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Shares in the Form of Ledger-Based Securities

I.   Ledger-Based Securities

1.   Introduction

In September 2020, the Swiss Federal Act on the Amendment of Federal Law with respect to Developments in the Technology of Distributed Electronic Ledgers (the **«DLT Act»**) was unanimously adopted by Swiss Parliament. The DLT Act is a framework act comprising a bundle of amendments to various existing Swiss federal acts. The amendments by which the so-called «ledger-based securities» (*Registerwertrechte; droits-valeurs inscrits*) were introduced into the canon of securities pursuant to the Swiss Code of Obligations (CO) entered into force on 1 February 2021, together with other amendments to the Federal Act on Private International Law (PILA) and the Federal Act on Intermediated Securities (FISA). Subsequently, on 1 August 2021, the DLT Act fully entered into force along with its implementing ordinance.

Swiss civil securities law has traditionally been rather rigid, making the changes brought about by the DLT Act particularly noteworthy. The DLT Act freed the way for a legally sound «tokenisation» of shares (and other types of financial instruments) by enabling the creation of ledger-based securities. Almost a year into the amendments becoming effective, a closer look at selected aspects of the law on ledger-based securities appears warranted.

2.   Nature and Legal Effects of Ledger-Based Securities

Ledger-based securities are uncertificated securities that can serve essentially the same functions as «traditional» certificated paper securities (*Wertpapier; papier-valeur*) or centrally registered book-entry securities (*Bucheffekten; titres intermédiés*). Any claim that can take the form of a paper security (whether fungible or non-fungible and whether or not issued in mass quantities) can, in principle, take the form of a ledger-based security. A key use case is the tokenisation of shares in Swiss companies limited by shares on the basis of a digital distributed ledger.

The new art. 973*d et seqq.* CO that have been introduced by the DLT Act provide for a non-deterministic set of rules on ledger-based securities and their legal characteristics, outlining the principles of their establishment, transfer, pledge and cancellation. Specifically, ledger-based securities are distinguished from «simple» uncertificated securities (*einfache Wertrechte; droits-valeurs simples*), which are governed by the amended art. 973*c* CO and which do not have the specific features and rights attached to ledger-based securities. In particular, the provisions of the CO on ledger-based securities protect the good faith of persons relying on the ledger entry (*e.g.* the debtor of a claim or the acquirer of a share in the form of a ledger-based security, *see* art. 973*e* CO) in a fashion similar to «traditional» certificated paper securities on the one hand or book-entry securities pursuant to the FISA on the other hand, while simple value rights do not offer such protection.

The rationale for vesting ledger-based securities with qualified statutory transactional protections is that ledger-based securities, among other elements, provide for (i) publicity in the form of a securities ledger that can be (and must be able to be) accessed by each creditor (*i.e.,* in the case of shares, each shareholder[1]), as well as (ii)

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[1] The CO exclusively uses the terms «creditor» and «debtor» in relation to ledger-based securities. Where shares in a company are concerned, this must be read as «shareholder», and «company» or «issuer», respectively.

qualified integrity created by an elevated level of pre-scribed technological safeguards and required resistance to manipulation of the securities ledger, all of which are intended to replace the trust in the physical instrument of a paper security or, in the case of book-entry securities, a regulated central custodian.

3. Requirements for the Securities Ledger under the CO

To warrant their status under the amended CO, ledger-based securities can only be created, exercised or transferred pursuant to a registration agreement among the involved parties and, importantly, by way of an eligible securities ledger fulfilling all of the four criteria set out in art. 973*d* para. 2 CO:

- the securities ledger has to enable the creditors (in the case of shares, the shareholders), but not the debtor (in the case of shares, the issuer), to dispose over their rights using technological processes;
- the integrity of the securities ledger has to be protected against unauthorised modifications using adequate technological and organisational measures, such as the collective administration by several independent parties;
- the content of the rights, the functionality of the securities ledger and the registration agreement have to be saved in the ledger itself or in linked associated data; and
- the creditors must be able to view the information and ledger entries concerning them and must be able to verify the integrity of the ledger content concerning them without the assistance of third parties.

II. Technology Neutral Approach – A Source of Legal Uncertainty?

Compared to the preliminary draft of the DLT Act dating back to March 2019, the requirements for an eligible securities ledger have been formally decoupled from the concept and terminology of a «distributed» ledger in the final act, although the requirements in nos. 2 and 4 of art. 973*d* para. 2 CO (*see* above) still implicitly point in that direction. The law does not provide for any specific guidance on the technological implementation of an eligible securities ledger nor on the content of the registration agreement, and neither is there any additional specific guidance at the level of an implementing ordinance. Instead, the details of the implementation of the ledger used are left for the issuer to decide on with considerable leeway within the relatively generic boundaries set by art. 973*d* CO.

