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SURVEY REPORT

# CFA Institute and CFA Society Spain Briefing Paper on Fintech in the EU

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## Introduction

In light of the European Commission's current digital strategy<sup>1</sup> and other regulatory measures that EU countries have put in place, CFA Institute and CFA Society Spain conducted an informal survey in 2022 with CFA Institute European member societies. This survey was designed to spread awareness of fintech<sup>2</sup> developments and trends among our CFA Institute members in the EU. To this end, it was necessary to understand similarities and differences concerning the local landscape on fintech in the EU and to gauge the perceived impact of these new technologies in local markets based on the representativeness of the members of those member societies. In particular, we received feedback from our member societies in Croatia, France, Germany, Greece, Italy, and Spain.

CFA Institute has closely monitored fintech developments around the world in the past several years and has published two surveys<sup>3</sup> that focus on possible regulatory measures aiming to make sure that markets remain safe and sound when financial technologies are used in the financial services industry. The surveys also looked at the level of penetration of machine learning and artificial intelligence in EU financial markets. In addition, in 2019, CFA Society France and CFA Institute jointly published "Initial Coin Offerings—Too Soon or Too Late?,"<sup>4</sup> which analyses the French regulatory approach to initial coin offerings (ICOs). Finally, CFA Institute recently released the research paper "Cryptoassets: Beyond the Hype,"<sup>5</sup> which provides a practitioner analysis of

<sup>1</sup>See the European Commission's "Shaping Europe's Digital Future" webpage: <https://digital-strategy.ec.europa.eu/en>.

<sup>2</sup>Fintech is defined at the EU and international standard-setting levels as "technologically enabled financial innovation that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services."

<sup>3</sup>See CFA Institute, "Fintech Survey Report" (April 2016). [www.cfainstitute.org/-/media/documents/survey/fintech-survey-report-2016.pdf](http://www.cfainstitute.org/-/media/documents/survey/fintech-survey-report-2016.pdf).

See also CFA Institute, "Fintech Survey 2: Has AI and Machine Learning Adoption Advanced?" (June 2020). [www.cfainstitute.org/-/media/documents/survey/cfa\\_fintech\\_survey\\_2\\_web.PDF](http://www.cfainstitute.org/-/media/documents/survey/cfa_fintech_survey_2_web.PDF).

<sup>4</sup>CFA Institute and CFA Society France, "Initial Coin Offerings—Too Soon or Too Late?" (November 2019). [www.cfainstitute.org/-/media/documents/article/position-paper/initial-coin-offerings.pdf](http://www.cfainstitute.org/-/media/documents/article/position-paper/initial-coin-offerings.pdf).

<sup>5</sup>Stephen Deane and Olivier Fines, "Cryptoassets: Beyond the Hype," CFA Institute (January 2023). [www.cfainstitute.org/-/media/documents/article/industry-research/crypto-beyond-the-hype.pdf](http://www.cfainstitute.org/-/media/documents/article/industry-research/crypto-beyond-the-hype.pdf).

the manner in which investment professionals consider cryptoassets and how such instruments are used for integration purposes into investment management decisions and asset allocation portfolios.

Our new survey on fintech focuses on the way in which European local societies and their members have engaged on fintech developments, as well as the challenges and benefits that they have experienced as financial technologies have been increasingly adopted in the investment industry. Survey respondents also gave their views on how the financial sector is expected to transform in the future as fintech tools continue to develop and evolve.

**The main takeaways of the new survey are as follows:**

- Fintech developments are likely to create more employment opportunities in the areas of portfolio management, relationship/wealth management, and data science.
- The proliferation of financial technologies is expected to mainly result in cheaper financial services for investors. Other possible outcomes include a better customer experience, an increase in the range of offerings of financial products and services, a higher rate of customer turnover, and increased competition. However, the survey also highlighted some investor protection concerns.
- The current legislative framework needs some adjustments to deal with the challenges emerging from a greater use of fintech innovations in the industry.
- The main benefits of automated financial advice services are likely to be lower costs and easier access to financial advice for individual investors. The principal risks include flaws in automated financial advice algorithms, privacy and data protection concerns, and mis-selling practices.
- Blockchain technology is expected to have the most important impact in the financial services sector over the next five years.
- Financial institutions have been increasingly looking at big data to analyse and better predict their clients' behaviour. Such technology has especially been used to manage operational and compliance risks.

