Editorial

Global finance is in the middle of a radical transformation fuelled by innovative financial technologies exploiting big data, cryptography, artificial intelligence (AI) and machine learning, as well as new data sharing and distribution models. The transformation is affecting the entire financial value chain from capital raising and credit creation to payments and supply of financial services. Aided by an unusual macroeconomic environment manifested in ever-rising asset prices, unprecedented fiscal measures, and floor-breaking interest rates, the adoption of new technologies has gathered pace in the course of the Covid-19 pandemic. For example, just in a single week at the beginning of the pandemic the use of financial applications in Europe increased by more than 70 %.[1] While it is too early to tell whether the rallying cryptocurrency markets or meme stock debacles represent extreme signs of hubris or more fundamental structural changes in financial markets, some signs are clear. The emerging generation of digitally savvy retail investors is not only freer of home-country bias – the classic predicament of the European „single financial market" – but are also less likely to accumulate their savings on sticky bank accounts. Beyond retail markets, institutional interest and adoption of digital assets is also growing and more crypto firms and infrastructures are being licensed to offer financial services, which further blurs the boundaries between the crypto economy and traditional finance.

The post-Brexit EU, deprived of its global financial centre, cannot afford to ignore the rising tide of digital finance. The Union is struggling to keep pace with global innovation hubs, particularly when it comes to experimenting with new digital forms of capital raising.[2] There is emerging consensus that the digital transformation of the EU single financial market requires brave and radical action that goes beyond isolated measures such as the 2nd Payment Services Directive[3] that heralded the era of Open Banking and the 4th Anti-Money Laundering Directive.[4] Moreover, following a decade of centralisation and building of a single rulebook for the EU financial markets, the Member States have little other choice than to wait for the Commission's initiative.

1 European Commission, Factsheet: A digital finance strategy for Europe, September 2020

2 *PWC*, 6thICO / STO Report, A Strategic Perspective, Spring 2020 edition (PWC Report).

3 Directive (EU) 2015/2366 of 25 November 2015 on payment services.

4 Directive 2018/843 of the European Parliament and Council of 30 May 2018 amending the Anti-Money Laundering Directive (EU) 2015/849.

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The EU's strategic response has taken shape gradually alongside the EU's New Industrial Strategy,[5] which places digital finance at the centre of the mix of initiatives and policies aiming to achieve a more sustainable and competitive European economy. Finally, in September 2020 the Commission released a Digital Finance Package, which includes legislative proposals for a comprehensive legal framework for crypto-assets and market infrastructures based on distributed ledger technology (DLT). The proposals were joined with a revised Capital Markets Union strategy[6] and a new Digital Finance Strategy.[7]

The more advanced elements of the digitalization of finance such as the DLT, AI, and quantum computing technology as well as the rise of decentralised finance (DeFI) are setting the stage for a global battle of business models and philosophies, the outcome and consequences of which are unpredictable. Calibrating the EU digital finance strategy is therefore a balancing act that requires a deep understanding of the factors driving the transformation, be they legal, cultural, political or economic. This is challenging because the drivers are neither coherent nor do they all point to the same direction; some drivers promote decentralisation and increase competition, while others indicate that the future of finance might belong to few powerful firms and platforms. Similarly, while the transition to digital online finance may empower retail investors at a global scale and facilitate access to financial services, it also makes it more difficult to protect consumers and investors who are exposed to new channels of fraudulent or abusive conduct and risks that few understand. The same FinTech inventions that use AI, machine learning and big data to facilitate access to credit may also erect invisible barriers that further gender, social, racial and religious exclusion. The way such actors source, use and record data also presents countless data protection concerns.[8]

The joint organisers and co-editors of this special issue have collected a mix of established and promising law and finance scholars to scrutinise the challenges of digital finance from multiple public policy perspectives. First presented and discussed at a web-based conference 'Digital Capital Markets in Europe: The

5 Communication from the Commission, A New Industrial Strategy for Europe, 10 March 2020, COM/2020/102 final.

6 Communication from the Commission, A Capital Markets Union for people and businesses-new action plan, Brussels, 24.9.2020 COM(2020) 590 final

7 Communication from the Commission, a Digital Finance Strategy for EU, 24 September 2020, COM(2020) 591

8 European Commission, White Paper on Artificial Intelligence – A European approach to excellence and trust, COM(2020) 65 final; Communication from the Commission, Shaping Europe's Digital Future, COM(2020) 67 final.

Challenge of EU Market Integration' organised by the University of Helsinki Faculty of Law and the Edinburgh Law School in September 2020, the articles provide constructive and solutions-oriented analysis based on solid and up-to-date research.

