'A Comparative Analysis of Policy Approaches to Encourage FinTech'

Anton N Didenko[*] and Ross P Buckley[**]

Executive summary

Australia has already made substantial progress in attracting technological innovation in finance ('FinTech'), as evidenced by the substantial increase in the number of FinTech firms between 2014 and 2019: from less than 100 to over 600 firms. Numerically, this puts Australia into the same league as the biggest financial centres in Asia, like Singapore and Hong Kong. At the same time, the significant number of innovators calls for appropriate regulatory tools to realise, rather than inhibit, the potential of this FinTech. As the level of international regulatory competition increases, Australia's national FinTech development strategy cannot be analysed in isolation and should be benchmarked against the recognised financial sectors and FinTech hubs.

This report identifies the FinTech development strategies implemented by three leading financial centres – Hong Kong, Singapore and Switzerland – and compares them with the corresponding initiatives in Australia. It does not aim to analyse the entire regulatory landscape in the four jurisdictions or the status of the whole financial services ecosystem, and instead focuses on the bespoke techniques implemented in these jurisdictions to facilitate FinTech development.

This study identifies six main regulatory tools used to facilitate FinTech:

- regulatory sandboxes;
- regulatory consultations;
- financial and organisational support;

[*] Research Fellow and Member, Centre for Law, Markets and Regulation, UNSW Sydney.

[**] KPMG Law and King & Wood Mallesons Chair of Disruptive Innovation, Scientia Professor, and Member, Centre for Law, Markets and Regulation, UNSW Sydney. Professor Buckley chairs the Digital Finance Advisory Panel of the Australian Securities and Investments Commission (ASIC) however the views expressed herein are strictly his own, not those of ASIC.

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- enhancing domestic FinTech expertise;
- cross-border collaboration; and
- facilitating regulation.

Over the recent years, regulatory sandboxes have become widely recognised as useful instruments for promoting FinTech by national regulators and international organisations. The report identifies three different models of regulatory sandboxes: (i) authorisation model, (ii) non-authorisation model and (iii) mixed model. Authorisation sandboxes introduce carve-outs from the otherwise applicable rules (which remain unchanged) but restrict the application of such carve-outs to a limited set of firms selected by the regulator. This model applies in Hong Kong and Singapore. Non-authorisation sandboxes do not involve any screening of prospective applicants and instead establish a legal framework for testing small-scale innovations equally applicable to all firms, from start-ups to large financial institutions. This model has been implemented in Switzerland. The Australian sandbox model is characterised as a 'mixed' sandbox, since it combines the features of both of the above (authorisation and non-authorisation) sandbox types.

All four jurisdictions covered by this report have engaged in the process of sandbox review and modernisation, albeit in different forms and at different stages. Sandbox adjustments can range from minor regulatory tweaks and clarifications (in the case of Switzerland) to the introduction of entirely new additional sandbox models to complement the existing regulatory toolkit (as was done in Singapore, where the new 'Sandbox Express' has created three new bespoke sandboxes with pre-defined parameters in areas where the relevant risks are deemed to be 'low and well understood').

The report differentiates regulatory sandboxes from another form of FinTech promotion – regulatory consultations. The former assist innovators by creating a restricted regulatory framework for on-market experimentation, while the latter aim to facilitate contact and information exchange between regulators and FinTech firms. This study notes that the different forms of implementation and the lack of a uniform taxonomy or naming convention applicable to regulatory consultations can make comparisons of the relevant initiatives in different countries complicated.

Top-down regulatory initiatives for facilitating FinTech include direct organisational and financial support to innovators. With no attempt at being exhaustive, this report highlights a variety of such initiatives in the four jurisdictions covered, from financial grants, to annual FinTech events, to establishing domestic FinTech hubs.

Regulators also invest in future-oriented measures to enhance domestic FinTech expertise in two main forms: (i) strategies to develop FinTech expertise among regulators and (ii) initiatives to raise FinTech talent generally. Hong Kong and Singapore provide useful examples of such initiatives.

The report stresses that for many FinTech products and services operating on a cross-border basis, domestic regulation is only one of many obstacles to innovation. Some of the underlying challenges can only be adequately addressed at a cross-border or international level. To help facilitate development of such projects, regulators in Australia, Hong Kong, Singapore and Switzerland have all engaged in various bilateral and multilateral forms of cross-border collaboration with foreign regulators, as well as with international organisations.

The list of FinTech-facilitating measures would be incomplete without mentioning rules adopted to facilitate FinTech generally. As the financial services sector is often subject to detailed and sophisticated rules, a common concern is that innovation may be stifled by overregulation or due to unclear status of innovative products or services (which is also one of the main reasons for the establishment of regulatory sandboxes). As a result, lawmakers and regulators keep revising the existing legal frameworks to (i) eliminate gaps in regulation, (ii) prevent duplication in existing legal frameworks and (iii) clarify how the existing rules should apply to FinTech solutions.

In conclusion, this report argues that in designing FinTech development strategies each jurisdiction should take into account the entire financial services sector, as well as the resources and opportunities offered by all existing stakeholders (including all of the relevant governmental offices and supervisory authorities), rather than individual regulators. Individual measures – eg regulatory sandboxes – have very limited potential without complementary tools, such as regulatory consultations, organisational support and facilitating regulation.

The report concludes with a set of practical recommendations for addressing the upcoming challenges in FinTech regulation Australia is likely to face.

> 'Australia has a proud history of making the most of our international networks and being early adopters of new technologies. Our challenge now is to capture the competitive gains that come with pioneering innovation and leading the way in global markets.'[1]
>
> Australian Treasury, 18 March 2016

1. Introduction

The financial services sector is at the forefront of Australia's economy, employing around 440,000 people and contributing $163 billion in 2017-2018.[2] Its potential is enormous but cannot be realised without public support and public trust, which cannot be assumed. As a timely reminder, the Final Report[3] of the Royal Commission into the disturbing practices adopted by financial services entities in the country brought to light and condemned serious misconduct in our financial services industry that continued unabated for years and which undermined the public trust underpinning the Australian financial sector.

To restore public trust, the Government agreed to reform the financial sector and take action on all 76 recommendations found in the Royal Commission's Final Report[4] and published an implementation roadmap in August 2019.[5] The roadmap represents 'the largest and most comprehensive corporate and financial services law reform package since the 1990s'.[6]

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[1] Australian Treasury, 'An Innovation-ready Nation', *Backing Australian FinTech* (Web Page, 18 March 2016) <https://treasury.gov.au/publication/backing-australian-fintech/an-innovation-ready-nation>.

[2] Jane Hume, 'Address to the Financial Services Council Summit' (Speech, Address to the Financial Services Council Summit, 27 August 2019) <http://ministers.treasury.gov.au/ministers/jane-hume-2019/speeches/address-financial-services-council-summit-sydney>.

[3] *Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry* (Final Report, February 2019) vol 1-3 <https://financialservices.royalcommission.gov.au/Pages/reports.aspx>.

[4] Australian Government, *Restoring Trust in Australia's Financial System: The Government Response to the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry* (The Government response to the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry, February 2019) 1 <https://treasury.gov.au/sites/default/files/2019-03/FSRC-Government-Response-1.pdf>.

[5] Australian Government, *Restoring Trust in Australia's Financial System: Financial Services Royal Commission Implementation Roadmap* (Financial Services Royal Commission Implementation Roadmap, August 2019) <https://treasury.gov.au/sites/default/files/2019-08/399667_Implementation_Roadmap_final.pdf>.

[6] Ibid iv.

In this period of recovery for Australia's financial sector, it remains important, while trying to restore what has been lost, not to lose sight of the opportunities offered by technological innovations in finance (or 'FinTech'), which have the potential to assist with addressing some of the issues revealed by the Royal Commission to keep Australia regionally and globally competitive.

1.1. What is FinTech?

There is no uniform approach to defining FinTech, and there are numerous issues associated with designing 'FinTech-specific' regulation. The relevant implications have been summarised by the authors elsewhere.[7] For the purposes of this report, 'FinTech' is defined broadly, as technology-enabled innovation in financial services, regardless of the degree of novelty resulting from it or the consequences for the market and other stakeholders.

FinTech is a broad and evolving concept that covers multiple innovations, including, but not limited to, the following:

- artificial intelligence (AI) and machine learning;
- asset and wealth management;
- blockchain and distributed ledger technology;
- crowdfunding and peer-to-peer lending;
- cryptoassets;
- digital ID and e-KYC;
- e-money;
- insurance technologies (InsurTech);
- regulatory technologies (RegTech)[8];
- robo-advice;
- smart contracts;
- sovereign digital currencies.

Although FinTech firms (which include both start-ups and incumbent financial institutions) operate within the financial services sector that is already highly regulated, the following

[7] See Anton Didenko, 'Regulating FinTech: Lessons from Africa' (2018) 19(2) *San Diego International Law Journal* 311, 317-326.

[8] RegTech solutions have the potential not only to simplify reporting and otherwise reduce the regulatory burden on financial firms, but also to enhance supervisory practices, make internal processes more transparent and dramatically reduce the scope for future misconduct and curb the opportunities for covering up past violations.

distinguishing characteristics of FinTech make traditional regulatory approaches inefficient and necessitate bespoke FinTech rules:

1. Existing regulation may lack the flexibility to adequately address innovative products and business models.

2. FinTech solutions may simplify access to financial services for unsophisticated parties who may require additional protection.

3. The speed of innovation hastens the development cycle of FinTech firms and the transition from 'too-small-to-care' to 'too-big-to-fail' and from purely domestic applications to cross-border and even global modes of service delivery.

4. Some of the new technologies may decentralise and disintermediate the delivery of financial services, creating complications for regulators attempting to exercise domestic oversight and encouraging international regulatory cooperation.[9]

1.2. Why promote FinTech?

A robust FinTech ecosystem enhances not only the internal competition within the financial services sector, but also the entire sector's overall competitiveness. The Australian Government promotes Australia 'as a hot house for financial services' and a launching pad for FinTech innovators into Asia and other overseas markets.[10]

The national FinTech priorities cover a wide range of innovations: crowdfunding, comprehensive credit reporting, greater availability of data, regulatory sandboxes, technological neutrality, robo-advice, digital currencies, blockchain, government procurement technologies (ProcTech), cybersecurity, domestic non-AUD settlements and insurance technology (InsurTech).[11]

Australia has already made substantial progress in attracting technological innovation in finance. Between 2014 and 2019, the number of FinTech start-ups increased more than six-

[9] Anton Didenko (n 7) 320-321.

[10] 'Australia's FinTech priorities', *Backing Australian FinTech* (Web Page) <https://fintech.treasury.gov.au/australias-fintech-priorities/>.

[11] Ibid.

fold, from less than 100[12] to over 600 firms.[13] This puts Australia into the same league as the biggest financial centres in Asia – Singapore (with over 600 FinTech start-ups)[14] and Hong Kong (with over 550 FinTech start-ups)[15].

The FinTech landscape in Australia is becoming increasingly diverse, with innovative technologies being developed in blockchain, capital markets, crowdfunding, data and analytics, InsurTech, lending, middle and back office support, payments and digital currencies, personal finance management, RegTech and WealthTech.[16]

However, Australia is not alone in its attempts to attract FinTech talent and investment. There is substantial regulatory competition globally to encourage FinTech innovations. Our regional and global competitors are launching new regulatory initiatives and programmes to support FinTech that may sway innovators. It is therefore critical not to view Australia's FinTech development strategy in isolation – and instead benchmark the local regulatory framework against recognised financial sectors and FinTech hubs.

