

## LIST OF PUBLICATIONS

### DIGITAL ASSETS

#### Central Bank Digital Currencies (CBDCs) and democratic values



Discussions on Central Bank Digital Currencies (CBDCs) have so far mostly focused on the potential risks that these currencies could represent for financial intermediation and financial stability. It is important, however, to also consider how they could contribute to the welfare of citizens, and how they can be leveraged to help uphold certain democratic values. This paper explores how the design and implementation of CBDCs can help countries mitigate threats to individual liberties and human rights, as well as promote the equitable treatment of citizens, the protection of privacy, and citizens' trust in central banks. The sound governance architecture of CBDC systems at the national and international level can further support these objectives.



#### Lessons from the crypto winter : DeFi versus CeFi



This paper analyses the mechanisms involved in the recent failings in crypto-asset markets, focusing on events in 2022 through September. The paper assesses the role of centralised finance (CeFi) and decentralised finance (DeFi), and the disproportionate impact the crypto market turmoil has had on retail market participants. It examines learnings of the recent crypto-asset market downturn, also known as the “crypto winter”, including high interconnectedness within the crypto-asset ecosystem; elaborate mechanisms of financial engineering that heavily use leverage and are built on the composability offered by DeFi (i.e., components of DeFi are pieced together to create new products); and increased market concentration. The paper also highlights the urgency for policy action and provides policy recommendations.



#### Why Decentralised Finance (DeFi) Matters and the Policy Implications



Growing application of Decentralised Finance or DeFi and its increasing interconnectedness with traditional markets presents an urgent challenge for policy makers, as DeFi applications give rise to important risks and challenges for participants and the markets.

This report provides an explanation of DeFi and its applications and then describes the evolution of DeFi markets to date. It explores the benefits and risks of DeFi and the DeFi/CeFi intersection and puts forward policy considerations.



## Institutionalisation of crypto-assets and DeFi–TradFi interconnectedness



This report examines institutional investor participation in markets for digital assets, including crypto-assets and decentralised finance (DeFi). It considers and tests potential drivers of growing supply and demand for such assets by institutional investors, analyses the potential for increasing interconnectedness between traditional finance (TradFi) and decentralised finance and identifies linkages between the two. The report then outlines the risks these growing markets may create, while also examining the potential benefits of the decentralisation of financial services, before putting forward policy recommendations.



## Environmental impact of digital assets : Crypto-asset mining and distributed ledger technology consensus mechanisms



Crypto-asset markets are rapidly developing and reached USD 3tn in late 2021, yet the infrastructure supporting mainstream crypto-assets, such as the Bitcoin, use an enormous amount of energy. This paper explores the growing environmental impact of crypto-assets due to increasing institutional and retail investors participation in these markets. The use of energy-intensive transaction validation through Proof-of-Work consensus mechanisms and the corresponding carbon footprint create climate transition risks for market participants. Policy considerations and action are necessary given the carbon footprint and associated climate transition risks of certain digital assets when combined with negative externalities extending to the wider society.



## (Working Paper) DeFi liquidations : Volatility and liquidity

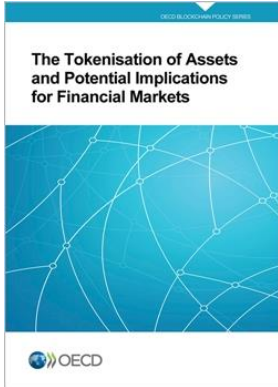


This work delves into the liquidations mechanism inherent in Decentralised Finance (DeFi) lending protocols and the connection between liquidations and price volatility in decentralised exchanges (DEXs). The analysis employs transactional data of three of the largest DeFi lending protocols and provides evidence of a positive relation between liquidations and post-liquidations price volatility across the main DEX pools. Without directly observing the behaviour of liquidators, these findings indirectly indicate that liquidators require market liquidity to carry out large liquidations and affect market conditions while doing so.



## TOKENISATION OF ASSETS AND DLT-BASED FINANCE

### The Tokenisation of Assets and Potential Implications for Financial Markets



The tokenisation of assets involves the digital representation of real (physical) assets on distributed ledgers, or the issuance of traditional asset classes in tokenised form. Asset tokenisation has become one of the most prominent use-cases of distributed ledger technologies (DLTs) in financial markets, for assets including securities (e.g. stocks and bonds), commodities (e.g. gold) and other non-financial assets (e.g. real estate), and with potential cross-cutting implications for financial market practices and participants, market infrastructure and regulators across a large range of financial instruments and asset classes



### Regulatory Approaches to the Tokenisation of Assets

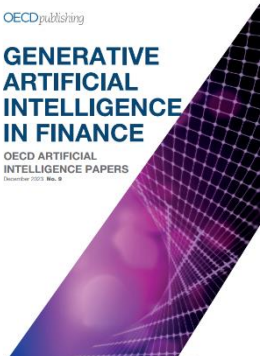


The tokenisation of assets involves the digital representation of real (physical) assets on distributed ledgers, or the issuance of traditional asset classes in tokenised form. This report provides conceptual clarity on asset tokenisation and the approaches that policymakers are adopting vis-à-vis this nascent market, without evaluating or assessing any of these approaches. The report also identifies some key regulatory issues in tokenised assets and markets that policymakers should be aware of and/or which may warrant attention by policymakers. An annex features a substantial list of policymaking approaches taken by different countries concerning asset tokenisation markets and their participants.