## Survey Methodology and Results

A questionnaire was completed by Advocacy Committee chairs and members of local societies in Croatia, France, Germany, Greece, Italy, and Spain in June and July 2022.

The survey was divided into four different sections: (1) Engagement on Fintech, (2) Impact on Strategy, (3) Local Landscape, and (4) Impact of New Technologies.

In the Engagement on Fintech section, the survey includes questions concerning local societies' interest in fintech developments and any observed advantages and challenges in the promotion of fintech initiatives in their local market, as well as any barriers in compliance with the regulatory framework. All local societies that provided their feedback highlighted that they have held several initiatives and events on financial technologies in the investment industry. A large majority of survey respondents (83%) said that artificial intelligence (AI), including machine learning technology, has been the main topic of engagement for local societies. Other relevant fintech-related themes have been big data analytics, digital skills, and cryptoassets.

In terms of how local societies have engaged on fintech, they typically have held webinars and events for their members and other stakeholders. Few local societies have undertaken other initiatives, however. As one example, CFA Society Spain launched the Certificate in Artificial Intelligence in Investments and Banking (CAIIB), which offers a 360-degree view of all

relevant aspects of the application of AI in the context of banking, investments, and insurance. The certification is structured in two levels, with annual editions.<sup>6</sup>

We also asked local societies about the advantages and challenges that they have experienced in the promotion of fintech initiatives at a local level. The main benefits listed by survey respondents are to keep society members informed, provide professional learning content about the recent trends in fintech, and engage on fintech developments with the local financial investment community and national regulators. The main challenge for many society members is that financial technologies could create a destructive environment by promoting new business models. In addition, CFA Society France noted a poor level of engagement between its members and fintech companies. This situation is because most fintech companies are interested in promoting and selling their products, whereas society members prefer to attend events that focus more on knowledge than product placement. Society members are mainly motivated to learn how to use financial technologies in their day-to-day jobs and embrace new opportunities for their careers. In addition, some European local societies have been struggling to find the necessary funding resources (or sponsors) to organise focused events on fintech innovations in the financial services industry.

Regarding barriers, the majority of surveyed local societies have not encountered any regulatory obstacle to the proliferation or adoption of fintech initiatives in their local market. Nevertheless, CFA Society Germany stressed that fintech organisations need to comply with the same regulatory requirements as other established players in the financial services arena. Such requirements might be particularly onerous for small fintech companies, especially those having recently entered the industry and with insufficient depth and breadth of expertise.

In the Impact on Strategy section, the survey focused on the evolution of local societies' strategy in promoting fintech initiatives. All survey respondents mentioned that local societies are not planning to make material changes to their strategy in engaging on fintech-related topics. Both CFA Society Italy and CFA Society Germany, however, expect an increase in their investments in digitalisation and automation tools. CFA Society Italy also predicts a growth in the number of society members and staff resources. In addition, it has been discussing an agreement with a reputed education provider to offer discounted Python courses to its members.

In the Local Landscape section, survey questions concerned the impact of fintech developments on CFA Institute members, who are mainly portfolio managers, research analysts, financial advisers, and executive-level managers. Local societies were asked about the professions they expect to be positively affected by fintech developments. A clear majority of respondents said that they expect portfolio management, relationship/wealth management, and data science will be the three sectors most positively affected by the evolution of financial technologies. Local societies expect that their members could have more employment opportunities in these roles as new fintech tools are deployed in the industry. Other sectors that might benefit from fintech developments are consulting services and credit analysis.