1.3. Scope and methodology

This report identifies the FinTech development strategies implemented by three leading financial centres – Hong Kong, Singapore and Switzerland – and compares them with the corresponding initiatives in Australia. It does not aim to analyse the entire regulatory landscape in the four jurisdictions or the status of the whole financial services ecosystem, and instead focuses on the bespoke techniques implemented in these jurisdictions to facilitate FinTech development.

Data for this report have been generated from desk-based research and interviews with the financial service regulators and experts in Australia, Hong Kong, Singapore and Switzerland.

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12 *Scaling the Fintech Opportunity: For Sydney & Australia* (Issues Paper 17, July 2017) 7 <https://assets.kpmg/content/dam/kpmg/au/pdf/2017/scaling-fintech-opportunity-sydney-australia.pdf>.

13 Ian Pollari and Amanda Price, 'Australian Fintech Landscape', *KPMG* (Web Page, 18 October 2019) <https://home.kpmg/au/en/home/insights/2017/08/australian-fintech-landscape.html>.

14 'FinTech and Innovation', *Monetary Authority of Singapore* (Web Page) <https://www.mas.gov.sg/development/fintech> accessed 24 December 2019.

15 'Connected to Win', *InvestHK FintechHK* (Web Page, 17 December 2018) <http://www.hongkong-fintech.hk/en/news/connected-to-win.html>.

16 *KPMG Australian Fintech Landscape* (Infographic, 2019) <https://home.kpmg/content/dam/kpmg/au/pdf/2019/australian-fintech-landscape-2019.pdf>.

2. FinTech promotion techniques

2.1. Regulatory sandboxes

Like many other jurisdictions, each of Australia, Hong Kong, Singapore and Switzerland has reported the creation of a 'sandbox' to promote FinTech. However, since the scope of FinTech sandbox initiatives tends to fluctuate from country to country (and occasionally even within the same country), the term 'sandbox', as noted by the French regulators, 'does not benefit from a clear and consistent definition'.[17]

In the context of computer engineering, this word refers to a software testing facility isolated from the rest of the network that allows secure testing of a new code. In the financial services sector, a 'sandbox' is predominantly associated with structured experimentation that can take many forms. At a conceptual level, financial sandboxes can be broken down into two groups: (i) regulatory sandboxes and (ii) industry sandboxes.

A 'regulatory sandbox' is a programme that allows FinTech firms to test a new product or service in an actual (but limited) market environment, without necessarily incurring all existing regulatory restrictions.

In contrast, an 'industry sandbox' refers to a shared development environment created by the industry for off-market testing of innovative technologies.[18]

The main differences between the two 'sandbox' categories are two-fold: (i) the originating entity and (ii) possibility of on-market testing.

Regulatory sandboxes are commonly established by financial services regulators and provide eligible entities with an opportunity to engage with real clients in a situation when this would not be permissible under the existing regulatory framework. The prospective value of on-market testing is highlighted by the UK Financial Conduct Authority:

[17] Banque de France and ACPR, *European Commission's Public Consultation on FinTech: A More Competitive and Innovative European Financial Sector* (Joint answer from Banque de France and Autorité de contrôle prudentiel et de résolution (ACPR)) 11 <https://acpr.banque-france.fr/sites/default/files/medias/documents/20170615_reponse_consultation_europe_0.pdf>.

[18] *Industry Sandbox: A Development in Open Innovation (Consultation Report)* 4 <http://industrysandbox.org/wp-content/uploads/2017/05/Industry-Sandbox-Consultation-Report-Full.pdf>.

> Testing in a live environment provides an opportunity to understand how receptive consumers are to different pricing strategies, communication channels, business models and to the new technologies themselves.[19]

Unlike regulatory sandboxes, an industry sandbox is predominantly a form of industry self-organisation that can be implemented in many formats, from a simple shared collection of application programming interfaces (APIs) or databases to complex systems with different access rights for participants. Since this initiative does not involve on-market testing (and may use synthetic data[20] instead of live testing parameters), it does not, on its own, raise regulatory implications and, therefore, does not require a regulator to be directly involved. This does not imply, however, that regulators cannot participate in the setting-up of an industry sandbox. For example, perhaps the best-known example of an industry sandbox – the ASEAN Financial Innovation Network (AFIN) – was established in November 2017 as a result of collaboration between the ASEAN Bankers Association, International Finance Corporation, a member of the World Bank Group, and the Monetary Authority of Singapore (MAS).[21] AFIN's cross-border open-architecture platform known as 'APIX' was designed as a tool to facilitate collaboration between financial institutions and FinTech firms:

> The APIX sandbox allows financial institutions and FinTech firms to collaboratively design experiments to validate digital solutions in different scenarios via APIs.[22]

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[19] Financial Conduct Authority, *Regulatory Sandbox Lessons Learned Report* (Report, October 2017) 6 <https://www.fca.org.uk/publication/research-and-data/regulatory-sandbox-lessons-learned-report.pdf>.

[20] In this context, data not obtained directly from customers or their use of the relevant FinTech product or service.

[21] Monetary Authority of Singapore, 'ASEAN Financial Innovation Network to Support Financial Services Innovation and Inclusion', *Media Releases* (Web Page, 16 November 2017) <https://www.mas.gov.sg/news/media-releases/2017/asean-financial-innovation-network-to-support-financial-services-innovation-and-inclusion>.

[22] Monetary Authority of Singapore, 'API Exchange (APIX)', *FinTech and Innovation* (Web Page) <https://www.mas.gov.sg/development/fintech/api-exchange>.

Image 1. Regulatory sandboxes vs industry sandboxes

Regulatory sandbox	Industry sandbox
A 'safe space' for innovators	A shared development environment
Regulatory initiative with regulatory implications	Form of industry self-organisation (regulator's involvement optional)
'On-market' innovation testing	'Off-market' testing and collaboration

2.1.1. International context

According to the 2018 Bali FinTech Agenda developed jointly by the International Monetary Fund and the World Bank, regulation of new activities and innovative business models should be proportionate to their risks 'in order not to stifle innovation'.[23] For this reason, restricted authorisation schemes for new market entrants with specific regulatory exclusions (such as regulatory sandboxes) have been identified as useful instruments for promoting FinTech. It should be noted, however, that although the 2018 Bali FinTech Agenda considers regulatory sandboxes in the context of 'new market entrants' (ie start-up FinTech firms), in practice regulatory sandboxes are equally used to promote innovation by incumbent financial institutions.[24]

At the same time, despite the opportunities it offers to FinTech firms, the concept of a regulatory sandbox has not been universally accepted as a result of the underlying risks and challenges it may represent.

First, in the majority of such sandboxes, regulators select only a limited number of participants from a larger pool of applicants, effectively choosing who gets to enjoy the preferential regulatory status, and who does not. Sandbox selection criteria (such as the 'novelty' requirement) are often abstract and do not lend themselves to objective quantitative assessment, leaving regulators open to allegations of arbitrariness.

[23] International Monetary Fund, *The Bali Fintech Agenda* (Policy Paper, October 2018) 23 <https://www.imf.org/~/media/Files/Publications/PP/2018/pp101118-bali-fintech-agenda.ashx>.

[24] The regulatory sandbox established by the Hong Kong Monetary Authority (HKMA) is open only to licensed institutions and those technology firms which apply jointly with a licensed institution. At the time of writing, almost one third of all projects admitted to the HKMA sandbox were banks testing their own innovations. See section 2.1.3 below.

This illustrates what can be called the biggest irony of regulatory sandboxes: a regulatory model designed to *level* the playing field between FinTech start-ups and incumbent financial institutions (by giving the former an opportunity to test a new product on a limited scale with certain regulatory exemptions), in practice also *generates an uneven playing field* between those FinTech firms accepted into the sandbox and those that are not. Financial market pragmatism takes this inequality to another level: the same financial institutions which were supposed to end up on an equal footing with FinTech start-ups can effectively use regulatory sandboxes as a handy screening tool to choose the best targets for acquisition and may even *require sandboxing* before they agree to work with such start-ups. Equally, firms often treat admission into the sandbox as a 'stamp of approval' and a powerful marketing instrument, which – if used without adequate restrictions – may confuse customers by creating a perception that the regulator endorses the relevant product or service.

Second, close cooperation of FinTech firms and regulators within the regulatory sandbox generates reputational risks. Failed sandbox projects – including any negative implications for customers – may be attributed to the regulator, on the grounds of inadequate screening to identify potential issues.

Third, any supervisors playing the role of FinTech facilitators need to be mindful of the risk of regulatory capture. Flexibility and assistance offered to innovators admitted into the sandbox should be carefully weighed against other regulatory objectives to avoid adopting an excessively de-regulatory mindset that generates unjustified risk to customers and the financial system at large.

Fourth, regulators, particularly in developing countries, need to be realistic about the expected benefits of a sandbox – which are often very limited. For example, limited scale of sandbox projects does not always permit regulators to have a good understanding of the underlying implications. Although several jurisdictions have adopted supplementary regulatory initiatives, such as regulatory consultations (see section 2.2) or direct financial support to FinTech firms (see section 2.3), the usefulness of regulatory sandboxes is often overestimated, as 'regulators prioritize resource-intensive sandbox programs over more comprehensive innovation policies, market engagement strategies, or financial inclusion programs'.[25]

Fifth, regulatory sandboxes are resource-intensive initiatives, and their effectiveness is proportional to the level of regulatory expertise and the amount of resources invested in them. Unfortunately, this simple truth is often ignored, as regulatory sandboxes multiply without generating expected benefits. In other words, it may be relatively simple to copy another country's set of sandbox regulations, but the effect – if the sandbox is not backed by sufficient planning and resources – is likely to be underwhelming. According to the joint study by the FinTech Working Group of the United Nations Secretary-General's Special Advocate for Inclusive Finance for Development (UNSGSA) and Cambridge Centre for Alternative Finance (CCAF) at the University of Cambridge Judge Business School, '[a]lmost two thirds of … regulators interviewed noted that they had significantly underestimated the resources required to develop and operate their sandboxes'.[26] The same study further disturbingly suggests that 'around a quarter of regulators have launched sandbox initiatives *without first evaluating feasibility, demand, potential outcomes, or collateral effects*'.[27]

The above challenges are not trivial: major economies like France and Germany have expressly rejected the regulatory sandbox concept. Nevertheless, the proliferation of regulatory sandboxes in recent years suggests that many jurisdictions take the view that the benefits of regulatory sandboxes outweigh (or at least should outweigh) the relevant risks.[28] This remains true in all four jurisdictions covered in this report. Australia, Hong Kong, Singapore and Switzerland have all set up their own regulatory sandboxes – albeit with very different designs.

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[25] UNSGSA FinTech Working Group and CCAF, *Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech* (Report, 2019) 30 <https://www.unsgsa.org/files/2915/5016/4448/Early_Lessons_on_Regulatory_Innovations_to_Enable_Inclusive_FinTech.pdf> ('*Early Lessons on Regulatory Innovations*').

[26] Ibid 31.

[27] Ibid (emphasis added).

[28] See CGAP and World Bank Group, *Regulatory Sandbox Global Survey* (Summary Results, 2019), <https://www.findevgateway.org/sites/default/files/publication_files/surevy_results_ppt_cgap_wbg_final_20190722_final.pdf>. See also *Early Lessons on Regulatory Innovations* (n 25) 26.

2.1.2. Taxonomy of regulatory sandboxes

Regulatory sandboxes have been established in all four examined jurisdictions, but their internal set up varies substantially. The differences include, among other things, the amount of flexibility retained by the regulator, the need for an *ex ante* regulatory approval, varying degrees of legal certainty and potential impact, and the amount of regulatory resources dedicated to the set-up of the sandbox.

