EUROPEAN CENTRAL BANK

BANKING SUPERVISION

Supervisory considerations on modern Big Data and AI approaches

Fintech-HO2020 workshop
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What is fintech?

Financial Technology (Fintech) is an umbrella term, encompassing a wide variety of business models

In line with the ECB's responsibilities, we refer to **bank business models** in which the production and delivery of banking products and services are based on **technology-enabled innovation**.

Fintech is transforming the business model of banks

Incumbent banks are increasing investments in technological innovation by internal development, partnering with third-parties offering specialized services, or acquiring fintech start-ups.

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… BBVA

New banks are entering the market with business models that are shaped by state-of-the-art technology, enabling the development and provision of innovative banking products and services.

Revolut

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non-bank fintech entities offering innovative products/services pose challenges

Need for a common understanding of the implications that technological innovation has for banks' business models and their risk management processes

Overview of SSM Fintech Work

Licensing

Guide to assessments of Fintech credit institution licence applications

Supervision

Assessing the impact of various technologies on banks’ business models and their application in various activities.

ECB initiatives

SSM Fintech Hub

Improving the sharing of information and harmonising the best practices across the SSM

Cooperation & Dialogue

Public consultations and industry dialogue

Exchanges with regulators (COM, EBA) and NCAs in and outside of the SSM

SSM approach to supervision of banks using fintech

- The ECB and the national competent authorities (NCAs) acknowledge the **benefits emerging from fintech**, which offers significant opportunities for both banks and consumers. Our philosophy is **technology-neutral** and seeks neither to support nor to discourage the use of any particular fintech solution.

- **All SSM banks**, both incumbents and market entrants, regardless of their business model, **are in charge** for putting in place adequate risk management processes to address the risks they face, **including emerging fintech related risks**.

- The ECB ensures that all SSM banks are **licensed in a consistent manner**, taking account of their specificities.

- **Supervisors need to understand** the impact of fintech on banks' business models, as well as on the risk management processes.

- Against this background, our objective is to promote a **common understanding of fintech related risks and to ensure a consistent supervisory approach** across the SSM, based on the current regulatory framework and fully aligned with the European Banking Authority (EBA).

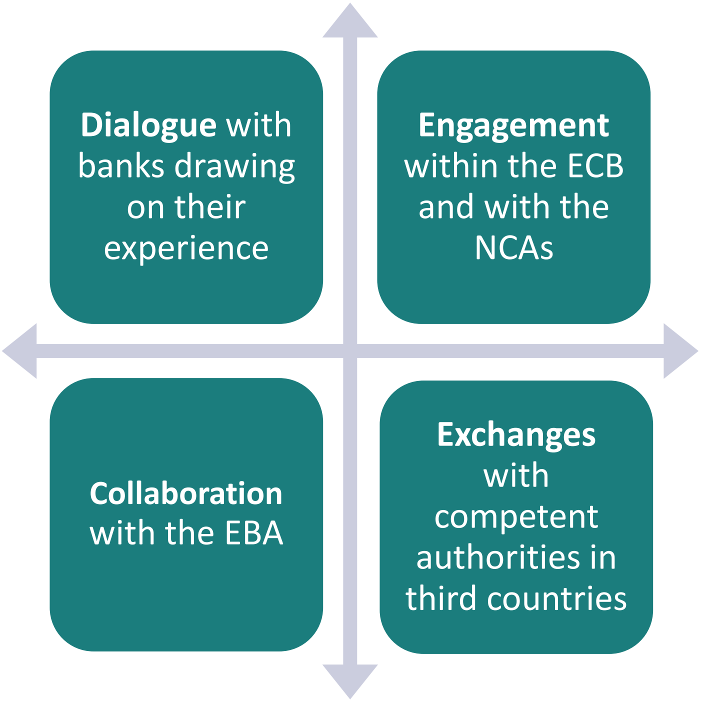
SSM fintech supervisory approach

- The **ECB,** together with the national supervisors (**NCAs**) and in cooperation with the **EBA,** is analysing technologies which are having an **impact on the business models and risk control frameworks** of incumbents and market entrants.

- In developing its approach to fintech supervision, the ECB engages in an **open dialogue with banks**, collaborates with the EBA, draws upon expertise from across SSM supervision and engages with non-SSM competent authorities.

- The fintech industry dialogue helps to facilitate **information-sharing** between SSM banks and supervisors and ultimately contribute to the development of a common SSM approach to fintech supervision.

- As part of the first ECB Fintech Industry Conference on 21-22 May 2019 also **robo-advisory services** was discussed.



For discussion today…

Among the technologies relevant for our work, two are of particular importance today:

1. **Credit scoring** using artificial intelligence (including machine learning) and big data;
2. **Robo-advisory** services, which can make use of AI;

Key aspects of this technology in the banking context are:

- The **business model** impact;
- The **maturity** of each technology;
- The potential **risk impact** and implications for banking supervision.

The **approach** followed for each topic is as follows:

✓ A **definition** and description of the technology/business solution in focus is provided;

✓ Potential **business model implications** arising from the use of the technologies are provided

✓ Various perspectives on the main **risks associated with the use of the technology / solution** are given, followed by *tentative* areas of **supervisory focus**;

Credit scoring using AI - BD - Tentative areas of supervisory focus

Risk category	Areas of supervisory focus
Governance, risk management & compliance	• Assessing management’s technical skills, knowledge and experience • Assessing banks’ performance metrics designed to capture innovative aspects of credit scoring • Ensuring that banks have the appropriate know-how and processes to identify and manage potential incremental risks, related to customer or third-party data privacy and use • Ensuring that banks consider whether the use of AI/ML could inadvertently lead to proxy discrimination, given the potential opacity of algorithms
Operational risk	• Ensuring that banks have in place appropriate safeguards to check data integrity • Ensuring that banks have in place verification and validation techniques to detect and mitigate security and operational risks
Operational risk	• Assessing whether banks have in place safeguards to manage incremental needs for cyber risk management, cyber hygiene and cyber resilience • Ensuring that banks develop metrics which flag data quality issues in a timely manner

Robo advice - Tentative areas of supervisory focus

Risk category	Areas of supervisory focus
Governance and risk management	• Assessing how banks oversee the development and implementation of the robo-advisory model; • Assessing whether banks have sufficient oversight of third-party tools/providers; • Assessing the governance process if the development of the algorithm has been outsourced; • Reviewing the robo-advisory's remuneration policy, including a review of the principles of the fee structure.

Robo advice - Tentative areas of supervisory focus (cont'd)

Risk category	Areas of supervisory focus (continued)
Operational risk	• Assessing how banks perform monitoring and testing of the algorithm that underpins the advice; • Reviewing whether banks have effectively implemented precautionary mechanisms (e.g. halting service in the event of errors or bias; business continuity plans)
Business model risk	• Ensuring that banks include in their business plans an assessment of vulnerabilities related to the use of robo-advisory services

ECB Fintech Industry Dialogue (21/22 May 2019)

Panellists from the ECB, supervised banks and regulatory bodies including the EBA participated

Discussions focused on:

- **credit scoring using artificial intelligence and big data**
- **robo advisory services**
- **cloud computing**

Key Takeaways:

- New skills set required for **banks and supervisors**
- AI in credit scoring often used as challenger models
- Can open up **new client bases** and **borderless services**
- Banks are free to innovate but still ultimately **responsible for risk management**

Questions?

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