership rights attached to them. The paper also observes that achieving legal certainty in this area will be vital in assessing the efficacy of any system that supports the key operational mechanisms of the collateral management process.

This paper will explore the relevant private international law issues relating to the situs of digital assets by reference to a collateralized DLT transaction.

The Collateralized DLT Transaction

Implementation of the collateralised DLT transaction on Corda would be achieved in much the same way as the uncollateralized DLT transaction[58].

In this example, the parties to the collateralized DLT transaction will have again negotiated the terms of their relationship under the ISDA Master Agreement and documented the economic terms relating to the interest rate swap under a transaction confirmation. The parties would also have entered into a form of credit support annex (CSA) published by ISDA[59].

In addition, the parties would enter into a platform agreement with the platform provider as the operator of the CorDapp.

As with the uncollateralized DLT transaction, the parties would become 'nodes' on Corda and would use a CorDapp to execute the transaction and any collateral obligation arising from it.

In this example, the CSA would be a state object in addition to the ISDA Master Agreement and transaction confirmation. A separate Corda contract would be required, setting out the various rules governing the CSA state object. For example:

> "Eligible collateral must be [a specified asset]."

The structure, set-up and execution of the collateralized DLT transaction would happen in much the same way as for the uncollateralized DLT transaction, except it is likely that collateral settlement would take place on a much more frequent basis.

[57] Above, n 7

[58] See Uncollateralized DLT Transaction section

[59] Discussion of the different types of ISDA collateral documentation can be found in the ISDA *Legal Guidelines for Smart Derivatives Contracts: Collateral* paper, https://www.isda.org/a/VTkTE/Legal-Guidelines-for-Smart-Derivatives-Contracts-Collateral.pdf

It is also possible that the collateral assets could be documented as tokens[60] – whether as the representation of a real-world collateral asset that is held and transferred off-ledger, or some form of digital asset that could possess value in and of itself and could therefore be used as collateral without any corresponding real-world asset. Tokens possessing intrinsic value could be used to settle transactions without the need for any off-ledger fund transfers. This paper will explore potential issues arising under each of these scenarios.

Private International Law Rules Relating to Property Interests in Securities

Under French conflict-of-law rules, a distinction is generally drawn between two key concepts.

- The 'creation' of the security, which covers contractual aspects of the security interest – ie, the creation of the security interest and its operating procedures (such as margining, haircuts thresholds, etc).

- The 'perfection' of the security, which covers the formalities to be performed in the jurisdiction where the assets are located in order to ensure the enforceability of the rights in rem, whether ancillary or principal, against third parties and other creditors.

The 'creation' of the security is governed by the law governing the agreement – ie, the law of the contract (*lex contractus*). As a general rule and subject to the absence of any fraudulent intention, French law permits the parties to a contract to freely elect the law that will govern their agreement.

The perfection of the security is governed by the *lex rei sitae* – ie, the law of the jurisdiction where the assets subject to the security interest are located (*lex rei sitae* or *lex situs*)[61].

As a general rule, French law would be irrelevant in determining the perfection requirements for collateral held outside France. Conversely, French law will govern the perfection of security interest in collateral located, or deemed located, in France.

Application of Private International Law Rules to the Collateralized DLT Transaction

As a preliminary note, unless otherwise specified, the analysis in this section would not likely differ on the sole ground that the platform used is based on a permissionless DLT system.

For tokens representing a real-world collateral asset held and transferred off-ledger, there would be strong arguments that the applicable law should be the law of the jurisdiction where the real-world asset is located.

With respect to bearer financial instruments in intermediated form, for example, the account where the securities are held should be the place of their location. Article L.211-39 of the M&F Code (which implements under French law the EU Collateral Directive[62]) specifies that the applicable law for the purposes of the financial collateral regime is the law of the jurisdiction where the account in which the securities held as collateral is located.

[60] A 'token' is a type of state object that is classified as a digital asset and that has an owner

[61] J. Foyer/G. de Geouffre de La Pradelle, Droit International Privé, Masson 1987, no. 1451 s; Y. Loussouarn, *Droit international privé*, Précis Dalloz 1999, no. 421 ; *Cour de Cassation (Civ. lère)* July 8, 1969, *Revue critique de droit international privé*

[62] Directive 2002/47/EC of the European Parliament and of the Council of June 6, 2002 on financial collateral arrangements

The issue is more complex for digital assets that do not correspond to real-world assets, the value of which only exists on the DLT platform. A possible approach would be to apply by analogy the conflict–of-law rules applicable to real-world assets to the extent possible.

For example, the lex incorporationis could be applied to tokens that can be characterized as embedding a claim against its issuer – ie, securities tokens or utilities tokens.

However, this approach would not offer a satisfactory solution for assets that can be characterized as cryptocurrencies. Cryptocurrencies may not have an identified issuer, and wallets in which cryptocurrencies are held cannot be considered as an account under the statutory meaning of the term. Real-world conflict-of-law rules would therefore not be applicable.