At a conceptual level, every regulatory sandbox represents a custom solution to the inequality conundrum caused by the diverse spectrum of FinTech firms, which range from small start-up companies to large incumbent financial institutions. On the one hand, equal but high regulatory requirements can be prohibitive for smaller unsophisticated businesses and thus tend to favour banks and other big market players. On the other hand, equal but low regulatory parameters may risk jeopardising the safety and stability of the financial system or the protection of consumers.

To achieve a balance between these two extremes, known regulatory sandboxes add a certain level of flexibility, by making the financial services sector more accessible for firms requiring regulatory assistance and support. This is generally achieved using one of two sandbox models: (i) authorisation model and (ii) non-authorisation model.

Authorisation sandboxes introduce carve-outs from the otherwise applicable rules (which remain unchanged) but restrict the application of such carve-outs to a limited set of firms selected by the regulator. The scope of such carve-outs is generally determined on a case-by-case basis, taking into account a number of factors, such as the type of product or service in question and the underlying risks of testing the innovation on-market with real customers.

Non-authorisation sandboxes do not involve any screening of prospective applicants and instead establish a legal framework for testing small-scale innovations equally applicable to all firms, from start-ups to large financial institutions. Such a framework is most helpful for unlicensed firms, which would not be able to offer the relevant products or services to real clients otherwise. Although incumbent financial institutions can equally make use of non-authorisation sandboxes, the corresponding benefits of such programmes would be rather limited. On the one hand, such institutions are likely to have the relevant licences already. On the other hand, even if they do not possess a corresponding licence, their size and ability to scale will not give them a competitive advantage over a start-up: sandbox tests are limited in scope and size.

2.1.3. Authorisation sandboxes

Regulatory sandboxes in Hong Kong and Singapore (see Image 2) follow the authorisation model: admission requires preliminary approval from a regulator. The selection process – similarly to the vast majority of known regulatory sandboxes – involves a review of applications from prospective participants against the relevant selection criteria. Also, in line with most regulatory sandboxes, admission is on a rolling basis in both jurisdictions.[29]

Image 2. Number of accepted sandbox projects in Hong Kong and Singapore[30]

HKMA	SFC	IA	MAS
119 (as of February 2020)	No published data	No published data	8 (as of November 2019)

A distinguishing feature of the regulatory sandboxes in these two jurisdictions is their flexibility. Regulators in Hong Kong and Singapore opted for a highly customisable sandbox design: many eligibility and assessment parameters (including the maximum duration of a sandbox test) are not defined *ex ante* and are determined on a case-by-case basis.

Nonetheless, despite having similar design elements, the two variations of the authorisation sandbox model in Hong Kong and Singapore turned out rather differently.

First, the two jurisdictions implement very different regulatory frameworks. Singapore's financial services industry is regulated by a single body – the Monetary Authority of Singapore (MAS) – which oversees the banking, capital markets, insurance and payments sub-sectors. For this reason, the MAS is the only operator of the regulatory sandbox in

[29] A small number of jurisdictions established a cohort-based admission process, whereby prospective participants can apply only within pre-determined windows of opportunity. Notable examples include Abu Dhabi and the United Kingdom. Some jurisdictions, like Sierra Leone, developed a mixed approach, whereby licensed entities are eligible to apply on a rolling basis, whereas any other FinTech firms can be admitted only as part of a cohort. See Bank of Sierra Leone, *Regulatory Sandbox Pilot Program Guidelines and Application Form* (April 2018) ss 8-9 <http://www.bsl.gov.sl/Final%20BSL_Sandbox%20Pilot%20Program%20Framework%20and%20Application%20Form%206.4.2018.doc>.

[30] The relevant numbers are based on the latest publicly available data at the time of writing. The information on the total number of sandbox projects in Singapore was kindly provided to the authors by the MAS.

Singapore. In contrast, Hong Kong's regulatory landscape is more fragmented and comprises multiple regulators. As a result, although Hong Kong's regulatory sandbox was first launched by the Hong Kong Monetary Authority (HKMA) in September 2016, one year later it was supplemented by two more sandboxes developed, respectively, by the Insurance Authority (IA) and the Securities and Futures Commission (SFC).

Second, the regulatory sandboxes in these two jurisdictions are targeting different business types. The sandbox in Singapore (formally known as the 'FinTech Regulatory Sandbox') is open to a broad pool of prospective participants, regardless of their regulatory status: the term 'applicant' includes not only financial institutions, but also 'any interested firm'.[31] The MAS acknowledges that both incumbents and start-ups are likely to 'err on the side of caution' and choose not to implement innovation in case of regulatory uncertainty and stresses that the target audience of the regulatory sandbox 'includes but is not limited to [financial institutions], FinTech firms, and professional services firms partnering with or providing support to such businesses'.[32]

The Hong Kong regulators, on the contrary, have set up their regulatory sandboxes with a different pool of applicants in mind. Following a more risk-averse approach, the HKMA, IA and SFC sandboxes are open only to licensed entities: 'technology firms' can only apply *jointly* with an authorised institution.[33] It follows that FinTech start-ups not holding a corresponding licence remain ineligible to apply *on their own* and need to undergo screening by incumbent institutions. For example, out of 119 sandbox trials conducted by the HKMA by the end of February 2020, banks collaborated with tech firms in 81 trial cases.

Third, although the sandbox frameworks are quite flexible in both jurisdictions, the amount of guidance offered to prospective applicants *ex ante* differs substantially: the sandbox guidelines prepared by the MAS are significantly more detailed (see Image 3). The lack of

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[31] Monetary Authority of Singapore, *FinTech Regulatory Sandbox Guidelines* (November 2016) s 2.2 <https://www.mas.gov.sg/-/media/MAS/Smart-Financial-Centre/Sandbox/FinTech-Regulatory-Sandbox-Guidelines-19Feb2018.pdf?la=en&hash=1F4AA49087F9689249FB8816A11AEAA6CB3DE833> ('*MAS Sandbox Guidelines*').

[32] Ibid ss 1.7, 4.1.

[33] Although the SFC circular announcing the establishment of the SFC sandbox states that 'both licensed corporations *and start-up firms*' are eligible, it does not waive the licensing requirement: each start-up 'will need to apply for and obtain the appropriate licence'. See Securities and Futures Commission, 'Circular to announce the SFC Regulatory Sandbox', *Circulars* (Web Page, 29 September 2017) (emphasis added) <https://www.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=17EC63>.

detail in the Hong Kong sandbox materials is not, however, a result of oversight by the relevant regulators. On the contrary, limited regulatory guidance appears to be a policy decision: more detailed provisions are not necessary if the relevant terms are determined on a case-by-case basis. For example, the IA expressly acknowledges that it 'does not intend to define parameters for the … principles and to stipulate an exhaustive list of supervisory requirements that may potentially be relaxed within the Sandbox framework'.[34]

At the same time, the higher level of detail provided by the MAS does not imply that the regulator in Singapore is necessarily more prescriptive and lacks flexibility. In fact, the guidance from the MAS often remains illustrative and non-exhaustive, even where it contains specific and clear parameters. For example, although the regulator has set an internal deadline for the evaluation of sandbox applications (21 working days following the receipt of a complete set of required documents), this deadline is largely indicative. On the one hand, it does not represent a firm commitment to respond within the time specified (illustrated by the words 'MAS shall review the application and *endeavour* to inform the applicant').[35] On the other hand, the deadline relates only to the *initial* assessment of potential suitability of the proposed product or service for the regulatory sandbox: the MAS does not commit to any specific timeframe when making the final decision, noting that 'the time required to fully assess the application … is dependent on its completeness and complexity, and the specific legal and regulatory requirements involved'.[36]

Regardless of the different design choices made by the regulators in Hong Kong and Singapore, the *target audience* of the sandbox regime remains the critical factor in determining the usefulness of the authorisation model. The more detailed guidance offered by the MAS casts a wider net in terms of prospective participants, and the extra detail provided is likely to be particularly useful for unsophisticated applicants (such as start-ups not backed by an incumbent financial institution) – even if such additional guidance ends up being illustrative and non-specific. The more discreet approach in Hong Kong may work well insofar as the sandboxes are aimed at regulated entities (and innovators working with regulated entities), presuming that *each* prospective applicant is either a sophisticated market

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[34] Insurance Authority, 'Insurtech Corner', *About Us* (Web Page) <https://www.ia.org.hk/en/aboutus/insurtech_corner.html>.

[35] *MAS Sandbox Guidelines* (n 31) s 8.2 (emphasis added).

[36] Ibid.

player already, or is backed by one. However, this focus on incumbent financial institutions is likely to limit the value proposition underpinning Hong Kong's regulatory sandboxes: if an applicant is expected to hold or obtain a licence at the time of application, what benefits can the sandbox provide to such applicant (given the limited amount of information about the level of regulatory flexibility)? There is little doubt that regulators would be keen to learn more about innovative products and services from sandbox participants, but it remains to be seen whether the opportunities offered within the regulatory sandbox are sufficiently attractive for innovators themselves.

Image 3. Regulatory sandboxes in Hong Kong and Singapore: side-by-side comparison

	Singapore	**Hong Kong**		
	MAS **'FinTech Regulatory Sandbox'**	**HKMA** **'FinTech Supervisory Sandbox'**	**SFC** **'Regulatory Sandbox'**	**IA** **'Insurtech Sandbox'**
Launch date	June 2016	September 2016	September 2017	September 2017
Applicants	Any legal entity	Authorised institutions and 'partnering technology firms'	Licensed firms	Authorised insurers and cooperating technology firms
Eligibility requirements	Novelty Useful innovation Localisation (benefit to the local financial services sector) Readiness for testing	Readiness for testing	Novelty Fit and proper requirements Useful innovation Localisation (benefit to the local financial services sector)	Readiness for testing (well-defined scope, risk management controls, customer protections, sufficient resources to perform the test, exit strategy)
Application fees	None	None	Not specified	Not specified
Application evaluation	No fixed time period (preliminary assessment within 21 working days)	Not specified	Not specified	Not specified
Admission type	Rolling basis	Rolling basis	Rolling basis	Rolling basis

Maximum duration	Not specified	Not specified	Not specified	Not specified
Extension	Possible, unrestricted (at least 1 month prior to the expiration of sandbox period)	Not specified	Not specified	Not specified
Restrictions	Not specified	Not specified	Non-exhaustive list: Limited types of clients Maximum exposure of each client	Not specified
Ongoing obligations	Non-exhaustive list: Reporting (based on agreed schedule) Customer protection measures: - Notice to customers concerning sandbox status and the key risks Obtain customer acknowledgment of underlying risks	Non-exhaustive list: Customer protection measures - Adequate process to select customers who understand the risks - Complaint handling procedures - Timely and fair compensation of customer losses - Arrangements for customer withdrawal	Non-exhaustive list: Set up compensation schemes for investors Submit to periodic supervisory audits by the SFC Client protection measures: - Notice to customers concerning sandbox status, the key risks and compensation arrangements	Non-exhaustive list: Client protection measures: - Notice to customers concerning sandbox status, withdrawal and compensation arrangements
Regulatory flexibility	Non-exhaustive list: Asset maintenance requirement Board composition	Non-exhaustive list: Security-related requirements for electronic banking services	Not specified	Not specified

	Cash balances Credit rating Financial soundness Fund solvency and capital adequacy Licence fees Management experience MAS guidelines Minimum liquid assets Minimum paid-up capital Relative size Reputation Track record	Timing of independent assessment prior to launching new technology services		
Regulatory inflexibility	Non-exhaustive list: Confidentiality of customer data Fit and proper criteria (particularly on honesty and integrity) Handling of customer’s moneys and assets by intermediaries AML/CFT	Not specified	Not specified	Not specified

Changes to proposed service	Permitted, material changes require application to MAS (at least 1 month in advance)	Not specified	Not specified	Not specified
Early termination by the regulator	Unsatisfactory results Discovery of a major flaw that cannot be resolved during the sandbox period Breach of sandbox restrictions	Not specified	Not specified	Not Specified

2.1.4. Non-authorisation sandboxes

Switzerland is a rare example of a jurisdiction using the non-authorisation model of a regulatory sandbox: eligible FinTech firms do not require any form of *ex ante* permission to enter the sandbox and test innovative products or services. Since there is no application process, the rules and regulations establishing this sandbox model do not need to address a whole range of parameters that are common for the authorisation model (see Image 4).