CFA Society Italy noted that the new evaluation models are based on new credit ratings. Owing to the larger amount of available data, these models could have an impact on risk management and credit analysis roles. CFA Society Spain stressed that the consulting and data science sectors should experience an increase in the demand of their services, leading to a growth in the scope of the services that firms in these sectors currently provide. CFA Society Spain also indicated that risk management and accounting/audit areas might see an upward shift from current capabilities because new tools, systems, processes, and models would allow for automation and better detection of areas on which firms could focus. Organisations are likely to face a transition period, however—several alerts and deviations could occur early on until the entire journey gets calibrated.

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<sup>6</sup>For more details, see the CAIIB webpage of CFA Society Spain: <https://caiib.org/en/>.

Subsequently, the questionnaire asked about the expected changes from a potential acceleration in the use of fintech in the financial services sector. All the local societies responding to the question stressed that a potential increase of fintech developments and firms in the industry would mostly result in lower pricing for the provision of financial services. Other possible consequences mentioned include an improved customer experience, a greater offering of innovative services and products to investors, and a rise in customer turnover and competitive pressure. However, a few local societies are also concerned that a significant penetration of fintech in the industry could weaken the current level of investor protection in the EU. This challenge is likely one that EU financial regulators and supervisors would have to face in the near future.

The survey also questioned local societies on the need for national regulators to create new regulations aiming to manage the rise of new technologies in the industry. A striking majority of respondents believed that the current regulations are not enough to deal with the increase in financial innovations in the financial sector and, therefore, major regulatory changes are required. Similar results emerged from responses to this same question in our 2020 (global) fintech survey report, "Fintech Survey 2: Has AI and Machine Learning Adoption Advanced?"<sup>7</sup> At that time, the majority of survey respondents in Europe, the Middle East, and Africa (EMEA) believed that some adjustments in the existing financial regulation approach were necessary, although 42% of members said that regulations could be unchanged or only small amendments should be necessary.

The Impact of New Technologies section of the survey delves into the positive and negative consequences of using fintech for both firms and consumers. Most of the questions in this section were also posed to CFA Institute members globally in the 2016 Fintech Survey Report. In Question 1, we asked local societies whether their members believe that some specific financial market sectors would be particularly affected by automated financial advice tools. Banking, securities, and asset management were viewed as the most affected areas from the use of this type of financial technology. In contrast, EMEA respondents in 2016 expected that asset management would be the main affected sector. Hence, practitioners now believe automated financial advice will have a larger impact on the industry than it did before.

Question 2 of this section concerns the impact on consumers of the provision of automated financial advice. Most survey respondents presumed that retail investors would benefit from lower costs and easier access to financial advice, although opinions are mixed on the possible impact in terms of product choice, the quality of services, and the incidence of market fraud/mis-selling practices. The 2016 survey showed similar results; CFA Institute members from EMEA stressed that consumers would be positively affected by automated financial advice because of lower costs, better access to advice, and greater product choice.

Question 3 of this section refers to the possible risks of the introduction of automated financial advice. Local societies listed a variety of risks that could emerge from the use of this technology, such as flaws in automated financial advice algorithms, privacy and data protection concerns, and mis-selling practices. In the 2016 survey, respondents from EMEA also mentioned such risks.

Question 4 of this section asked local societies about their views on the technologies that could have the biggest impact on the financial services industry five years from now. A majority of respondents pointed out that blockchain technology is likely to be the most disruptive financial innovation in the near future. Other technologies indicated to have a lesser impact include robo-advisers, crowdfunding, and machine learning. In contrast, the 2016 survey highlighted robo-advisers as the most impactful technology in the subsequent five years. Our results suggest that the potential of blockchain is much clearer today than it was seven years ago. This technology is believed to have much more market impact than other fintech innovations, including robo-advisers.

