BRIEFING

European Parliament

Artificial intelligence act and regulatory sandboxes

SUMMARY

The artificial intelligence act envisages setting up coordinated AI 'regulatory sandboxes' to foster innovation in artificial intelligence (AI) across the EU. A regulatory sandbox is a tool allowing businesses to explore and experiment with new and innovative products, services or businesses under a regulator's supervision. It provides innovators with incentives to test their innovations in a controlled environment, allows regulators to better understand the technology, and fosters consumer choice in the long run. However, regulatory sandboxes also come with a risk of being misused or abused, and need the appropriate legal framework to succeed.

In April 2021, the European Commission presented a proposal for a regulation laying down harmonised rules on AI (the 'artificial intelligence act' or 'AI act'). Academics and stakeholders have commented on the proposal, touching, in particular, on issues regarding the lack of liability protection for sandbox participants, the need for a more harmonised approach to AI regulatory sandboxes, and the interplay between AI sandbox and EU data protection rules.

The European Parliament has called for introducing regulatory sandbox instruments in several resolutions. Its April 2022 committee draft report on the AI act argued for more transparency on the implementation and use of AI sandboxes.

IN THIS BRIEFING

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What are regulatory sandboxes?

While there is no agreed definition, **regulatory sandboxes** generally refer to regulatory tools allowing businesses to test and experiment with new and innovative products, services or businesses under supervision of a regulator for a limited period of time. As such, regulatory sandboxes have a double role: 1) they foster **business learning**, i.e. the development and testing of innovations in a real-world environment; and 2) support **regulatory learning**, i.e. the formulation of experimental legal regimes to guide and support businesses in their innovation activities under the supervision of a regulatory authority. In practice, the approach aims to enable experimental innovation within a framework of controlled risks and supervision, and to improve regulators' understanding of new technologies.[1]

Over the past years, the sandbox approach has gained considerable traction across the EU as a means of helping regulators address the development and use of emerging technologies – such as artificial intelligence (AI) and blockchain technologies – in a wide range of sectors. Regulatory sandboxes operated by financial regulatory authorities are now widely used in **financial technologies** (fintech) for designing new financial services (e.g. testing digital wallets and digital ID technologies).[2] Similarly, regulatory sandboxes have emerged as testbeds in **transport** (e.g. for autonomous cars or drones), **energy** (e.g. for smart meters), **telecommunications** (e.g. for 5G deployment) and **health** (e.g. for services and innovations for predictive early detection of diseases).[3]

Regulatory sandboxes in the world

According to a World Bank study, **more than 50 countries** are currently experimenting with fintech sandboxes. **Japan** introduced in 2018 a sandbox regime open to organisations and companies both in- and outside Japan willing to experiment with new technologies, including blockchain, AI, and the internet of things (IoT), in fields such as financial services, healthcare and transportation. In Europe, both Norway and the United Kingdom (UK) have developed AI sandboxes. **Norway** established a regulatory sandbox as part of its national AI strategy, to provide guidance on personal data protection for private and public companies. In the **UK**, a sandbox has been set up to explore new technologies such as voice biometrics and facial recognition technology, and the related data protection issues.

EU policy-makers are increasingly favouring a more agile approach to innovation and regulation in the high-tech sector. Regulatory sandboxes have been proposed for testing surveillance solutions in the fight against the Covid-19 pandemic, and for establishing a framework for data access and use in the EU. Moreover, the EU is promoting regulatory sandboxes to support start-ups in bringing challenging technologies to the market and enabling cross-border testing.[4] Furthermore, the EU institutions have formally committed to make EU legislative proposals more forward-looking and innovation-friendly, inter alia by using regulatory sandboxes.[5]

Expected benefits and concerns

Regulatory sandboxes can bring a number of **benefits**:[6]

- *Regulators* can acquire a better understanding of the innovative products, which allows them to **develop adequate rule-making, supervision and enforcement policies**. For instance, in the banking industry, the sandbox may result in amending the rules on identity verification without a face-to-face meeting in certain circumstances. A wide range of actors – including developers, regulators, experts, and consumers of innovative products – interact in a sandbox. This fosters communication between all interested parties and helps bring about the conditions for a **more consensual approach** to defining the applicable rules.
- *Innovators* can develop their products and services in a regulation-compliant way, avoiding potential legal risks. Regulatory sandboxes help them develop a **better understanding of supervisory expectations**. Moreover, for innovators, testing in a controlled environment also **mitigates the risks** and **unintended consequences**

(such as unseen security flaws) when bringing a new technology to market, and can potentially **reduce the time-to-market** cycle for new products. Regulators can offer technology developers guidance on how specific rules would apply to the new products and, in some cases, provide for derogation from regulatory frameworks or waivers. From the innovators' perspective, one of the main benefits is the ability to test new technologies **without having to meet all regulatory requirements normally applicable** in a specific area, which is particularly useful for addressing innovations that do not readily fit an existing framework.

- *Consumers* benefit from the introduction of **new and potentially safer products**, as regulatory sandboxes foster innovation and consumer choice in the long run.

