Report on financial technology (FinTech). June 2017.

In February, the International Organisation of Securities Commissions (IOSCO) published a research report on the evolution of FinTech –technology affecting financial services– and how it interacts with financial markets regulation.

The term FinTech is used to describe a variety of innovative business models and emerging technologies that have the potential to transform the financial services industry. Innovative business models typically offer one or more specific financial products or services in an automated fashion through the use of the internet, such as peer-to-peer crowdfunding and lending platforms, robo advisers and social trading platforms. Emerging technologies, such as artificial intelligence and distributed ledger technology (DLT) can be used by new players and traditional incumbents alike and have the potential to radically change the financial services industry.

The report was prepared with the collaboration of different IOSCO Committees coordinated by the Committee of Emerging Risks (CER). It incorporates the conclusions of three surveys carried out between December 2015 and June 2016. The first of these, run by the CER and Growing and Emerging Markets Committee (GEMC) sought to understand what types of FinTech firms existed in different jurisdictions, the key regulatory responses by states and the way such firms went about onboarding clients. The second survey, a joint initiative between the World Federation of Exchanges (WFE), CER and the IOSCO Affiliate Members Consultative Committee (AMCC), explored the sector's approach to DLT. The third survey was carried out by GEMC alone and reviewed the development of FinTech in emerging markets.

The document divides the FinTech phenomenon into eight categories: payments (processing, mobile transfers, forex payments with credit cards, etc.), insurance (broking, underwriting, claims, risk tools, etc.), planning (personal finance, retirement planning, enterprise resource planning, compliance, data storage, etc.), crowdfunding/lending (crowdfunding, peer-to-peer lending, corporate loans and mortgages, etc.), blockchain (virtual currency transactions, smart contracts, etc.), trading and investments (robo advisers, automated trading, etc.), data and analytics (data visualisation, data providers, predictive analytics, etc.) and, finally, security (digital identity, authentication, fraud prevention, cyber security, data encryption, etc.).

The report goes on to examine in greater detail the following points directly related to securities markets:

1) Peer-to-peer financing platforms, where users can buy shares or other equity interests (crowdfunding) or take out loans (crowdlending).

Although no data is available to estimate with certainty the size of this market, figures from North America and China show significant growth in the alternative financing market compared to the banking market in 2013-2015. Most of this took the form of crowdlending, mainly peer-to-peer consumer loans. The volume of corporate loans was considerably less. Financing from crowdfunding was less than that obtained by crowdlending.

The regulatory picture, meanwhile, is fairly varied. While some jurisdictions have adopted a specific regulatory regime, in others, alternative finance is governed by existing codes, such as the obligation for securities issuers to publish a prospectus unless exceptions apply. Most specific regimes require platforms to be licensed and recorded in the corresponding register. There are also often limits on the amounts retail investors can invest. The lack of liquidity in such investments has led some countries to develop secondary markets, such as China, Malaysia and Korea. In Korea, for instance, the platform can contract a fund to buy out the retail investor.

2) Trading/investment platforms which offer online financial services and whose technologies allow the retail investor to take informed investment decisions.

a) comparison sites for investment products in three sectors: banking, insurance and securities. They usually charge either per click to see a page's content or more traditionally by commission. They are heavily used by younger generations. If the comparison sites provide financial advice or take and transmit buy orders, some

jurisdictions require them to be licensed.

b) aggregator platforms that consolidate their client's financial information. Some may offer other services using the data they mine, such as financial advice or portfolio management.

c) robo-advisers, new investors fill out a risk profile and set an investment target. The sites use algorithms to build, manage and re-balance investment portfolios. Usually they pick a set of exchange-traded funds (ETFs) to create a diversified, liquid and cheap portfolio tailored to the investor's objectives. They normally need to be licensed and registered. Platforms can be fully automated or require some human intervention.

d) social trading platforms, where participants in a social network, for instance, follow a leader of their choice which allows them to replicate their investment strategy. The leader may or may not be a professional. The services provided by these platforms can include portfolio management and, in some cases, order execution. Regulations vary across jurisdictions. In Europe, ESMA considers this to be portfolio management (see question 9, in the MiFID Q&A on investor protection and intermediaries). In North America, some platforms are registered as financial advisers, others are exempted on the grounds that they only publish financial data and, a third group, are registered as broker-dealers.

e) social media sentiment, research and networking platforms. Social media sentiment sites analyse and aggregate information to identify what the investor wants. Social networking sites allow users to share, discuss and exchange trading ideas which may later lead to a rise in real trading volumes.

A risk common to all such platforms arises from the use of algorithms, which come with specific risks. These include the possibility of errors, an overly simple algorithm that does not capture enough data from the client or an overly complex one, or out-of-date client information used by the algorithm. Jurisdictions are starting to take an interest in the phenomenon of robo-advisers issuing guidance, clarifications and recommendations.

3) Institutional fixed-income trading platforms where thin liquidity has prompted interest in whether technological solutions can create greater efficiency in connectivity and data management.

The proliferation of electronic trading venues for bonds and the various alternative protocols they use have created problems of interconnectivity between venues and simultaneously led to the development of an advanced generation of open standard application programming interfaces (APIs). It has also led to a leap in the availability of structured and unstructured data in this asset class, which requires technological tools to analyse and filter data flows from multiple sources in order to identify opportunities to find liquidity and improve price discovery. Specifically, in unstructured data a number of technology providers have specialised in compliance with the need to monitor market abuse. Their products can, for instance, interpret diverse kinds of information ranging from dealer conversations to analysts' research notes and corporate profit releases.

4) Distributed Ledger Technologies (DLT).

Distributed ledger technology is a data base held on a network that is accessible to and controlled by multiple users, each of whom forms a node of the network. Updated data is recorded as a new data block, normally made up of various transactions, which have to be validated by the nodes in accordance with the consensus. DLT can have two types of access: permissionless, where access is public and fully decentralised, or permissioned, where participants have to be approved and the data base is not fully decentralised. In the latter case, the ledger can be fully public or contain some parts where access is restricted to certain nodes. In both cases, trust between participants is replaced by trust in a mathematical consensus algorithm.

Tokenisation is the process of digitally representing an asset or ownership of an asset. For DLT to achieve consensual acceptance the token needs to be recognised as proof of ownership of the asset. It also needs a currency to settle trades done using DLT. Smart contracts are IT programmes written in the distributed ledger. For these contracts to be used in legal exchange they need to be enforceable in law and modifiable if an error is identified in the code.

The financial industry is analysing restricted access DLT and its possible applications. It has so far announced proof of concept tests using DLT in the following areas: keeping corporate records, making some corporate action processes more efficient (dividends, coupons, proxy voting), re-vamping post-trading operations of exchange-traded equities, trading and settling OTC derivatives, facilitating loan syndication, tracking repo transactions and re-hypothecation, trading short-term debt, automation of KYC and AML compliance processes among financial institutions, individual digital ID and an alternative financing project using the Ethereum platform.

Regulators can participate as nodes in DLT systems giving them access to real-time data and allowing them to maintain fuller registers. To do this, they need to decide whether such access is desirable, as it would require a highly automated supervisory system and the hiring of technology experts. Regulatory initiatives thus far have been thin on the ground. Besides an ESMA report there is a draft bill in France that would allow certain unlisted securities to be traded on a DLT platform. The Financial Industry Regulatory Authority (FINRA) also published a document early this year to contribute to the debate on the use of DLT in the securities sector. Other regulatory authorities are familiarising themselves with DLT by research, labs, innovation centres and proof of concept studies.

Links:

IOSCO report on financial technologies.

MiFID Questions and Answers Investor Protection & Intermediaries.