In the absence of an existing legal regime to determine the applicable law for the security interest on these types of assets, different solutions could be considered. Any solution would need to be based on objective and undisputed criteria to ensure contractual robustness regarding the validity, perfection and enforceability of the security interest[63].

As an example, the perfection of the security interest could be governed by the law of the jurisdiction where the collateral provider or collateral taker is incorporated. The choice would depend on the objectives pursued by the legislator (ie, protecting the creditors of the collateral giver or collateral taker).

Another option would be to apply the law of the platform – ie, the law chosen by the parties to govern the relationship between each participant on the platform and the platform provider. This conflict-of-law rule would have the advantage of resulting in one single law governing the perfection of all securities interests created for assets registered in a given system. However, this rule could encourage forum shopping. Platform governance models could have an influence on the relevant criteria for designating a conflict rule. In any event, parties should ensure that executing the contract on a DLT platform does not alter their ability to identify their counterparties.

A further issue to consider is the implementation of publicity mechanisms to ensure that third parties willing to create a security over assets held by the collateral provider are aware of existing potential security interests and avoid fraudulent rehypothecation of assets pledged to third-party creditors. Agreeing an internationally harmonized rule in this respect might be beneficial.

[63] The applicable law may differ depending on the legal feature of the guarantee considered (its validity and enforceability, or its perfection). For example, the assignment of private claims where the law applicable to the assignment may be different from the law applying to its perfection vis-a-vis third parties

CONCLUSION AND RECOMMENDATIONS

This paper has considered a number of private international law aspects of derivatives contracts governed by the laws of France and involving DLT.

Considering the most straightforward implementations of the DLT-based transaction examples set out in this paper, it is unlikely that either implementation would result in a French court disapplying an express choice of law, whether in the ISDA Master Agreement or any agreement between the parties and a platform provider.

This is consistent with the position in England and Wales, Singapore, New York and Ireland[64]. ISDA has published additional papers that consider these issues from the perspective of these jurisdictions[65].

In each of these jurisdictions, there may be additional conflict-of-laws issues arising from a potential lack of legal certainty around the situs of tokens that are used to effect payments or exchanges of collateral on a DLT platform. These issues are more likely to arise where a public and permissionless DLT system establishes an entirely disintermediated form of securities holding systems or trading platforms.

These challenges could be overcome by allowing for all parties to agree that all on-ledger transactions or collateral arrangements taking place on a DLT platform are subject to a uniform choice of law. Such common law of the platform could then also be used to determine the situs of any tokens that are native to that DLT system.

Adopting this approach will require national governments, judiciaries, regulators and international standard-setting bodies to work on adapting or developing global legal standards aimed at ensuring the safe, transparent and consistent regulation of DLT-based financial transactions. It will be important, for example, to consider the appropriate mechanism for ensuring the system administrator or provider, the issuer of any tokenized assets and the parties to any transactions effected on the DLT platform continue to be subject to sufficient legal and regulatory oversight.

Achieving greater legal certainty across these areas will provide an important foundation for the development and implementation of innovative new technology within the derivatives industry, creating a more robust, efficient and cost-effective financial markets infrastructure.

[64] ISDA has published forms of ISDA Master Agreement and associated collateral documentation governed by the laws of England and Wales, New York, Ireland, France and Japan

[65] These papers can be accessed here: https://www.isda.org/2019/10/16/isda-smart-contracts/

About ISDA

Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has more than 925 member institutions from 75 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and international and regional banks. In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, intermediaries, clearing houses and repositories, as well as law firms, accounting firms and other service providers. Information about ISDA and its activities is available on the Association's website: www.isda.org. Follow us on Twitter, LinkedIn, Facebook and YouTube.

About Jones Day

Jones Day is a global law firm with more than 2,500 lawyers in 43 offices across five continents. The firm is distinguished by: a singular tradition of client service; the mutual commitment to, and the seamless collaboration of, a true partnership; formidable legal talent across multiple disciplines and jurisdictions; and shared professional values that focus on client needs.

About R3

R3 is an enterprise software firm that is pioneering digital industry transformation. We deliver purpose-built distributed ledger technology for all types of businesses in all industries.

Developed in collaboration with our ecosystem, our enterprise blockchain platform Corda is transforming entire industries by digitalizing the processes and systems that firms rely on to connect and transact with each other. Our blockchain ecosystem is the largest in the world with more than 350 institutions deploying and building on Corda Enterprise and Corda. Our customers and partners have access to a network of leading systems integrators, cloud providers, technology firms, software vendors, corporates and banks.

To ensure our customers derive the greatest value from their investment, we provide services and support to shorten time-to-market, as well as guidance on implementation, integration and building ecosystems based on a blockchain platform. Learn more at www.r3.com and www.corda.net.