However, regulatory sandboxes also carry the risk of being misused or abused. Several **concerns** have been raised in this respect:[7]

- Sandboxes might be misused, and lead to **regulatory arbitrage**, meaning regulators may lower safeguards and requirements to attract innovators. Experts have alerted to the potential negative impacts on consumer protection brought about by this 'race to the bottom' in the fintech sector.[8]
- Critics point to the risk that regulators may **prioritise innovation over putting adequate safeguards** in place to protect the public and consumers. They also caution that private entities processing personal data are allowed to deviate from the applicable data protection rules when testing their AI systems.[9]
- There is a concern that regulators' choices might interfere with or even **slow down genuine innovation** from private actors.
- A risk of **fragmentation of the EU single market** has been pinpointed, if the testing parameters in a regulatory sandbox diverge significantly in different Member States.

European Commission AI act proposal

Purpose

The Commission's April 2021 draft AI act introduces the concept of **'AI regulatory sandboxes'**, labelled as specific measures supporting innovation (articles 53 and 54). Their objective would be to **foster AI innovation** by establishing a controlled experimentation and testing environment for innovative AI technologies, products and services during the development phase, before their placement on the market.[10]

Governance and supervision

The draft AI act envisages setting up **coordinated AI sandboxes at the national level**, and would establish common rules to ensure **uniform implementation** of the sandboxes across the EU. Member States' competent authorities are **encouraged** – not required – to set up regulatory sandboxes, and put in place a basic framework in terms of **governance** and **supervision** (article 53). Accordingly, regulatory sandboxes can be established either by a single Member State, several Member States, or the European Data Protection Supervisor. Furthermore, regulatory sandboxes must be supervised by national competent authorities in accordance with the existing rules applicable at the EU and national levels; the competent authorities' supervisory and corrective powers would therefore not be affected. In the event of risks to health and safety, and to fundamental rights, mitigation and even suspension measures could be taken.

However, the proposal explicitly states that participation in a sandbox experiment **does not exempt participants from liability**. Participants in AI regulatory sandboxes would therefore remain liable under applicable EU and Member State legislation for any harm inflicted on third parties as a result of the experimentation taking place in the sandbox.[11]

Both the **modalities and** the **conditions of the operation** of AI regulatory sandboxes would be set out in **implementing acts** (article 53(6)). This includes the eligibility criteria and the procedure for the application for, selection of, participation in and exit from regulatory sandboxes, and the participants' rights and obligations. Furthermore, national competent authorities that have established AI regulatory sandboxes are required to **coordinate** their activities, and **cooperate** in the context of a **European AI board** that would be set up to draw good practices.

Related Commission initiatives

The 2021–2027 Digital Europe programme envisages the establishment of large-scale reference testing and experimentation facilities (TEFs) in the EU. TEFs are expected to play an important role in **supporting AI regulatory sandboxes** through the provision of **technical support and testing facilities**. AI system developers and producers will be able to try out, in a controlled environment, whether their innovative AI-based products and services meet the applicable safety requirements and standards. TEFs could also **help develop codes of conduct** to foster voluntary application of AI act requirements by the industry and public administrations.

Small and medium-sized enterprises

Under the proposal, small-scale providers and start-ups would be given **priority access** to AI regulatory sandboxes (article 55). The sandboxes would provide for proportionate application of the rules to small and medium-sized enterprises (SMEs), as permitted in the existing legislation, and thus allow for space for experimentation under both the new rules and the existing legal framework.[12]

Data protection

The draft AI act attempts to clarify the interplay between the new horizontal rules for AI and the applicable data protection rules. Member States would be required to **associate the national data protection authorities** or other competent authorities with the operation of AI regulatory sandboxes (article 53.2). Moreover, **further processing of personal data** (i.e. for a purpose other than that for which such data have been collected) would be allowed in the AI regulatory sandbox for developing AI systems **in the public interest**, for instance relating to prevention of criminal offences, public health and safety, or environmental protection (article 54).

Key policy issues for discussion

Experts, stakeholders and academics have made several comments on the AI proposal on sandboxes, including on the following topics.

Liability protection

Under the draft AI act (article 53(4)), sandbox participants would not be exempted from AI liability, as mentioned above. Some authors stress that, under such an approach, the AI sandbox would be used for ensuring that innovative products are compliant with the current regulation; however, it would not serve for assessing the AI innovation's exposure to potential liability.[13] They warn that this could send the wrong message, and **discourage innovative companies** from participating in an AI sandbox, because they would be asked to expose their trade secrets and algorithm design without benefiting from a suspension (be it temporary) of liability.[14] According to other experts, the draft text is not clear as to what regulatory relief can further be offered to innovators[15], and they would welcome some clarification regarding the **liability protection benefits** in the sandbox.[16]

Harmonisation

Under the draft AI act, one or more EU Member States may establish an AI regulatory sandbox. Moreover, the sandbox regime proposed by the Commission is only optional, i.e. not mandatory for Member States. As a result, different sandbox frameworks and rules might be implemented throughout the EU, and the risk of having **diverging national sandboxing rules** put in place at national level has been raised.[17] Furthermore, the danger of **forum-shopping** has been highlighted, as AI developers might be encouraged to choose EU Member States with less stringent sandbox regimes.[18]