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<sup>7</sup>CFA Institute, "Fintech Survey 2" (June 2020). [www.cfainstitute.org/-/media/documents/survey/cfa\\_fintech\\_survey\\_2\\_web.PDF](http://www.cfainstitute.org/-/media/documents/survey/cfa_fintech_survey_2_web.PDF).



Question 5 of this section relates to the manner in which risk and compliance departments of financial organisations monitor positions in new instruments, such as cryptocurrencies and ICOs. Most of the local societies responding to this question underlined that local firms have been monitoring their positions in these assets by using existing tools or through adopting newly developed techniques. These results have significantly changed from those of the 2016 survey—at that time, most organisations did not hold any positions in new instruments.

Question 6 of this section examines how organisations should approach their AI-based decision making and whether it should be treated in a different manner compared with traditional, human-based processes. Survey respondents overwhelmingly agree that these are diversified decision-making procedures and should be reviewed in a different manner. Because the AI-based decision-making framework incorporates human biases, which render it systematic, decision-making procedures should be audited by independent third-party firms to ensure that audit reviews have no bias. These results mirror those of the 2016 survey; a plurality of respondents from EMEA opined that these two decision-making frameworks should be treated in a different manner.

Question 7 asked local societies whether they are aware of organisations in their local market using big data analysis to predict client behaviour. Most survey respondents pointed out that this technology has been used by a large number of companies to manage operational and compliance risks. Comparing these results with those of the 2016 survey, we find it noteworthy that the majority of EMEA respondents in 2016 said that their firm did not use big data analysis as a tool to predict their clients' behaviour. Nonetheless, almost 40% of global respondents said that big firms (with more than 5,000 employees) already used such techniques. In light of our new survey results, we observe a significant increase in the adoption of big data analysis, in an attempt for organisations to better understand current and prospective clients' interests and attitudes.

Question 8 of the section asked survey respondents whether they believe firms in their local market use big data analysis and machine learning techniques to conduct market research that leads to investment decisions. We do not see a clear trend in the local societies' responses. About half of the respondents said that organisations operating in their local country regularly use big data and machine learning to improve market research, whereas the other half is not aware of these technologies being adopted for this purpose.

The last question of the section, Question 9, focuses on any possible threat to the financial sector from fintech developments made by firms in the European market from other sectors. Although a significant proportion of survey respondents saw no important threats, some local societies highlighted concerns. In particular, CFA Society Italy referred to a recent Bank of Italy study<sup>8</sup> that found that cryptoassets can generate risks for financial system stability because of the interdependence of regulated and nonregulated entities participating in them, as well as a lack of controls and instruments that can limit the effects of adverse events. CFA Society Spain noted that future risks could emerge if certain service providers are not subject to adequate investor protection rules. For instance, account information service providers, which aggregate bank accounts, are subject under the Payment Services Directive 2 (PSD2) to a license application before the Bank of Spain, while virtual currency and e-wallet services providers offering cryptocurrency exchange and custody services are required only to register. This situation could create friction in the development of new services and products and innovation in Spain.

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<sup>8</sup>Bank of Italy, "Communication by Banca d'Italia on Decentralized Technology in Finance and Crypto-Assets" (June 2022). [www.bancaditalia.it/media/approfondimenti/2022/cripto/en-Comunicazioni-della-Banca-d-Italia-DLT-cripto.pdf?language\\_id=1](http://www.bancaditalia.it/media/approfondimenti/2022/cripto/en-Comunicazioni-della-Banca-d-Italia-DLT-cripto.pdf?language_id=1).

## Box 1. Highlight: CFA Institute Study on Cryptoassets

In January 2023, CFA Institute released the research paper "Cryptoassets: Beyond the Hype," which looks into the current state of the cryptoasset investment market and makes some recommendations for investors and policymakers.