Image 4. Regulatory parameters of different models of a regulatory sandbox

Regulatory parameters	Authorisation model	Non-authorisation model
Applicants	Yes	No
Eligibility requirements	Yes	No
Application fees	Yes	No
Application evaluation	Yes	No
Admission type	Yes	No
Maximum duration	Yes	Yes
Extension	Yes	Yes
Restrictions	Yes	Yes
Ongoing obligations	Yes	Yes
Regulatory flexibility	Yes	Yes
Regulatory inflexibility	Yes	No
Changes to proposed service	Yes	No
Early termination by the regulator	Yes	Possible

The Swiss sandbox aims to facilitate innovation indirectly: instead of authorising specific time-limited projects, it lowers the barriers for accepting deposits from third parties. This approach is highly pragmatic, since many business models (from payments to crowdfunding) require FinTech firms to accept client deposits, which – in principle – is open to licensed banks only. To facilitate the development of such business models, the Swiss sandbox waives the requirement to obtain a banking licence for innovators who accept public deposits up to CHF 1,000,000 (regardless of the number of depositors), provided that (i) such deposits are not invested and do not bear interest and (ii) depositors are informed in advance that the business is not subject to FINMA supervision and that the deposits are not covered by the deposit protection scheme.[37] Although in theory this licensing waiver can be relied on by any entity (rather than just FinTech firms), in practice it removes a major entry barrier for start-up innovators rolling out new financial services. After all, larger businesses are unlikely to make much use of the Swiss sandbox due to the limited scale of permitted activities dictated by the total cap on eligible deposits (CHF 1,000,000).

2.1.5. Mixed sandboxes

Australia has implemented a regulatory model that combines the elements of authorisation and non-authorisation sandboxes. The Australian Securities and Investments Commission (ASIC) defines a 'regulatory sandbox' as a combination of three different types of regulatory flexibility permitting firms to test innovative solutions without an Australian financial services licence or Australian credit licence:

a. existing statutory exemptions or flexibility in the Corporations Act 2001 and National Consumer Credit Protection Act 2009;

b. the 'fintech licensing exemption' relating to certain financial and credit activities; and

c. individual relief granted by ASIC in the form of tailored licensing exemptions to a particular business to facilitate product or service testing.[38]

On the one hand, the individual exemptions forming the third category imply an application-based process of vetting individual requests for regulatory flexibility – in line with other authorisation sandboxes. In ASIC's own words, such exemptions 'are similar to the "regulatory sandbox" frameworks established by financial services regulators in other

[37] FINMA, 'Sandbox and Settlement Accounts: FINMA Amends Circular', *News* (Web Page, 01 September 2017) <https://www.finma.ch/en/news/2017/09/20170901-mm-rs-publikumseinlagen-bei-nichtbanken/>.

[38] Australian Securities and Investments Commission, *Testing Fintech Products and Services Without Holding an AFS or Credit Licence* (Regulatory Guide 257, August 2017) s 257.22 ('*ASIC Regulatory Guide 257*').

jurisdictions'[39] – clearly referring to authorisation sandboxes. Interestingly, however, individual relief had been offered by ASIC long before the emergence of the earliest FinTech-focused regulatory sandboxes[40] and thus its *current* classification by the same regulator as an element of a 'regulatory sandbox' can be seen as largely superficial (without prejudice to its overall effectiveness in promoting FinTech).[41]

While ASIC does provide clarifications on various aspects of individual relief,[42] the relevant guidance covers mostly the application process and the main underlying principles for issuing regulatory exemptions (rather than more specific parameters, such as eligibility requirements or maximum duration). As a general rule, when considering applications for individual relief, the regulator aims to weigh the commercial benefit and any net regulatory benefit or detriment resulting from granting the exemptions sought on proposed conditions and grants relief where:

- there is a net regulatory benefit; or
- the regulatory detriment is minimal and is clearly outweighed by the resulting commercial benefit.[43]

To promote efficiency, ASIC is also empowered, where it deems appropriate, to issue class orders to avoid the need for applicants to apply for relief on a case by case basis.[44]

On the other hand, the remaining elements of ASIC's regulatory sandbox (namely, the existing statutory exemptions and the 'fintech licensing exemption') follow the non-authorisation model but apply differently. The statutory exemptions (such as authority to provide financial services or engage in credit activities without a licence when acting on behalf of an existing licensee)[45] are generally available to any entity without limitation as to

[39] Ibid s 257.22(c).

[40] The first FinTech regulatory sandbox was launched by the UK Financial Conduct Authority in June 2016.

[41] See, eg, Australian Securities and Investments Commission, *Applications for Relief* (Regulatory Guide 51, December 2009) ('*ASIC Regulatory Guide 51*').

[42] Ibid. See also Australian Securities and Investments Commission, *Licensing: Discretionary Powers* (Regulatory Guide 167, June 2019); Australian Securities and Investments Commission, *Disclosure: Discretionary Powers* (Regulatory Guide 169, 25 January 2007).

[43] *ASIC Regulatory Guide 51* (n 41) s 51.57.

[44] Ibid s 51.63.

[45] *ASIC Regulatory Guide 257* (n 38) ss 257.26-257.28.

their duration (similar to the Swiss sandbox). In contrast, the ‘fintech licensing exemption’ constitutes a special regulatory regime that is available to eligible parties only for a limited time (up to 12 months) and requires notice to the regulator.

Neither of the two types of ASIC’s non-authorisation sandbox involves *ex ante* assessment of the level of innovativeness of the relevant product or service, thereby reducing the workload of the regulator. Major differences emerge, however, on an *ex post* basis. ASIC is empowered to terminate a firm’s access to the ‘fintech licensing exemption’ where, in the regulator’s view, the relevant activities ‘are not innovative and/or do not use technology when providing financial services or credit’.[46] Whereas this ‘residual’ authority to perform retrospective evaluation of the sandbox project appears to be a measure against abuse of sandbox privileges, it is difficult to justify in the context of a non-authorisation sandbox – a model which does not involve vetting of prospective participants. While it is understandable that the regulator may not be prepared to relinquish authority to terminate the sandbox, an *ex post* determination that the product or service tested in the sandbox is not sufficiently innovative raises the question about the role of the regulator in managing the sandbox and generates uncertainty. Strictly speaking, FinTech firms relying on the ‘fintech licensing exemption’ may find themselves in a less advantageous position compared to an authorisation sandbox: after all, firms that have passed the vetting process (in the latter model) do not face the risk of exclusion from the sandbox on similar grounds. In contrast, FinTech firms using ASIC’s ‘fintech licensing exemption’ need to bear the risk that their sandbox privileges may be withdrawn at any time due to failure to comply with parameters (namely, insufficient innovativeness or inadequate use of technology) that are – surprisingly – not even listed among the eligibility criteria.

For a comparison between the Swiss regulatory sandbox and ASIC’s ‘fintech licensing exemption’ refer to Image 5.

Image 5. Regulatory sandboxes in Australia and Switzerland: side-by-side comparison

	Swiss ‘Sandbox’	**Australia’s ASIC ‘fintech licensing exemption’**
Launch date	August 2017	December 2016
Maximum duration	Unlimited	12 months

[46] Ibid s 257.55.

Extension	Not applicable	None
Restrictions	Deposits from the public up to CHF 1 million Deposits received cannot earn interest Deposits received cannot be invested	<u>Entity</u> No existing AFS/credit license No ban on financial services/credit activities <u>Subject matter</u> Financial services: only (i) providing advice, (ii) dealing in or (iii) distributing existing financial products (direct issue of products prohibited) Credit activities: only (i) acting as intermediary or (ii) providing credit assistance in relation to certain credit contracts (not providing credit directly) <u>Scope</u> Up to 100 retail clients Total (cumulative) client exposure: up to AUD 5 million Retail client exposure: up to AUD 10,000 Credit contracts: between AUD 2,001 and AUD 25,000 General insurance: up to AUD 50,000 insured
Ongoing obligations	Disclosure to depositors, prior to taking deposits, that: - the deposit-taker is not supervised by FINMA - deposits are not covered by deposit protection scheme	Disclosure to clients: - notice that service provider does not hold a licence; - notice that service provides is being tested in the sandbox; and - notice that some of the normal client protections will not apply. Additional product-specific disclosures Have adequate compensation arrangements (such as professional indemnity insurance – AUD 1 million per claim) Have adequate dispute resolution processes in place (both internal and external)
Prior notice to regulator	N/A	Required
Regulatory flexibility	No banking licence	No (AFS/credit) licence

Early termination by the regulator	N/A	Misconduct while relying the exemption Failure to meet conditions Previous misconduct ASIC determines business is not innovative and/or does not use technology

2.1.6. Evolution of sandbox regimes

Nothing remains static forever. Regulatory sandboxes are no exception to this simple rule, as regulators around the world are looking for ways to enhance the efficiency of existing sandbox frameworks. This is done to tackle some of the problems limiting the effectiveness of regulatory sandboxes.

First, many sandboxes have failed to attract a high number of participants (see Image 6). Although not all of the underlying reasons are symptoms of a non-FinTech friendly regulatory framework, insufficient interest in a regulatory sandbox generally signals a need for deeper analysis of the existing sandbox regime and options for its enhancement.

Image 6. Regulatory sandboxes with few participants

Swiss 'Sandbox'	Australia's ASIC 'fintech licensing exemption'	MAS 'FinTech Regulatory Sandbox'
No data available	7 (as of October 2019)	8 (as of November 2019)

Second, non-authorisation sandboxes – which do not involve application review and *ex ante* assessment of proposed FinTech solutions – are significantly less interactive compared to the authorisation model, in which a closer dialogue with the regulator is maintained throughout the sandbox term. This substantially reduces the scope for knowledge exchange between regulators and FinTech firms and thus loses one of the key potential benefits of a regulatory sandbox.

Third, sandbox testing can get rather complicated when a new product or service is covered by the mandate of more than one regulator, leading to simultaneous (or back-to-back) applications to multiple sandboxes.

Fourth, analysis of applications in authorisation sandboxes is a costly and resource-intensive task for regulators due to a variety of candidate profiles and proposed innovations. Even though regulators aim to streamline the vetting process by using different tools, such as pre-set application templates, each sandbox project remains unique and may require review by staff with different subject matter expertise within the same regulator (or even referral to another regulator). Unfortunately, this issue is often identified *ex post*, after the launch of a sandbox, and is a common cause of misaligned regulatory expectations: almost two thirds of regulators covered by the recent sandbox study admitted that they 'had significantly underestimated the resources required to develop and operate their sandboxes'.[47] The same study acknowledges that around a quarter of regulators launched sandboxes without even assessing whether there was sufficient demand.[48] In other words, many regulatory sandboxes fail to pass a reality check as more and more regulators are trying to become (or remain) internationally competitive by using sandboxes as a means of sending a pro-innovation signal to the industry.