## ARTIFICIAL INTELLIGENCE IN FINANCE

### Generative artificial intelligence in finance



The rapid acceleration in the pace of AI innovation in recent years and the advent of content generating capabilities (Generative AI or GenAI) have increased interest in AI innovation in finance, in part due to the user-friendliness and intuitive interface of GenAI tools. The use of AI in financial markets involving full end-to-end automation without any human intervention remains largely at development phase, but its wider deployment could amplify risks already present in financial markets and give rise to new challenges. This paper presents recent evolutions in AI in finance and potential risks and discusses whether policy makers may need to reinforce policies and strengthen protection against these risks.



## Artificial Intelligence, Machine Learning and Big Data in Finance



Artificial Intelligence (AI) techniques are being increasingly deployed in finance, in areas such as asset management, algorithmic trading, credit underwriting or blockchain-based finance, enabled by the abundance of available data and by affordable computing capacity. Machine learning (ML) models use big data to learn and improve predictability and performance automatically through experience and data, without being programmed to do so by humans. The report can help policy makers to assess the implications of these new technologies and to identify the benefits and risks related to their use. It suggests policy responses that are intended to support AI innovation in finance while ensuring that its use is consistent with promoting financial stability, market integrity and competition, while protecting financial consumers



## **OPEN BANKING / OPEN FINANCE**

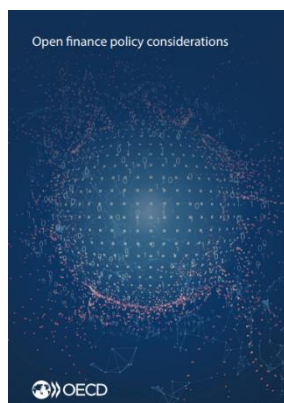
### Shifting from open banking to open finance: Results from the 2022 OECD survey on data sharing frameworks



Data sharing arrangements are evolving from open banking to open finance. This next stage of the evolution builds upon existing frameworks to expand data access and data source sharing beyond payment/transaction data, while also including other areas of financial activity (e.g. insurance). This paper analyses the different types of data sharing frameworks currently available in OECD and non-OECD member countries. It examines the specific rules and conditions of such frameworks around data access and sharing, consumer safeguards, and operational and technical specifications. It also discusses learnings from existing frameworks on the impact that such arrangements have had on customers and financial markets.



### Open finance policy considerations



Open finance enables the sharing of, and access to, financial sector data. This paper analyses the benefits, risks and implementation challenges of Open finance and provides policy recommendations for the safe and successful implementation of such data-sharing frameworks in finance. It considers the impacts of providing access to customers' financial data and how to do this responsibly and safely, with due consideration for data privacy. The paper also discusses other consumer safeguards, notably related to consent and liability. Finally, it considers whether there is a need to support the development of technical infrastructure to promote data interoperability.



## FINTECH LENDING

### Marketplace and FinTech lending for SMEs in the COVID-19 crisis



This report analyses the potential of the marketplace lending (MPL) model of online credit intermediation to finance small and medium-sized enterprises (SMEs) on a large scale, including the evolution of this model, its comparative advantage to banks and its benefits to borrowers, investors/funders and the market for SME financing. It also covers the risks this model presents, and limitations to its growth. Given the use of FinTechs to facilitate government support to SMEs throughout the COVID-19 crisis, the report analyses the involvement of MPL and FinTech lenders in the roll-out of government guaranteed loans in certain jurisdictions and the learnings from this experience. It then examines the benefits and limitations to their participation and derives lessons for future crisis support programmes.



## DIGITAL FINANCE IN ASIA

### Digitalisation and Finance in Asia



The Asian region is home to the highest number of online internet users, who are the demographic most keen to adapt new technologies and most comfortable with using cashless payments, crypto-assets, and digital financial services. At the same time, parts of the Asian region remain unbanked or underbanked. The report can help policy makers to assess the implications of these new technologies and to identify the benefits and risks related to their use in finance in the Asian region and beyond. The exponential growth of digitally-enabled financial services and products, and the global nature of many of these applications, call for international collaboration and dialogue to promote coordinated action and policy responses to prevent regulatory arbitrage and address emerging risks.



### Alternative financing instruments for ASEAN SMEs



This publication offers guidance to policy makers in Southeast Asia to enable small and medium-sized enterprises (SMEs) and entrepreneurs to access a broad range of financial instruments. It provides an overview of eight alternative financing instruments beyond traditional bank lending, namely: leasing, factoring, private equity, venture capital and business angel financing, specialised SME exchanges, debt crowdfunding/P2P lending, equity crowdfunding, blockchain-based financing, and trade finance.



## COUNTRY STUDIES

### The FinTech Ecosystem in the Czech Republic



This report describes the structure of the FinTech sector in the Czech Republic and the associated regulatory and supervisory frameworks. It analyses the enabling conditions for FinTech innovation as well as potential hurdles. The findings are based on responses from Czech FinTechs to an OECD survey which assessed market innovations, opportunities and obstacles, the access to and use of data, and the potential benefits of establishing a regulatory sandbox.



### INNOVATION FACILITATORS / SANDBOXES

#### Supporting FinTech Innovation in the Czech Republic: Regulatory Sandbox Design Considerations



The FinTech sector is a nascent market in the Czech Republic, with only around one hundred regulated or unregulated FinTech firms. This report analyses the Czech FinTech ecosystem and identifies possible hurdles to innovative development. The report also provides recommendations for designing a regulatory sandbox tailored to the country's specificities and which could help alleviate some of the impediments to FinTech development. A sandbox could enhance the Czech authorities' understanding of the impact of innovative mechanisms on financial activities, and enable supervisors to better monitor and ensure compliance of FinTech activities. It could also enhance communication between firms and authorities through targeted dialogue and customised guidance.