The main conclusions of this study are as follows:

- Regulation needs to be harmonised. Regulators from around the world should work toward harmonising regulatory frameworks at the international level and should agree on a series of definitions and supervisory programmes to reduce market fragmentation.
- Regulations should determine whether cryptoassets qualify as securities, other forms of financial instruments, commodities, or currencies and should harmonise this definition at the international level.
- Regulation on cryptoassets and digital finance should remain technologically neutral. However, investor protection must not be weakened.
- Stablecoins should be regulated both for systemic risk potential and from a business conduct or investor protection standpoint.
- Cryptoasset services need to be categorised and their business conduct regulated.
- Regulators should monitor the competition level of the cryptoasset market, particularly focusing on costs, fees, and business practices related to investor protection.
- Market abuse risks should be constantly monitored and controlled in order to maintain market integrity.
- Policymakers should put in place a legislative framework regulating the custody and safekeeping of customer cryptoassets.
- Regulators should monitor and appropriately measure the financial risk buildup of decentralised finance.

Source: Stephen Deane and Olivier Fines, "Cryptoassets: Beyond the Hype," CFA Institute (January 2023). [www.cfainstitute.org/-/media/documents/article/industry-research/crypto-beyond-the-hype.pdf](http://www.cfainstitute.org/-/media/documents/article/industry-research/crypto-beyond-the-hype.pdf).

## Annex 1. The New EU Digital Operational Resilience Act

At the end of 2022, EU co-legislators made an agreement on the adoption of the Digital Operational Resilience Act (DORA).<sup>9</sup> This regulation sets out requirements for the security of network and information systems of financial institutions and other companies operating in the financial sector, as well as third parties providing services to financial companies related to information and communication technology (ICT). All firms subject to DORA are required to make sure they can withstand, respond to, and recover from all types of ICT-related disruptions and threats. DORA took effect in January 2023.

This legislation introduces rules that do not pose obstacles to the use of new digital technologies, while ensuring that new financial technologies and instruments are covered under the scope of financial regulation and operational risk management arrangements of firms active in

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<sup>9</sup>See EU, "Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on Digital Operational Resilience for the Financial Sector and Amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011," *Official Journal of the European Union* (27 December 2022). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R2554&qid=1687275814732>.

the EU. DORA aims to support innovation and the development of new financial technologies and, at the same time, provides a framework for consumer and investor protection.

The three European Supervisory Authorities (the European Banking Authority, the European Securities and Markets Authority, and the European Insurance and Occupational Pensions Authority) have been mandated to develop technical criteria for critical ICT third-party providers and the oversight fees to be levied on them.

## Annex 2. The New EU Regulation on a Market in Cryptoassets

EU co-legislators recently made an agreement<sup>10</sup> on regulating the markets in cryptoassets (MiCA), which took effect at the end of June 2023. This legislation aims to protect investors from the risks associated with investments in cryptoassets and help them avoid investing in fraudulent schemes.

The legislative text<sup>11</sup> identifies and covers three types of cryptoassets: asset-referenced tokens (ARTs), electronic money tokens (EMTs), and other cryptoassets that do not fall under existing EU law. In particular, the regulation sets out clear rules on the issuance and trading of this type of financial instrument, as well as the management of the underlying assets, with additional requirements for "significant" ARTs and EMTs.

The MiCA legislation regulates the trading venues and the wallets where cryptoassets are held, as well as any type of market abuse related to any type of cryptoasset transaction or service. The framework also aims at securing liquidity and redemption and encourages firms to include the environmental impact of cryptoassets in communications to investors.

## Annex 3. Other Relevant EU Legislation

As of 30 June 2023, in the European Union, several pieces of legislation, or regulatory proposals, that are directly or indirectly related to the fintech sector have been introduced. We are grouping these into six areas of interest: data, digital identity, artificial intelligence, open finance, operational resilience, and cryptoassets.