All four jurisdictions have engaged in the process of sandbox review and modernisation, albeit in different forms and at different stages.

(a) Hong Kong

In September 2017 – one year after the launch of the first regulatory sandbox in Hong Kong – the Chief Executive of the HKMA announced the development of an 'Enhanced Fintech Supervisory Sandbox 2.0' as part of a broader package of regulatory initiatives in the area of 'smart banking'.[49] The upgraded regulatory sandbox, which has been labelled by the regulator as 'FSS 2.0', is now in operation and offers the following new functionality:

- a pre-application consultation service (known as 'Fintech Supervisory Chatroom') to provide feedback to eligible FinTech innovators at an early stage of their projects;

[47] *Early Lessons on Regulatory Innovations* (n 26) 31.

[48] See n 27.

[49] Hong Kong Monetary Authority, 'A New Era of Smart Banking', *Press Releases* (Web Page, 29 September 2017) <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2017/09/20170929-3/>.

- an opportunity for tech firms to approach the regulator directly via the 'FinTech Supervisory Chatroom' without first going through a bank; and

- a single point of entry for innovators intending to test 'cross-sector fintech products', namely solutions covered by the mandate of the Securities and Futures Commission and (or) the Insurance Authority.[50]

Image 7. HKMA Fintech Supervisory Sandbox 2.0

HKMA FSS		**HKMA FSS 2.0 'upgrade'**
No pre-application consultation	→	Fintech Supervisory Chatroom (see section 2.2)
Tech firms gain access to the regulator via authorised institutions	→	Direct feedback for tech firms through the Chatroom
Individual applications to sectoral sandboxes (HKMA, SFC, IA)	→	Single point of entry for cross-sector FinTech products

Overall, the HKMA has taken a conservative approach to the revision of its regulatory sandbox, without any radical changes to the scope or eligibility parameters. After all, there appears to be no shortage of projects within the sandbox (with 119 new products tested by the end of February 2020), and it is clear that the regulator does not pursue the objective to increase the numbers at all costs, opting instead for a more incremental modernisation.

Establishment of a 'Fintech Supervisory Chatroom', while useful, does not change the parameters of the sandbox itself. Instead, it makes the HKMA more accessible to innovators by introducing new communication channels – which constitutes a different form of FinTech facilitation (analysed in section 2.2 below) disguised in sandbox terminology. The same can be said about granting tech firms direct access to regulatory consultations: while they can now converse with the HKMA, the eligibility requirements remain the same and do not permit non-licensed entities to enter the sandbox without partnering with an authorised

[50] Hong Kong Monetary Authority, 'Fintech Supervisory Sandbox (FSS)', Fintech (Web Page) <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech/fintech-supervisory-sandbox-fss/>.

institution. The issues concerning the value proposition of this model (see section 2.1.3 above) do not disappear.

In contrast, creation of a single point of entry has been a valuable substantive revision to the mode of operation of Hong Kong's regulatory sandboxes in general. This change was a welcome logical step after the SFC and IA rolled out their own sandbox initiatives back in 2017. At the time of writing, similar initiatives have been explored in other jurisdictions: in May 2019, the Financial Conduct Authority of the United Kingdom launched a call for input to examine the feasibility of setting up a 'cross-sector sandbox'. It is worth noting, however, that, although both the HKMA and the FCA mention a 'single-point-of-entry' approach to cross-sector innovation, the scope of these initiatives differs substantially. The three linked regulatory sandboxes in Hong Kong operate in the financial services space. In contrast, the UK proposal aims to connect a whole array of regulators operating outside finance, including the Civil Aviation Authority (CAA), Gambling Commission (GC), Information Commissioner's Office (ICO), Ofcom, Ofgem, Ofwat, and Prudential Regulation Authority (PRA).[51]

<u>(b) Singapore</u>

The Monetary Authority of Singapore took a different approach to modernising its regulatory sandbox. Instead of reconfiguring the existing mechanism, the MAS established a new concept of 'Sandbox Express' to complement, rather than replace, the current sandbox model.

The idea was first floated in a public consultation in November 2018[52] and was subsequently implemented in August 2019. The main difference between the regular sandbox and 'Sandbox Express' stems from their scope: the former is open for all financial innovators generally, whereas the latter is targeting a specific subset of FinTech firms matching a pre-defined profile – namely firms that intend to conduct certain activities regulated by MAS. Initially, Sandbox Express covers the following activities: (a) carrying on business as an

[51] Financial Conduct Authority, *Call for Input: Cross-Sector Sandbox* (May 2019) 3 n 2 <https://www.fca.org.uk/publication/call-for-input/call-for-input-cross-sector-sandbox.pdf>.

[52] Monetary Authority of Singapore, *Sandbox Express Consultation Paper* (P015 – 2018, 14 November 2018) <https://www.mas.gov.sg/-/media/MAS/News-and-Publications/Consultation-Papers/2018-Nov-Sandbox-Express/Consultation-Paper-on-Sandbox-Express.pdf>.

insurance broker, (b) establishing or operating an organised market, and (c) remittance business.

The ‘Sandbox Express’ is positioned by the regulator as a more efficient alternative to the regular sandbox that is capable of reducing time to market for innovative financial products or services.

First, it offers a substantial reduction in application processing times: the MAS is expected to complete assessment within 21 *calendar* days,[53] in contrast to the standard multi-stage process, whereby the regulator initially takes 21 *working* days to assess the ‘potential suitability’ of the applicant and then goes on to ‘fully assess’ the application on a case-by-case basis (without any time limit for the final stage of assessment).[54] Complex applications for the ‘Sandbox Express’ that cannot be assessed within 21 calendar days are treated as applications under the regular sandbox.[55] Simultaneous applications under both sandboxes are impossible, and prospective participants cannot abuse the shorter time frame of the ‘Sandbox Express’ due to a three-month cooling-off period.[56]

Second, the new sandbox comes with reduced eligibility requirements. The scope of assessment by the MAS is limited to just three criteria:

- whether the proposed product or service is sufficiently innovative;
- whether the proposed solution is useful (ie addresses the relevant problem statements and brings new benefits); and
- whether the applicant’s key stakeholders (ie persons with substantial shareholdings in the applicant, chief executive officers, directors and other relevant persons, as deemed necessary) are fit and proper.[57]

[53] Monetary Authority of Singapore, *Sandbox Express Guidelines* (August 2019) s 2.2(d) <https://www.mas.gov.sg/-/media/MAS/Smart-Financial-Centre/Sandbox-Express/Sandbox-Express-Guidelines-7-Aug.pdf?la=en&hash=E7917E9851BBE097AB7E889D64591FA340CC483C> (‘*MAS Sandbox Express Guidelines*’).

[54] *MAS Sandbox Guidelines* (n 31) s 8.2.

[55] *MAS Sandbox Express Guidelines* (n 53) s 2.2(d).

[56] Ibid s 2.3.

[57] Ibid s 2.2(c).

Third, the 'Sandbox Express' offers standardised terms for all participants, such as maximum duration, disclosure obligations and reporting duties.[58] See Image 8.

Image 8. Comparison of the MAS FinTech Regulatory Sandbox and Sandbox Express

MAS FinTech Regulatory Sandbox		**MAS Sandbox Express**
Single process for all applicants	→	New process for applicants planning certain activities: - insurance brokerage - establishing/operating an organised market - remittance business New restrictions: - separate applications by the same applicant not considered - 3-month cooling off period for rejected applicants
Customised sandbox conditions designed on a case-by-case basis	→	Standardised sandbox conditions for selected activities - maximum duration - detailed disclosure obligations - reporting obligations (progress reports every 2 months and final report)
Standard eligibility requirements: - Novelty - Useful innovation - Localisation (benefit to the local financial services sector) - Readiness for testing	→	Reduced eligibility requirements: - Novelty - Useful innovation - Fit and proper test for stakeholders

[58] Ibid s 3.

Standard application evaluation: No fixed time period (preliminary assessment within 21 working days)		Fast-track application evaluation: 21 ~~working~~ days (applications deemed too complex for fast-track are considered within the standard time frame)

According to the implementing guidelines, the new 'Sandbox Express' is intended only for experiments where the relevant risks are 'low and well understood'.[59] The MAS has opted for a phased approach to designing its new sandbox: while starting with only a handful of eligible activities, the regulator 'will continue to review whether appropriate constructs could be established to facilitate meaningful experiments for other activities'.[60] The initial set-up includes three sandbox 'templates' covering (i) insurance brokerage business, (ii) operating an organised market and (iii) remittance business. See Image 9.

Image 9. MAS Sandbox Express restrictions and exemptions

	Insurance brokerage	**Organised markets**	**Remittance**
Maximum duration	9 months	9 months	9 months
Restrictions	Not more than 1,000 insurance policies can be purchased by one or more customers of the applicant No right to accept or handle customer money Insurance contracts must be negotiated with licensed insurers	Capped volume of transactions: - SGD 4 billion of securities and CIS units - 4 million derivative contracts Customers limited to institutional and accredited investors (no individuals) No right to hold customer money No right to participate in own organised market or transact as principal	Aggregate amount of moneys not received by intended beneficiaries not to exceed SGD100,000 Only fit and proper stakeholders (substantial shareholders, CEO and directors)
Additional obligations	N/A	Additional disclosures on: - Operation of custody, clearing and settlement	Sandbox Express application must be accompanied by an application for a remittance licence under the Money-

[59] Ibid s 2.2(a).

[60] Ibid s 1.5.

		- Management of outstanding derivatives upon termination of business Disclosures to clients of applicant's customers accessing the organised market indirectly through such customers	Changing and Remittance Businesses Act Internal controls 'to mitigate all risks' No activity 'against the interest of the public, or a section of the public'
Exemptions	Waiver of registration as insurance broker Waiver of restriction on the use of words 'insurance broking'	Waiver of recognition requirement as RMO (but no right to hold itself out as RMO) Waiver in respect of regulated dealing activity incidental to the operation of organised market	Applicant is granted a remittance licence Waiver of security deposit requirements (SGD 100,000 for each place of business) Waiver of license fees (during sandbox period)
Exit rules	Application for registration, or notification on termination of activities, 6 weeks before the end of sandbox period	Application for recognition as RMO, or notification on termination of activities, 6 weeks before the end of sandbox period	Application for licence, or notification on termination of activities, 4 weeks before the end of sandbox period

It is still too early to assess the effectiveness of the 'Sandbox Express' due to its very recent launch and insufficient empirical data.[61] However, this new concept adopted by the MAS is noteworthy for a number of reasons.

Structurally, it can be seen as an amalgamation of the authorisation and non-authorisation sandbox models that aims to combine the benefits of both. On the one hand, it does not eliminate the application process, thereby ensuring that the regulator is familiar with the firms admitted into the sandbox. On the other hand, retention of the regular sandbox alongside the 'Sandbox Express' provides the MAS with sufficient flexibility to tackle innovation not covered by the three models of 'Sandbox Express' as well as applications that are, for whatever reason, not assessed in time – a useful fallback provision.