The first three articles deal with the challenges of FinTech-enabled market transformation for the EU capital markets law, identifying several weaknesses in the existing as well as proposed legislation. The article by *Avgouleas* and *Seretakis* assesses the disruption of the financial services digital value chain by two radically opposing forces: oligopolistic market concentration based on platform finance operated by dominant global financial institutions and BigTech, on one hand; and the radical democratisation of investment markets brought about by open source DeFi protocols, on the other. Welcoming the Commission's digital finance package as a necessary first step, they argue that the package nevertheless reinforces the first trend while it underestimates the potential benefits of the latter. Therefore, Avgouleas and Seretakis suggest that the proposed DLT pilot regime should be widened to include also DeFi platforms, which are currently incompatible with the MiFiD II's complex web of rules. They offer a number of possible solutions to the integration of DeFi under the umbrella of EU EU financial services law. The article by *Macchiavello* and *Sciarrone Alibrandi* investigates marketplace lending, a more established but dynamically evolving market segment which raises important challenges. Based on careful unpacking of the dominant business models they argue that these platforms involve novel technological and other features which should be addressed by tailor-made legislation. At the same time, they identify a number of failures in the recently completed EU Regulation on European Crowdfunding Services Providers (ECSP). While effectively enhancing the protection of unsophisticated investors, they note that the Regulation failed to introduce flexible and functional rules for Europe's evolving crowdfunding ecosystem. Instead, they argue that the ECSP Regulation, and the extensive level 2 technical rules that followed it, establish an unnecessarily detailed and rigid regulatory framework that only applies to a limited number of services and products. As a result, the ECSP regulation could have a suffocating effect on this nascent financial industry in Europe, possibly transforming the lending/investment platforms from relatively neutral tech platforms into more traditional investment firms. The third article by *Giudici* and *Ferrarini* presents a critical view on the proposed Regulation on Markets in Crypto-Assets (MiCA). They argue that the proposal simply mirrors existing regulatory philosophy by imposing mandatory disclosure requirements on all issuers of crypto-assets, while ignoring alternative mechanisms based on market discipline and private enforcement. To facilitate new forms of capital raising and to avoid suffocating market

innovation, they call for a more experimental regime that would offer a categorical exemption from EU disclosure rules to blockchain startups.

The regulation of new technologies in capital markets is not easy and interventions are often dictated by a crisis-induced precaution and haste. As *Gerner-Beuerle's* article shows, such efforts may turn out to be ineffective and have unintended consequences. The article shows that current regulations targeted at algorithmic and high-frequency trading stand on a particularly weak theoretical and empirical ground. The paper undertakes a comprehensive and critical review of the current regulatory tools concerning algorithmic and high frequency trading, arguing that there is little empirical support for most measures (especially so-called circuit-breakers). Gerner-Beuerle suggests that EU securities regulation should be better informed by market microstructure theory, e. g., as regards the mechanics of price formation, and tread with caution in areas where regulatory understanding remains incomplete.

The next two articles adopt a broader public policy perspective considering issues such as fairness and sustainability in the provision of digital financial services. Read together they offer a thorough exposition of the trade-offs and often intractable dilemmas raised by digital finance. The article by *Langenbucher* and *Corcoran* assesses how FinTech companies that embrace alternative credit scoring models based on AI fit into existing consumer lending, data protection and anti-discrimination regulations in the U.S. and EU and how these regulations need to be adjusted. The article adopts a case study approach, focusing particularly on a U.S. company Upstart.com and its AI-based credit scoring model as well as the no-action letter granted to the company by the U.S. Consumer Financial Protection Bureau. Identifying a number of risks and problems, the article demonstrates with clarity how machine learning algorithms deriving complex correlations from large data pools might give rise to indirect and hard-to-detect discriminatory practices. *Chiu's* contribution investigates the existing and missing links between sustainable and digital finance. She argues that the present policy initiatives are under-ambitious and incomplete particularly when it comes to the retail market. Sustainability criteria should be better integrated into the suitability assessments conducted under the MiFID II's investment advice regime. Looking further afield, she suggests adjusting the investment advice regime with a view to co-opting digital platforms and robo-advice channels to marketize indexes comprising sustainably-labelled financial products.

The final two articles by *Kulms* and *Marjosola* investigate the private law dimension of the EU digital capital markets from different angles. Kulms' article offers a broad perspective on the dynamic interface between FinTech regulation and private law using as test cases the law and regulation of five market segments: payment services, outsourcing of business models, crowdlending, robo-advice,

and blockchain applications. Kulms posits that the Commission's digital finance strategy presents a tacit appeal to Member States to develop gap-filling private law remedies and thus trigger competition between national private legal orders. Highlighting several shortcomings of this approach, particularly in the areas of legal liability and data protection law, the article anticipates more centralised regulatory solutions. Finally, Kulms assesses the potential of regulatory sandboxes to operate as early warning mechanisms in identifying areas where the relationship between financial regulation, commodification of data and private law needs to be recalibrated. Marjosola's article assesses the EU Digital Finance Package from the perspective of token holders' proprietary rights and EU securities law. Marjosola welcomes the innovative and decentralised sandbox approach of the DLT Pilot Regime, which aims to encourage experimentation within the single financial market. Nonetheless, the article argues that the complete lack of private law harmonisation would magnify the unresolved legal risks of intermediated securities and further fragment the private law underpinnings of the EU capital market. The onset of security tokens and DTL-based holding systems necessitate a rethink of the scope of the EU's stagnated securities law harmonisation project. The new harmonisation agenda should, according to Marjosola, focus more clearly on transparent or disintermediated holding systems, which have been largely ignored, but also re-examine the current conflict of laws *acquis* regarding intermediated securities.