With regard to data, the key existing regulatory texts are the Directive on Open Data and the Re-Use of Public Sector Information, also known as the Open Data Directive;<sup>12</sup> the Regulation on Free Flow of Non-Personal Data;<sup>13</sup> and the Regulation on Promoting Fairness and Transparency for Business Users of Online Intermediation Services.<sup>14</sup>

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<sup>10</sup>Council of the European Union, "Digital Finance: Council Adopts New Rules on Markets in Crypto-Assets (MiCA)," press release (16 May 2023). [www.consilium.europa.eu/en/press/press-releases/2023/05/16/digital-finance-council-adopts-new-rules-on-markets-in-crypto-assets-mica/](http://www.consilium.europa.eu/en/press/press-releases/2023/05/16/digital-finance-council-adopts-new-rules-on-markets-in-crypto-assets-mica/).

<sup>11</sup>See EU, "Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets, and Amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937," *Official Journal of the European Union* (9 June 2023). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1114>.

<sup>12</sup>See EU, "Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on Open Data and the Re-Use of Public Sector Information," *Official Journal of the European Union* (26 June 2019). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L1024&from=EN>.

<sup>13</sup>See EU, "Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a Framework for the Free Flow of Non-Personal Data in the European Union," *Official Journal of the European Union* (28 November 2018). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1807&from=EN>.

<sup>14</sup>See EU, "Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on Promoting Fairness and Transparency for Business Users of Online Intermediation Services," *Official Journal of the European Union* (11 July 2019). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1150&from=en>.

The Open Data Directive sets out common rules for a European market for government-held data. This legislation aims to encourage EU countries to make available as much information as possible for reuse for citizens. It covers data held by public sector bodies in EU countries at national, regional, and local levels.<sup>15</sup>

The Regulation on Free Flow of Non-Personal Data introduces rules allowing firms and public administrations to store and process nonpersonal data anywhere in the EU. The legislation also ensures that public authorities can retain access to such data, even when they are located in a different EU member state or when they are stored or processed in the cloud, and it facilitates easier switching between cloud service providers for professional users.<sup>16</sup>

The Regulation on Promoting Fairness and Transparency for Business Users of Online Intermediation Services aims to ensure a fair and transparent legal environment for business users of online platforms and for users of online search engines, while also limiting harmful platform-to-business trading practices.

Other important pieces of legislation, which are not yet in effect, are the European Data Governance Act and the European Commission proposal for a regulation on harmonised rules on fair access to and use of data (Data Act).

The European Data Governance Act has already been approved by EU legislators but will be applicable beginning in September 2023. It aims to increase trust in data sharing, strengthen mechanisms to increase data availability, and overcome technical obstacles to the reuse of data. The regulation is expected to facilitate data sharing across sectors and EU member states.<sup>17</sup>

In June 2023, the European Parliament and the Council of the EU reached an agreement on the proposal for a Data Act. This initiative, which complements the European Data Governance Act, should allow a greater range of stakeholders to take control of their data and ensure greater availability of data for innovative use, while still incentivising firms to invest in ways that generate value through data.<sup>18</sup>

In the area of digital identity, the regulation on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation) ensures that EU citizens and businesses can use their own national electronic identification schemes (eIDs) to access public services available online in other EU countries. The eIDAS Regulation also provides legal certainty for trust services because these services can work in all member states and have the same legal validity as their traditional paper-based equivalents.<sup>19</sup>

The eIDAS Regulation is currently under a review process. In 2021, the European Commission put forward a proposal to update the European digital identity framework,<sup>20</sup> which aims to increase the proportion of EU citizens who have the ability to use a digital identity to access digital public services (even across borders) by 2030. The proposed text introduces a way for EU nationals to

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<sup>15</sup>For more details, see the European Commission website on this directive: <https://digital-strategy.ec.europa.eu/en/policies/legislation-open-data>.

<sup>16</sup>For more details, see the European Commission website on this regulation: <https://digital-strategy.ec.europa.eu/en/policies/non-personal-data>.