The 'Sandbox Express' shares some similarity with sandboxes using the cohort-based application procedure (as implemented in Abu Dhabi and the United Kingdom): both are designed to make the application process more manageable. However, the underlying

[61] At the time of writing, only two firms were accepted into the 'Sandbox Express'.

mechanics remain quite different. Cohort-based models stagger the application process by limiting the numbers of entities concurrently admitted into the sandbox. In contrast, the 'Sandbox Express' accepts, on a rolling basis, participants matching a pre-determined set of parameters.

Pre-determined sandbox parameters have gained prominence recently, as an instrument for steering innovation in sectors deemed particularly beneficial for the economy – as these initiatives open additional pathways into the regulatory sandbox. One of the newest examples comes from the UK, where the FCA launched the first pilot of its 'FinTech Challenge' programme in 2019, focusing on innovations that benefit the UK's transition to a greener economy (known as the 'Green FinTech Challenge').[62] While admission into the regulatory sandbox is only one of the possible support options available to successful applicants in this UK initiative, it remains the natural choice for innovative solutions that require *on-market* testing with real clients and may have been unsuccessful in applying to the regular sandbox – since the selection process effectively generates a new sandbox entry point (at the time of writing two firms were admitted into the sandbox as part of the pilot 'FinTech Challenge').[63]

(c) Switzerland

Among the four jurisdictions covered in this report, Switzerland offers perhaps the least radical approach to sandbox modernisation. According to the FINMA, amendments to the Banking Ordinance (Article 6(2)(b)) and the corresponding revisions of the Circular 2008/3 make possible investing and paying interest on deposits received when relying on the sandbox exemption, but at the same time prohibit the so-called interest rate differential business, which remains the privilege of the banks.[64] See Image 10.

Image 10. Swiss regulatory sandbox (2019 revision)

Swiss sandbox (August 2017)		Swiss sandbox (April 2019)
Deposits received cannot be invested	→	Deposits received can be invested

[62] See Financial Conduct Authority, 'Green FinTech Challenge – Successful Applicants', *FCA Innovate* (Web Page, 29 April 2019) <https://www.fca.org.uk/firms/fca-innovate/fintech-challenge>.

[63] Ibid.

[64] FINMA, *Circular 2008/3 "Public Deposits with Nonbanks" – Partial Revision* (15 March 2019) <https://www.finma.ch/en/~/media/finma/dokumente/dokumentencenter/anhoerungen/laufende-anhoerungen/20190315-fintech-bewilligung/rs08_03_kp_anh20190315_de.pdf?la=en>.

Payment of interest is prohibited		Payment of interest permitted But no right to engage in interest margin business

Although the sandbox has not undergone a substantial overhaul, Switzerland's recent introduction of a new licence type (known as the 'FinTech licence')[65] raises an important question of sandbox taxonomy. According to the FINMA, only the licensing waiver for deposits up to CHF 1,000,000 (see section 2.1.4 above) is referred to as the 'sandbox' – a bespoke FinTech licence is not. But are these two initiatives really that different?

Both measures permit innovators to accept public deposits to facilitate their business model. Neither appears to involve a test of innovativeness as a pre-requisite: the licensing waiver does not require any approval whatsoever, while the FinTech licence requirements do not mention an assessment of the level of novelty of the proposed solution (although FINMA retains a great deal of discretion and may conduct such analysis by requesting additional information from the applicant). In each case, deposits from customers are not covered by the Swiss deposit protection scheme, and various disclosures need to be made to clients. The different threshold amounts (CHF 1,000,000 for the licensing waiver and CHF 100,000,000[66] for the FinTech licence) help differentiate the scope of the two measures, while the different regulatory designations (a 'sandbox' and a 'FinTech licence',[67] respectively) are not determinative either.

Overall, the differences do not affect the core functions of the two initiatives: both are programmes allowing FinTech firms to test a new product or service in an actual (but limited) market environment, without necessarily incurring all of the existing regulatory restrictions. It follows that both measures meet the definition of a 'regulatory sandbox' in this report.[68]

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[65] See FINMA, 'FinTech Licence', *Authorisation* (Web Page) <https://www.finma.ch/en/authorisation/fintech/fintech-bewilligung/>.

[66] See s 1*b* of the Swiss Federal Act on Banks and Savings Banks.

[67] See FINMA, *Guidelines for FinTech Licence Applications Pursuant to Article 1b of the Banking Act* (03 December 2018) <https://www.finma.ch/en/~/media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/w_bewilligungfintech_20181203_de.pdf?la=en>.

[68] See the definition in section 2.1 above.

Different access modes merely represent the two sandbox models. The licensing exemption does not require any approval and is, therefore, a form of non-authorisation sandbox. The FinTech licence involves an *ex ante* assessment by the regulator, as other authorisation sandboxes do. The fact that the applicant is issued a licence in the latter case is immaterial: this licence comes with fewer supervisory requirements compared to the 'full' banking licence, and we have already seen in this report examples of regulatory sandboxes in which regulators have chosen to issue restricted authorisations instead of waivers.[69]

The above observations signal the same trend that was observed in Singapore, namely a convergence of authorisation and non-authorisation sandbox models. This time, however, this amalgamation has taken a different form: instead of combining different sandbox models in a single 'mixed' sandbox format, Switzerland adds an authorisation sandbox (a new licence category) on top of the existing non-authorisation instrument (a licensing waiver for small value deposits).

(d) Australia

While jurisdictions like Singapore and Switzerland are gradually transitioning to a combination of the two (authorisation and non-authorisation) sandbox models, Australia's sandbox arsenal already includes the elements of both since December 2016 (see section 2.1.5). Nonetheless, not all parts of Australia's regulatory sandbox have achieved the expected results. In particular, the low number of firms relying on ASIC's 'fintech licensing exemption' triggered a formal revision procedure less than a year after launch: a public consultation on a modernised sandbox regime (known as the 'enhanced regulatory sandbox') was carried out in October – December 2017.[70]

Interestingly, little has changed by the time of writing in terms of sandbox use cases – although the revision of sandbox regulations appears within reach. On the one hand, ASIC's 'fintech licensing exemption' has been used by just seven firms after almost three years of operation. On the other hand, the 'enhanced regulatory sandbox' implementing legislation

[69] An example would be the 'Sandbox Express' for remittance service providers, whereby eligible innovators are granted a provisional remittance licence. See Image 9.

[70] See The Treasury, 'Enhanced Regulatory Sandbox', *Consultations* (Web Page, 23 October 2017 – 01 December 2017) <https://treasury.gov.au/consultation/c2017-t230052>.

has been passed in early 2020,[71] even though the corresponding regulations have not yet been adopted .

The concept of ‘enhanced regulatory sandbox’, and the nature of proposed changes suggest that the main perceived deficiency of the existing sandbox regime in Australia lies in its many restrictions on the scope of eligible innovations. For example, under the current framework, FinTech firms are not permitted to issue their own products and instead may only (i) provide advice, distribute, or deal in, existing financial products, or (ii) act as intermediary or provide credit assistance in relation to credit contracts.

In the light of the existing restrictions, the aim of the modifications to ASIC’s licensing exemption is unambiguous. The proposed changes are meant to make the existing regime more *attractive* for FinTech firms (see Image 11):

> The enhanced regulatory sandbox allows *more businesses* to test a *wider range* of new financial and credit products and services without a licence, for a *longer time*.[72]

Image 11. Australia’s enhanced regulatory sandbox

ASIC ‘fintech licensing exemption’		**Proposed ‘enhanced regulatory sandbox’**
Maximum duration 12 months	→	Maximum duration 24 months
Multiple use not envisaged	→	Exemption can be used multiple times for different products and services
Subject matter limited to: Financial services: only (i) providing advice, (ii) dealing in or (iii) distributing existing financial products (direct issue of products prohibited) Credit activities: only (i) acting as intermediary or (ii) providing credit assistance in relation to certain credit	→	New types of activities covered Issuing, varying or disposing of a non-cash payment facility Providing crowd-funding services Providing credit (new restriction: duration only up to 4 years)

[71] See the Treasury Laws Amendment (2018 Measures No. 2) Act 2020.

[72] *Treasury Laws Amendment (2017 Measures No. #) Bill 2017* (Exposure Draft Explanatory Memorandum) s 1.3 <https://treasury.gov.au/sites/default/files/2019-03/c2017-t230052-EXM-2.pdf> (‘*Enhanced Sandbox Bill 2017*’) (emphasis added).

contracts (not providing credit directly)		
Products covered limited to: Australian securities Instruments issued by the Australian Government Simple managed investment schemes Deposit products Certain general insurance products ADI-issued payment products	→	Additional products (covered by advice and dealing provisions): Securities listed outside Australia Life risk insurance products (up to AUD 300,000 cover) Superannuation products (up to AUD 40,000 investment)
Most client restrictions apply to wholesale clients	→	For wholesale clients, services can relate to any products, except (i) derivatives and (ii) margin lending facilities

Interestingly (but also somewhat disturbingly), the documentation relating to the 'enhanced regulatory sandbox' does not appear to be fully aligned with the existing terminology – in particular, with ASIC's broad definition of the term 'regulatory sandbox' (which, as noted previously, comprises three elements: (i) existing flexibility in the form of class waivers or statutory exemptions, (ii) the 'fintech licensing exemption' and (iii) tailored individual licensing dispensations issued by ASIC on a case-by-case basis).[73] In contrast, the explanatory memorandum narrows the sandbox concept to the 'fintech licensing exemption' alone:

> The ASIC regulatory sandbox is comprised of ASIC's FinTech licensing exemptions provided under ASIC Corporations (Concept Validation Licensing Exemption) Instrument 2016/1175 and ASIC Credit (Concept Validation Licensing Exemption) Instrument 2016/1176.[74]

[73] See section 2.1.5.

[74] *Enhanced Sandbox Bill 2017* (n 72) s 1.2.

Of course, one may argue that statutory exemptions included in the first group are not, strictly speaking, issued by ASIC, and therefore cannot be part of an '*ASIC* regulatory sandbox' *ipso facto*. While this is true, the first group of measures in Australia's regulatory sandbox (as defined by the regulator)[75] is not limited to statutory exemptions – it also includes class waivers issued by ASIC in the exercise of its 'relief powers'.[76] Therefore, all three parts of Australia's regulatory sandbox include measures adopted by ASIC itself.

Notably, ASIC's response to the public consultation also interpreted 'sandbox' narrowly:

> ASIC's regulatory sandbox issued in December 2016 is a class waiver from licensing requirements (the 'ASIC sandbox licensing exemption').[77]

In this case, the discrepancy was probably intentional. The words 'issued in December 2016' could be read as a reference only to the specific sub-category of ASIC's sandbox launched during that period (rather than the entire sandbox).

These issues may sound like technicalities, but in practice they may narrow the scope of discussion about the efficiency of Australia's sandbox regime to the 'fintech licensing exemption' alone, isolating just one tool in the broader sandbox arsenal. An isolated analysis of just one element of the existing sandbox may lead to short-sighted policy decisions: policymakers may end up trying to solve a problem that does not really exist (as it may be already addressed by other regulatory initiatives). This report argues that more clarity and consistency in the interpretation of Australia's regulatory sandbox framework would be useful, particularly in discussions concerning modification of the existing sandbox format.

This said, the same public consultation also raises serious questions about the level of regulator's involvement in the operation of the regulatory sandbox, both *ex ante* and *ex post*. The proposed changes envisage ASIC playing a more active role overall:

> The amendment also enables the regulations to empower ASIC to make decisions regarding *how the exemption starts* and ceases to apply. This provides that the regulations

[75] See *ASIC Regulatory Guide 257* (n 38) s 257.22.

[76] As defined in ibid s 257.33. See also ibid s 257.35.