Another layer of complexity is the possible proliferation of regulatory sandboxes with overlapping remits at the EU and national levels. Industry stakeholders are asking for more clarity on the **interplay between the local and European sandboxes** that could be used for AI technologies.[19] In particular, they have questioned whether multi-jurisdictional regulatory sandboxes are feasible, and emphasised the need for **sandbox standardisation** to enable cross-border provision of services.[20]

European Parliament starting position

The Parliament has called for introducing regulatory sandbox instruments in several resolutions. An October 2020 resolution on digital finance asked the Commission to set up a pan-European sandbox for digital financial services. A 2019 resolution on a comprehensive European industrial policy on AI and robotics encouraged the use of AI-specific regulatory sandboxes to introduce innovative new ideas, and to test the safe and effective use of AI technologies in a real-world environment.

The April 2022 draft report from Parliament's Committees on the Internal Market and Consumer Protection (IMCO) and Civil Liberties, Justice and Home Affairs (LIBE), jointly responsible for the file, put forward several amendments to the Commission's draft AI act. It asks for **more transparency** on the implementation and use of AI sandboxes, and stresses that AI regulatory sandboxes must allow and facilitate the involvement of notified bodies, standardisation bodies, and other relevant stakeholders. Furthermore, the draft report wants the national regulators to share more largely the information provided to the European AI board with regard to sandbox functioning.

Data protection

The data protection rules in the draft AI act have met with criticism. Some experts fear that they might not be fully in line with the **'purpose limitation principle'** enshrined in the General Data Protection Regulation (GDPR). This principle governs how to further process personal data for a purpose other than that for which such data have been collected.[21] In their joint opinion on the Commission proposal for an AI regulation, the European Data Protection Supervisor and the European Data Protection Board recommend clarifying the sandboxes' scope and objectives, and **avoiding any inconsistency and possible conflicts with the GDPR**. To that end, they call for clarifications on the **further processing of data for developing certain AI systems in the public interest**, and on the **re-use of data**. Moreover, they underline the need to strike a **balance between European coordination and national procedures** in order to avoid conflicting implementation of the future AI regulation.

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Truby J. and others, 'A sandbox approach to regulating high-risk artificial intelligence applications', *European Journal of Risk Regulation*, Vol. 13(2), November 2021.

ENDNOTES

1 See S. Ranchordas, Experimental lawmaking in the EU: Regulatory sandboxes, 2021; J. Truby and others, A sandbox approach to regulating high-risk artificial intelligence applications, 2021; G. Leimüller and S. Wasserbacher-Schwarzer, Regulatory sandboxes – Analytical paper for Business Europe, April 2020; and F. Pop and L. Adomavicius, Sandboxes for responsible artificial intelligence, European Institute of Public Administration (EIPA), September 2021.

2 See D. Ahern, Regulatory Lag, regulatory friction and regulatory transition as FinTech disenablers: Calibrating an EU response to the regulatory sandbox phenomenon, European Banking Institute (EBI) Working Paper Series, September 2021; W.-G. Ringe and C. Ruof, Keeping up with innovation: Designing a European sandbox for FinTech, European Capital Markets Institute (ECMI) Commentary no 58, January 2019.

3 See The role of sandboxes in promoting flexibility and innovation in the digital age, OECD, 2020; and Global experiences from regulatory sandboxes, World Bank Group, 2020.

4 See I. Mundell, The ecosystem: Challenging tech? There's a sandbox for that, Science Business Network, April 2022.

5 See Council conclusions on regulatory sandboxes and experimentation clauses as tools for an innovation-friendly, future-proof and resilient regulatory framework that masters disruptive challenges in the digital age, 2020. The 2021 Better Regulation Toolbox foresees accordingly the possibility to set up a framework allowing innovations to be tested in a real-world environment subject to regulatory safeguards and support.

6 For an analysis, see F. Pop and L. Adomavicius, above. See J. Truby and others, above; and Regulatory sandboxes and innovation hubs for FinTech, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, September 2020.

7 ibid.

8 See, in particular, H. Allen, 'Sandbox boundaries', *Vanderbilt Journal of Entertainment & Technology Law*, Vol 22(2), October 2020.

9 See, in particular, S. Ranchordas, above.

10 See European Commission impact assessment of the regulation on artificial intelligence, 21 April 2021, pp. 59-60; and recital 72 of the draft AI act.

11 See article 53.4 of the draft AI act.

12 See European Commission Impact assessment, p. 71.

13 See J. Truby and others, above.

14 ibid.

15 See S. Ranchordas, above.

16 See J. Truby and others, above.

17 ibid.

18 ibid.

19 See I. Mundell, above. An example is the EU's blockchain sandbox project, which could combine blockchain with other technologies, such as AI or the Internet of Things.

20 See K. Yordonava, 'The EU AI act – Balancing human rights and innovation through regulatory sandboxes and standardisation', *Competition Policy International*, March 2022.

21 See F. Pop and L. Adomavicius, above.

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