<sup>17</sup>For more details, see the European Commission website on this regulation: <https://digital-strategy.ec.europa.eu/en/policies/data-governance-act>.

<sup>18</sup>See European Commission, "Proposal for a Regulation of the European Parliament and of the Council on Harmonised Rules on Fair Access to and Use of Data (Data Act)" (23 February 2022). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022PC0068&from=EN>.

<sup>19</sup>For more details, see the European Commission website on the regulation: <https://digital-strategy.ec.europa.eu/en/policies/eidas-regulation>.

<sup>20</sup>See European Commission, "Proposal for a Regulation of the European Parliament and of the Council Amending Regulation (EU) No 910/2014 as Regards Establishing a Framework for a European Digital Identity" (3 June 2021). [https://eur-lex.europa.eu/resource.html?uri=cellar:5d88943a-c458-11eb-a925-01aa75ed71a1.0001.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:5d88943a-c458-11eb-a925-01aa75ed71a1.0001.02/DOC_1&format=PDF).



identify and authenticate themselves online without requiring the help of commercial providers, a practice that has caused trust, security, and privacy concerns.<sup>21</sup>

The current EU legislative framework on artificial intelligence consists of several provisions enshrined in the General Data Protection Regulation (GDPR)<sup>22</sup> and the Law Enforcement Directive.<sup>23</sup> Despite not explicitly mentioning AI, the GDPR contains requirements that are relevant to AI—for example, the purpose limitation and the data minimisation principle. The former allows the reuse of personal data (also for statistical reasons) when such data are compatible with the purposes for which the data were originally collected. The latter may require the reduction of "personality" of available data through such measures as pseudonymisation (i.e., the ease with which the data can be connected with individuals). Both requirements can be applied to AI.

In 2021, the European Commission launched a proposal for an Artificial Intelligence Act.<sup>24</sup> This act would assign applications of AI to three risk categories: (1) systems having unacceptable risk, which would be prohibited; (2) high-risk applications, which fall under specific rules; and (3) other applications, which are neither banned nor regulated.<sup>25</sup>

Open finance is the process of sharing, accessing, and reusing personal and nonpersonal data by financial intermediaries for the purpose of providing a wide range of financial services.<sup>26</sup> The main regulatory text covering this area is the Payment Services Directive 2 (PSD2),<sup>27</sup> which regulates the payment services and providers in the EU and the European Economic Area. Currently, financial service providers fall under limited sources of customer data access rights, which are covered under the PSD2 and the GDPR. The PSD2 sets out rules applicable to payment accounts data of both retail and business customers, while the GDPR covers personal data held by any other financial service provider. On 28 June 2023, the European Commission issued a proposal for a new Payment Services Directive (PSD3) and a Payment Services Regulation.<sup>28</sup> The proposed framework includes measures establishing clear rights and rules to manage customer data sharing in the financial sector beyond payment accounts.

In 2022, the European Commission conducted a public consultation on the review of PSD2, its application, and its impact to gather views on open finance. The consultation results show relevant concern among respondents that security and privacy risks could emerge when citizens

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<sup>21</sup>For more details, see European Parliament, "Updating the European Digital Identity Framework" (2023). [www.europarl.europa.eu/RegData/etudes/BRIE/2021/698772/EPRS\\_BRI\(2021\)698772\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698772/EPRS_BRI(2021)698772_EN.pdf).

<sup>22</sup>See EU, "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation)" (4 May 2016). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02016R0679-20160504&from=EN>.

<sup>23</sup>See EU, "Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data by Competent Authorities for the Purposes of the Prevention, Investigation, Detection or Prosecution of Criminal Offences or the Execution of Criminal Penalties, and on the Free Movement of Such Data, and Repealing Council Framework Decision 2008/977/JHA" (4 May 2016). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02016L0680-20160504&from=EN>.

<sup>24</sup>See European Commission, "Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts" (21 April 2021). [https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC_1&format=PDF).