[77] Australian Securities and Investments Commission, *Enhanced Regulatory Sandbox Proposal – ASIC Submission* (10 November 2017) 1 <https://treasury.gov.au/sites/default/files/2019-03/c2017-t230052-ASIC.pdf> ('*ASIC Sandbox Submission*').

> can enable ASIC to *monitor access* to the regime to prevent misuse of the licencing exemption and provide for effective arrangements to allow providers to transition out of the regulatory sandbox and become licensed.[78]

If these new powers translate into direct involvement of the regulator in monitoring 'access to the regime', the change will mark a clear departure from the current non-authorisation model, by turning the 'fintech licensing exemption' into an application-based system. To properly determine the nature of the 'enhanced' sandbox, three simple questions will require three clear answers:

1. Will ASIC conduct *ex ante* review of applications?
2. Will ASIC monitor the participants *ex post*?
3. Does ASIC have the capacity to do both?

Back in 2017, in response to the public consultation, ASIC made it clear that direct supervision of unlicensed sandbox entities was neither desirable, nor realistic:

> These will be unlicensed entities and as such ASIC will not monitor or supervise them. This is consistent with our approach to the ASIC regulatory sandbox. While ASIC does monitor and supervise existing licensed businesses this is supported by a broad regulatory toolkit and framework applicable to licensed financial services. We *do not have this capacity or capability* for unlicensed entities.[79]

In contrast, the draft regulations establishing the 'enhanced regulatory sandbox' suggest that the regulator should be playing a more active role in the process, by utilising new powers to terminate the licensing exemption by written notice to the relevant firm as a sanction for a whole range of violations, from breaching the applicable conditions to failing to act fairly, efficiently or honestly.[80] Interestingly, there is no mention of early termination on grounds of

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[78] *Enhanced Sandbox Bill 2017* (n 72), ss 1.12, 1.17 (emphasis added).

[79] *ASIC Sandbox Submission* (n 77) 3.

[80] *Corporations (FinTech Sandbox Australian Financial Services Licence Exemption) Regulations 2017* (Exposure Draft, 2017) s 13 <https://treasury.gov.au/sites/default/files/2019-03/c2017-t230052-draft-reg-corp.pdf>; *National Consumer Credit Protection (FinTech Sandbox Australian Credit Licence Exemption) Regulations 2017* (Exposure Draft, 2017) s 11 <https://treasury.gov.au/sites/default/files/2019-03/c2017-t230052-draft-reg-nationalccp.pdf>.

insufficient novelty or failure to use the technology (as seen in the current sandbox framework).[81]

It is safe to say that this new authority to monitor and terminate access to the sandbox was not welcomed by ASIC in its response to the consultation, which stated:

> Given the policy approach that the entities in the sandbox be unlicensed and the approach to supervision set out above we envisage this power will not be commonly used.[82]

In the end, the regulator concluded that 'it may be worth considering removal of the power' altogether, due to (i) the large potential number of firms relying on the licensing exemption and (ii) the fact that 'it might confuse consumers by suggesting that ASIC supervises these businesses'.[83] The first of these two issues has already been discussed in this subsection in the context of ASIC's assessment of own capacity and capability to monitor unlicensed firms – and thus it is now worth focusing on the specific implications of misaligned consumer expectations.

Regulators internationally generally aim to ensure that admission into the sandbox is not interpreted as endorsement of a particular product or service, generally by requesting specific disclosures from FinTech firms to their clients.[84] While an assessment of efficiency of such disclosures would be outside the scope of this report, there is still a major difference between consumer expectations from FinTech firms participating in authorisation and non-authorisation sandboxes. At the very least, consumers expect that an entity admitted into the former will be subject to (i) some form of preliminary screening and (ii) ongoing monitoring and feedback loop with the regulator. Neither of those expectations apply to a non-authorisation sandbox (eg in the Swiss regulatory sandbox format – see section 2.1.4).

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[81] See *ASIC Regulatory Guide 257* (n 38) s 257.55.

[82] *ASIC Sandbox Submission* (n 77) 3.

[83] Ibid.

[84] For example, in Arizona, a sandbox participant must disclose to consumers that the state 'does not endorse or recommend the innovation'. See *An Act Amending Title 18, Arizona Revised Statutes, by Adding Chapter 6; Amending Section 41-1506, Arizona Revised Statutes; Relating to Real Estate Products and Services* (2019) s 18-606 <https://legiscan.com/AZ/text/HB2673/id/1972607>. A similar approach is sometimes taken in relation to other forms of FinTech facilitation, such as regulatory consultations: for example, ASIC in Australia permits eligible firms to mention that they have been assisted by the regulator, provided that such firms do 'not create an impression (either explicitly or implicitly) that [their] business or services are in any way endorsed or approved by ASIC'. See question 7 in Australian Securities and Investments Commission, 'Innovation Hub', *For Business* (Web Page) <https://asic.gov.au/for-business/innovation-hub/>.

In the context of ASIC's 'fintech licensing exemption', the situation is quite different. Although the regulator has *no express duty* to monitor eligible FinTech firms, it nonetheless retains powers to terminate sandbox privileges, even in the current iteration of sandbox rules (see section 2.1.5). Since the regulator is vested with the necessary authority to prevent sandbox abuse, consumers are reasonably likely to (and in fact should) *expect* such regulator to actively use this authority before problems emerge. Failure to do so will be (just as likely) attributed to the regulator.

Coexistence of these monitoring powers, on the one hand, and the absence of 'capacity or capability' (in ASIC's own words) to monitor unlicensed entities, on the other, puts the regulator in an unenviable position. Indeed, how would ASIC characterise its own standard of engagement with firms relying on the 'fintech licensing exemption'? It would no doubt be inappropriate to admit that the regulator has insufficient resources to control the risks and protect the consumers, or, worse yet, voluntarily chooses not to monitor unlicensed businesses when it is authorised to do so in the first place. Furthermore, if the sandbox reform proceeds according to the original blueprints from 2017, ASIC will soon have even more of those monitoring powers – leading, most likely, to increased consumer expectation that those powers will be used to prevent sandbox abuse. But if that is the case, would it not make more sense to switch to a proper authorisation sandbox based on full scale vetting of applicants? At least that way, consumer expectations have a better chance of aligning with the regulator's capacity.

Finally, as noted previously in this subsection, any revision of the 'fintech licensing exemption' needs to consider the entire arsenal of tools in Australia's regulatory sandbox. After all, the low number of firms making use of the licensing exemption may be attributed to higher relative efficiency of other sandbox mechanisms adopted by ASIC, such as individual relief in the form of tailored licensing exemptions. Simply put, if another arm of the sandbox already solves the problem, why look for a different solution?

It remains to be seen what kind of sandbox design will be implemented during the upcoming revision. It is not beyond the realm of possibility that in the end the existing sandbox model will change, and instead of keeping a mix of authorisation and non-authorisation tools in its sandbox, Australia will transition to a model whereby the benefits of both are instead integrated into a single measure.

2.2. Regulatory consultations

Regulatory sandboxes frequently coexist with another form of FinTech promotion – regulatory consultations. Whereas sandboxes assist innovators by creating a restricted regulatory framework for on-market experimentation, the main function of a regulatory consultation is not to test a specific innovation, but to facilitate contact and information exchange between regulators and FinTech firms, mainly to discuss regulatory issues and seek clarification on the conformity of new business models with the existing legal framework (see Image 12).

Image 12. Regulatory sandboxes and regulatory consultations

Regulatory sandboxes	**Regulatory consultations**
Key function: permit limited on-market testing	Key function: respond to queries
Controlled regulatory environment to test innovative solutions with the support of a regulator	Institutional arrangement to discuss issues and seek clarification on the conformity of business models with the regulatory framework
Tailored supervision, often requires legal changes	Generally, no legal change required
Lower number of eligible FinTech firms	Higher number of eligible FinTech firms

Regulatory consultations can be extremely diverse in terms of design and come in different forms, such as:

- office hours for meetings or teleconferences with regulators;
- dedicated phone line;
- dedicated website;
- case officers providing direct support to FinTech firms.

In addition, in the absence of a uniform taxonomy or naming convention, regulatory consultations bear different designations, such as 'innovation hubs',[85] 'innovation offices',[86] 'chatrooms'[87] and so on. These names are mostly used in jurisdictions where the relevant forms of regulatory consultation are actively promoted as a standalone tool for FinTech facilitation – and may cause some confusion during comparison of regulatory consultations in different countries.

First, in some cases, sandboxes are not distinguished from regulatory consultations. For example, the HKMA treats its Fintech Supervisory Chatroom (a communication channel including emails, video conferences and face-to-face meetings with the regulator) as an element of its revised 'Fintech Supervisory Sandbox 2.0'.[88] In reality, the two measures remain distinct, not only in scope, but also in terms of eligible participants: in contrast to the HKMA sandbox, unlicensed FinTech firms do not need to partner with an authorised institution to seek feedback from the regulator through its Chatroom.[89]

Second, it may be difficult to distinguish regulatory consultations from industry-led FinTech accelerators on the basis of their name alone – since both are often referred to as 'innovation hubs'.[90]

Third, some jurisdictions have chosen not to emphasise their existing forms of regulatory consultation as some kind of regulatory innovation. For example, in Singapore the MAS conducts an open door policy and welcomes queries from FinTech firms as part of its day to day operations but does not present this as a special regulatory feature.[91]

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[85] See ASIC, 'Innovation Hub', *For Business* (Web Page) <https://asic.gov.au/for-business/innovation-hub/>.

[86] *Early Lessons on Regulatory Innovations* (n 25) 19.

[87] Hong Kong Monetary Authority, 'Fintech Supervisory Chatroom', *Press Releases* (Web Page, 28 November 2017) <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2017/11/20171128-4/>.

[88] Hong Kong Monetary Authority, 'Fintech Supervisory Sandbox (FSS)', Fintech (Web Page) <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech/fintech-supervisory-sandbox-fss/>.

[89] Ibid.

[90] See, eg, 'Accenture Innovation Hub Singapore', *Accenture* (Web Page) <https://www.accenture.com/sg-en/service-accenture-innovation-hub-resources-singapore>.

[91] According to the regulator, MAS officers adhere to the Singapore Public Service Division service commitment to respond to calls, feedback and queries in a timely manner, which envisages (i) answering calls within 30 seconds, (ii) responding to voice mails by the next working day, (iii) replying to emails and online feedback within 3-5 days (or up to 3 weeks if more time is needed) and (iv) replying to letters and faxes within

Image 13. Forms of regulatory consultations in the four jurisdictions covered by the study

Hong Kong	**Singapore**	**Switzerland**	**Australia**
In 2018, the HKMA received 220 requests for access to the Fintech Supervisory Chatroom[92]	In 2018, MAS provided guidance to 140 FinTech firms and individuals[93]	In 2018, FINMA received over 800 FinTech enquiries[94]	In 2017-2018, ASIC Innovation Hub provided Informal assistance to 105 start-up firms[95]
HKMA Fintech Supervisory Chatroom: • dedicated email (chatroom@hkma.gov.hk) (*response time 7 working days*) • video conferences and face-to-face meetings (*generally between 11am and noon, reservation on first come, first served basis, request form*)	FinTech and Innovation Group:[96] • Payments FinTech Office • FinTech Infrastructure Office • FinTech Ecosystem Office • AI Development Office	Dedicated 'FinTech Desk' Dedicated email (fintech@finma.ch)	ASIC Innovation Hub: • informal guidance about Australia's regulatory system (*up to 12 months after obtaining a licence*) • engagement with the industry via the Digital Finance Advisory Panel

10-14 days (or up to 1 month in complex cases). See Public Service Division, 'Our Service Commitment', *Who We Are* (Web Page) <https://www.psd.gov.sg/who-we-are/our-service-commitment>.