This outcome of the legislative process is at the same time an expression of the principle of private autonomy in Swiss civil law, but also a safeguard against the law being overtaken by technical developments. As it stands, private service providers[2] have already developed initial solutions for securities ledgers pursuant to art. 973*d* CO and further developments of best practices and/or standard-setting in the private sector[3] can be expected.

Given the low level of real-life protection afforded by paper securities, which conceptually stem from a different time and can in practice be forged or falsified with relative ease, the standards for an eligible (distributed) securities ledger should not be set too high within the legal requirements of the CO. This, not least, with an emphasis on the protection of the parties relying on such ledger and, thus, the creation of legal certainty. Assuming this is also the view that will ultimately be taken by the Swiss courts, while ledger-based securities are a new instrument in the Swiss legal landscape, they can in our view offer a sound legal basis for the tokenisation of shares of Swiss companies and at the same time afford a higher level of protection to their holders compared to «traditional» certificated paper securities. Nevertheless, the securities ledger requirements should not be underestimated and it is worth examining in particular one of these requirements, the creditors' power of disposal over their rights, in more detail as it may pose certain practical problems.

III. Spotlight on the Power of Disposal of the Creditors

1. Requirement

The securities ledger must be designed in a manner to give the creditors, but not the debtor, power of disposal over their ledger-based securities by way of technological processes (art. 973*d* para. 2 no. 1 CO). This requirement was not part of the preliminary draft of the DLT Act and was only introduced into the law on the basis of comments raised in the legislative consultation procedure. In the context of tokenised shares, art. 973*d* para. 2 no. 1 CO translates to the shareholders having to be able to dispose over the ledger entries which represent their shares without the involvement of the issuer.

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2 *E.g.* daura, Mt Pelerin or LEXR are initiatives that provide securities ledger solutions. In addition, the Swiss Blockchain Federation aims at being a thought leader in this sector and has *e.g.* issued circulars to develop the legal practice.

3 *E.g*, the Swiss Blockchain Federation provides a registration agreement template as a free download on its website on <https://blockchainfederation.ch/registration-agreement-template/> (last visited on 18 January 2022).

The intention of this requirement (as also argued by the commentators in the legislative process) is to create a level of control by the creditors that in some ways is comparable to acquiring, holding or transferring a physical instrument such as a «traditional» certificated paper security.[4] The requirement also distinguishes ledger-based securities from book-entry securities, which are based on centrally kept registers maintained by regulated custodians that are mandated by the debtors and which the creditors have to go through to dispose over their rights.

While not spelled out explicitly, the aim of the provision, the background against which it was introduced and not least the choice of words «using technological processes» makes it clear that the legislator envisaged a certain degree of decentralisation of the securities ledger to separate its operation from the debtor and create an independent ability of the creditors to manage their ledger entries. This is also set out in the Federal Council's dispatch to the DLT Act, where it is stated that the transfer of ledger-based securities must not be dependent on a central administrative function managing the ledger on its own. At the same time, the dispatch concedes that other technological solutions might become available in the future that might enable and safeguard the power of disposal of the creditors in another manner.[5]

2. Interpretation and Practical Aspects

Given that an issuer of tokenised shares is not permitted to have «power of disposal» over the shares belonging to shareholders, the question arises if and to what extent certain intervention rights and/or technological intervention capabilities of the issuer can be provided for without infringing on the requirement of art. 973*d* para. 2 no. 1 CO.

For instance, an issuer might in practice wish to be able to restore access to tokenised shares that shareholders have «lost» (*i.e.* that are irretrievable due to a loss of private keys or similar circumstances) or freeze, burn (*i.e.* destroy), black- or whitelist tokenised shares for various purposes.

While technological intervention capabilities of the issuer can present solutions to practical issues that may arise due to the decentralised and in-principle immutable nature of DLT-based systems, they arguably clash to some extent with the continuous requirement for the shareholders, but not the issuer, to be able to dispose over their tokenised

shares. In our view, the requirement of art. 973*d* para. 2 no. 1 CO is not absolute, *i.e.* does not demand exclusive power of disposal of the creditors. However, broad intervention powers of the issuer with respect to the ledger entries without any clear boundaries as well as corresponding checks and balances to rein them in may in our view render a specific securities ledger solution ineligible for the issuance and management of ledger-based securities under the CO. Separately, administrative privileges of the issuer with respect to the ledger that do not affect the shareholders' registered rights should be admissible without specific constraints (*e.g.* in connection with the issuance of new ledger-based securities).