<sup>25</sup>For more details, see the Future of Life Institute explanation of the proposed regulation: <https://artificialintelligenceact.eu/>.

<sup>26</sup>For more details, see European Commission Expert Group on European Financial Data Space, "Report on Open Finance" (October 2022). [https://finance.ec.europa.eu/system/files/2022-10/2022-10-24-report-on-open-finance\\_en.pdf](https://finance.ec.europa.eu/system/files/2022-10/2022-10-24-report-on-open-finance_en.pdf).

<sup>27</sup>See EU, "Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on Payment Services in the Internal Market, Amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and Repealing Directive 2007/64/EC" (23 December 2015). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02015L2366-20151223&from=EN>.

<sup>28</sup>For more details, see Directorate-General for Financial Stability, Financial Services and Capital Markets Union, "Financial Data Access and Payments Package" (28 June 2023). [https://finance.ec.europa.eu/publications/financial-data-access-and-payments-package\\_en](https://finance.ec.europa.eu/publications/financial-data-access-and-payments-package_en).

allow service providers access to their data. In addition, the majority of consultation respondents believe that financial service providers holding their data do not always ask for consent before sharing such data with other providers.

With regard to operational resilience, the European Banking Authority issued the Guidelines on ICT and Security Risk Management in 2019.<sup>29</sup> These guidelines, which apply to payment service providers, credit institutions, and other investment firms, provide guidance on how these institutions should manage the ICT and security risks that they are exposed to. The document also provides these organisations with a better understanding of supervisory expectations for managing the aforementioned risks.

The latest development has been the approval of DORA (see Annex 1).

Finally, cryptoassets are regulated under a series of legislative texts, including the EU's fifth Anti-Money Laundering Directive (AMLD5) and the regulation on a pilot regime for market infrastructures based on distributed ledger technology.

AMLD5, which aims to improve the detection of suspicious transactions and activities and reduce criminals' operations in financing terrorist activities, also affects virtual currencies. The directive obliges all service providers, including those of cryptoassets, to conduct due diligence on their customers. The regulatory text also ensures full traceability of cryptoasset transfers.<sup>30</sup>

The regulation on a pilot regime for market infrastructures based on distributed ledger technology (DLTR)<sup>31</sup> introduces a framework for cryptoassets that qualify as financial instruments in the EU and a regime for the tokenisation of traditional financial assets and wider use of distributed ledger technology in financial services. DLTR creates three categories of distributed ledger technology market infrastructures: multilateral trading facilities, trading and settlement systems, and settlement systems. DLTR sets out different requirements for market participants to apply for specific permission to operate in these distributed ledger technologies.

And finally, the world of cryptoassets has been strengthened by the approval and entry into force of MiCA (see Annex 2).

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<sup>29</sup>See European Banking Authority, "Final Report: EBA Guidelines on ICT and Security Risk Management" (29 November 2019). [www.eba.europa.eu/sites/default/documents/files/document\\_library/Publications/Guidelines/2020/GLs%20on%20ICT%20and%20security%20risk%20management/872936/Final%20draft%20Guidelines%20on%20ICT%20and%20security%20risk%20management.pdf](http://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Guidelines/2020/GLs%20on%20ICT%20and%20security%20risk%20management/872936/Final%20draft%20Guidelines%20on%20ICT%20and%20security%20risk%20management.pdf).

<sup>30</sup>For more detail, see the European Commission webpage on AMLD5: <https://finance.ec.europa.eu/financial-crime/eu-context-anti-money-laundering-and-counteracting-financing-terrorism.en>.

<sup>31</sup>See EU, "Regulation (EU) 2022/858 of the European Parliament and of the Council of 30 May 2022 on a Pilot Regime for Market Infrastructures Based on Distributed Ledger Technology, and Amending Regulations (EU) No 600/2014 and (EU) No 909/2014 and Directive 2014/65/EU," *Official Journal of the European Union* (2 June 2022). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R0858&from=EN>.

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