As the legal practice in this area evolves, it remains for the issuer to define its intervention powers, if any, such that they do not affect the securities ledger in a way that would call into question the legal qualification of the issued and registered rights. In our view, intervention rights should be kept to a minimum and ideally be limited to what is required in order to:

– ensure compliance with legal requirements or to enforce governmental orders (*e.g.* deactivating voting capabilities of shareholders that have not complied with the reporting requirements of the CO regarding the beneficial ownership of shares, or freezing ledger-based securities pursuant to a final and binding order of a competent court or authority);

– implement provisions set out in the articles of association of the issuer (*e.g.* whitelisting requirement for transfers of shares subject to transfer restrictions);

– adapt the ledger or the registered rights to changed legal/factual circumstances (*e.g.* the deletion, immobilisation or tagging of ledger-based securities that have been cancelled by a court[6], implementation of a share split or a squeeze-out in the context of a merger); or

– within narrow constraints, address potential technical issues relating to the underlying architecture, such as hard forks where a function to address the bifurcation of the securities ledger may need to be provided for.[7]

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4   Dispatch of the Federal Council on the Amendment of Federal Law with respect to Developments in the Technology of Distributed Electronic Ledgers of 27 November 2019, BBl 2020 233, 278 *et seq.*; Report of the State Secretariat for International Finance on the Legislative Consultation Procedure of 27 November 2019, 8; Swiss Blockchain Federation, circular 2021/01 «Ledger-based Securities» (updated version of September 2021), 5.

5   Dispatch DLT Act (FN 4), 278.

6   *See* also Dispatch DLT Act (FN 4), 288; by contrast, purely private mechanisms to invalidate/re-establish, restore or restore access to ledger-based securities that have become inaccessible by request of the last known holder, *i.e.* a sort of out-of-court, *praeter legem* cancellation procedure, should in our view be avoided given that the law explicitly addresses the matter of «lost» ledger-based securities in art. 973*h* CO.

7   Through a so-called «fork», the participants of a DLT system can amend the rules of the underlying system as soon as a defined number of participants so decides. In contrast to a soft fork, a hard fork changes the system at the level of the transaction database, whereby the changes are not compatible with the old system rules. This circumstance can lead to the fact that two independent system versions (chains) coexist; *see* STEFAN KRAMER/DAVID OSER/URS MEIER, Tokenisierung von Finanzinstrumenten *de lege ferenda*, Jusletter 6 May 2019, 29 *et seq.*; Swiss Blockchain Federation (FN 4), 6.

In addition to limiting the scope of intervention powers, the issuer is held to take measures to ensure the transparency of its powers and to prevent misuse. Such measures may be taken at various levels:

– *Registration agreement:* The issuers' intervention rights must be clearly and transparently disclosed in and accepted by the parties to the registration agreement (*i.e.*, in addition to the issuer, the first holders and any subsequent holders of shares issued as ledger-based securities). The contractual provisions should in our view not be limited to a mere reservation of rights, but should specify as concretely as possible the circumstances in which intervention rights may be exercised, the (limited) discretion afforded to the issuer and the safeguards applied.[8]

– *Governance framework:* The exercise of intervention rights should be subject to an adequate governance framework which ensures that the issuer cannot on its own dispose over or modify ledger-based securities and which should in turn be detailed in the registration agreement (*see* above) and secured by technological safeguards (*see* below). Specifically, this may include the definition of competent bodies and clear-cut decision-making guidelines (*e.g.* a requirement for a governmental order to trigger a burning or freezing operation) as well as the involvement of external, independent parties.[9]

– *Technological safeguards:* These should support compliance with the registration agreement and the associated governance framework. *E.g.*, verification and/or sign-off by an independent third party could be enforced by way of a «multisig» solution.

IV. Closing Remarks and Outlook

By introducing ledger-based securities into its civil securities law, Switzerland again articulated its claim for leadership regarding the adoption of DLT. The law has been drafted in a way as to foster the use of DLT as a base technology for a variety of use cases while at the same time remaining technology-neutral and open to further technological developments.

One may question whether the highly principle-based approach used by the legislator is equally suited to civil law, which is enforced by the general courts, as it is to financial regulation, where a supervisory authority with a force of experts can guide the application in practice through its oversight and enforcement powers. That said, the authors remain convinced that suitably resilient solutions for the tokenisation of shares and other assets will be developed over time, offering an adequate level of legal certainty. A responsible use of the possibilities granted by art. 973*d et seqq.* CO along with appropriate safeguards will be important in order for ledger-based securities to be recognised as a valid alternative to other forms of securities.

Once reliable best practices and industry standards have been developed and potentially tested in court, the technological underpinnings will in our view fade into the background and make way for a productive use of ledger-based securities by market participants as well as the development of associated infrastructures and ecosystems.

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[8] Swiss Blockchain Federation (FN 4), 6.
[9] Swiss Blockchain Federation (FN 4), 6 *et seq.*