[92] Hong Kong Monetary Authority, *2018 Annual Report* (Report, 2019) 115 <https://www.hkma.gov.hk/media/eng/publication-and-research/annual-report/2018/AR2018E.pdf>.

[93] 'FinTech Ecosystem', Monetary Authority of Singapore (Web Page) <https://www.mas.gov.sg/annual_reports/annual20172018/fintech-ecosystem.html>. This number covers only sandbox-related queries. MAS has engaged more than 500 companies through its Financial Technology and Innovation Group. See *Early Lessons on Regulatory Innovations* (n 25) 23.

[94] FINMA, *Annual Report 2018* (Report) 23 <https://www.finma.ch/en/~/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/geschaeftsbericht/20190404-finma-jahresbericht-2018.pdf?la=en&hash=8C636082C293C91240502242EAD23E713EB6BCD8>.

[95] Australian Securities and Investments Commission, *Annual Report 2017-18* (Report, 2018) 88 <https://download.asic.gov.au/media/4922570/annual-report-2017-18-published-31-october-2018-full.pdf>.

[96] Monetary Authority of Singapore, *Monetary Authority of Singapore Organisation Chart* (Infographic, 01 October 2019) <https://www.mas.gov.sg/-/media/MAS/About-MAS/Structure-of-MAS/Organisation-Chart/MAS-Org-Chart-1-October-2019.pdf?la=en&hash=BED81786C94BB6DE19D5B05B6E73BC16E6D81F91>.

HKMA Fintech Facilitation Office SFC Fintech Contact Point and dedicated online 'FinTech Enquiry Form' Insurance Authority Insurtech Facilitation Team Dedicated email account at the Insurance Authority: insurtech@ia.org.hk	MAS aims to respond to queries from FinTech firms as follows: - phone calls: within 30 seconds - voice mails: by the next working day - emails and online feedback: within 3-5 days or up to 3 weeks if more time is needed - letters and faxes: 10-14 days or up to 1 month in complex cases Dedicated email (fintech_office@mas.gov.sg) Dedicated email for sandbox related matters (fintech_sandbox@mas.gov.sg)		• dedicated email (innovationhub@asic.gov.au)

Globally, the number of entities supported through regulatory sandboxes is substantially lower than the number of businesses assisted by various forms of regulatory consultations, sometimes an order of magnitude lower. While even the most active regulators in the area of FinTech facilitation have accepted several dozens of firms at best into their regulatory sandboxes,[97] the number of innovators assisted through regulatory consultations is measured in hundreds.[98] By way of example, by December 2018 ASIC had provided informal assistance to 347 entities through its Innovation Hub; in the same amount of time, just 6 entities had made use of the 'fintech licensing exemption'. Another attractive feature of regulatory consultations is economy of resources. Compared to sandboxes, they are easier to set up (at least initially) and 'are often able to start up quickly with a core staff of two or three, then expand based on need and demand'.[99]

[97] See, eg, Financial Conduct Authority, 'Regulatory Sandbox', Firms (Web Page, 23 October 2019) <https://www.fca.org.uk/firms/regulatory-sandbox; https://fintech.adgm.com/regulatory-laboratory/>.

[98] *Early Lessons on Regulatory Innovations* (n 25) 23.

[99] Ibid 25.

The much higher numbers of entities served by regulatory consultations and the higher overall cost of most regulatory sandboxes[100] may lead to the conclusion that the former are inherently more efficient, at least in terms of employee hours spent on each eligible firm. This is an important factor, since regulators need to consider alternative measures to support FinTech in the context of limited resources available to them, as noted in the recent UNSGSA report:

> A deeper concern, however, may be that regulators prioritize resource-intensive sandbox programs over more comprehensive innovation policies, market engagement strategies, or financial inclusion programs.[101]

It should be noted, however, that the attractiveness of regulatory consultations has led some commentators to argue that they are also ultimately more useful than sandboxes:

> Our thesis is that while sandboxes tend to attract the headlines and attention, the *real work* of promoting and facilitating innovation in financial services *tends to be done* in virtually all jurisdictions where it does occur *by some form of innovation hub*.[102]

While such comparison highlights the usefulness of regulatory consultations, it does not fully acknowledge the very different purpose of these two instruments of FinTech facilitation. In the real world, both sandboxes and regulatory consultations do 'the real work' – but this work is very different in terms of its complexity and level of regulatory engagement, which understandably translates into very different output numbers. At the end of the day, neither can functionally replace the other.

Although a competition between a sandbox and a regulatory consultation is misconceived (just as a competition between sandboxes and FinTech tax incentives discussed in section 2.3), the benefits of *combining* these two measures should not be underestimated. Such combination establishes a symbiotic regulatory relationship that is supported by the experiences of regulators covered by this study.

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[100] The vast majority of regulatory sandboxes follow the authorisation model and involve application screening and maintaining regular contact with admitted firms.

[101] *Early Lessons on Regulatory Innovations* (n 25) 30.

[102] Ross P Buckley, Douglas W Arner, Robin Veidt and Dirk A Zetzsche, 'Building FinTech Ecosystems: Regulatory Sandboxes, Innovation Hubs and Beyond' (University of New South Wales Law Research Series, 27 September 2019) 6 <https://ssrn.com/abstract=3455872> (emphasis added).

A regulatory consultation is an excellent screening tool capable of substantially reducing the workload on the regulator operating the sandbox, as well as upon a firm's exit from the sandbox. For this reason, in its sandbox regulatory guidance, ASIC calls for pro-active engagement with its Innovation Hub:

> We encourage you to seek informal assistance through our Innovation Hub before you begin testing your product or service, or applying for an AFS or credit licence. Our experience suggests that innovative businesses that seek informal assistance before lodging a licence application often have their licences granted in a far shorter timeframe than those who do not approach our Innovation Hub.'[103]

FINMA similarly notes that parties interested in obtaining the new FinTech licence (see section 2.1.6(c)) 'can also present their project to FINMA during a meeting prior to submission of the application.'[104]

In terms of added efficiency, ASIC has calculated in its response to the public consultation on the 'enhanced regulatory sandbox' that 'licence applicants that have received informal assistance from ASIC staff through the Innovation Hub have obtained licensing decisions in about 40% less … time than if they applied without first obtaining informal assistance'.[105]

2.3. Financial and organisational support

FinTech development strategies are not limited to direct regulatory assistance provided through sandboxes and consultations – they also include a broad range of top-down[106] initiatives offering organisational and financial support to innovators. With no attempt at being exhaustive, this report highlights a variety of such initiatives in the four jurisdictions covered. See Image 14.

Image 14. Examples of financial and organisational support offered to FinTech firms

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[103] *ASIC Regulatory Guide 257* (n 38) 257.77.

[104] See FINMA, 'FinTech Licence', *Authorisation* (Web Page) <https://www.finma.ch/en/authorisation/fintech/fintech-bewilligung/>.

[105] *ASIC Sandbox Submission* (n 77) 1.

[106] Analysis of FinTech development initiatives initiated or conducted by innovators themselves or by incumbent financial institutions is outside of scope of this report. Such initiatives are widely adopted in all four jurisdictions covered by this study and often include industry-run FinTech incubators, accelerators and FinTech promotion events. See, eg, the list of FinTech innovation labs established in Singapore in Monetary Authority of Singapore, 'FinTech Innovation Labs', *FinTech and Innovation* (Web Page) <https://www.mas.gov.sg/development/fintech/fintech-innovation-labs>.

Hong Kong	Singapore	Switzerland	Australia
Hong Kong FinTech Week (facilitated by InvestHK)	Singapore FinTech Festival (organised by the MAS)	Greater Zurich Area Ltd (GZA) facilitator	Stone & Chalk independent not-for-profit FinTech hub.
Cyberport funding programmes	80RR – coworking space for FinTech development (a joint effort between Hong Leong Holdings Ltd, the MAS and Singapore Fintech Association)		Early Stage Venture Capital Limited Partnerships (ESVCLP)
Innovation and Technology Fund (administered by the Innovation and Technology Commission)	Financial Sector Technology and Innovation Scheme (FSTI) (established and administered by the MAS)		Tax incentives for investors in qualifying early stage innovation company (ESIC)
HKMA-ASTRI Fintech Innovation Hub	Enterprise Singapore start-up grants		Accelerating Commercialisation Grant
Dedicated FinTech Team established by InvestHK	Dedicated FinTech & Innovation Group at MAS		
	FinTech Fast Track to expedite the application-to-grant process for FinTech patent application		

Regulators and governmental offices in Hong Kong and Singapore are organising high-profile annual FinTech events showcasing the local FinTech landscape and highlighting various regulatory initiatives: the Hong Kong FinTech Week facilitated by InvestHK and the Singapore FinTech Festival organised by the MAS.

A more direct method involves a variety of grants for innovators. Eligibility for these grants may be based on multiple factors, such as (i) the stage of development of the relevant

FinTech firm, product or service[107] or (ii) the type of innovative activity.[108] Other financial instruments include tax benefits, such as tax incentives for investing in qualifying early stage innovation companies (ESIC) in Australia.[109]

Some government agencies are offering organisational support in the form of measures to facilitate the establishment of local FinTech presence (but without direct support by the relevant regulator, which is a form of regulatory consultation discussed in section 2.2 above). By way of example, the FinTech Team at InvestHK may assist innovators with (i) practical support and information on setting up a FinTech business (office, visa applications, opening bank accounts), (ii) introductions to regulators, (iii) networking and (iv) marketing.[110]

Organisational support can also take the form of establishing, or assisting in the establishment of, domestic non-commercial FinTech hubs, such as Stone & Chalk in Australia.[111]

2.4. Enhancing domestic FinTech expertise

Insufficient subject matter expertise is a dangerous bottleneck for FinTech development in any jurisdiction, which cannot be wished away or patched on the fly. It takes time: time to educate new professionals, get them to apply their knowledge in the financial services sector and, importantly, develop a pro-innovation culture. Measures to enhance domestic FinTech expertise are not only practical and future oriented. They serve as evidence of a healthy

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[107] Cyberport in Hong Kong offers (i) a Creative Micro Fund up to HKD 100,000 seed funding, (ii) an Incubation Programme up to HKD 500,000 and working space, (iii) Accelerator Support Programme up to HKD 300,000 for Cyberport incubatees and alumni, (iv) Market Development Support Scheme up to HKD 200,000 to develop in overseas/mainland markets and (v) a Macro Fund between 1 and 20 million HKD in co-investment. See 'Cyberport Entrepreneurs', *About Cyberport* (Web Page) <https://www.cyberport.hk/en>.

[108] The Financial Sector Development Fund operated by the MAS offers innovation grants targeting the following objectives: (i) setting up new innovation centres, (ii) facilitating financial institution-level innovations, (iii) developing industry-wide technological infrastructure, (iv) promoting innovation in the area of artificial intelligence and data analytics, (v) supporting early stage novel solutions to problems in the financial sector and (vi) expanding cybersecurity capability in the financial sector. See Monetary Authority of Singapore, 'Financial Sector Development Fund', Schemes and Initiatives (Web Page, 03 January 2019) <https://www.mas.gov.sg/schemes-and-initiatives/Financial-Sector-Development-Fund-FSDF>.

[109] See Australian Taxation Office, 'Tax Incentives for Early Stage Investors', *Business* (Web Page, 11 April 2019) <https://www.ato.gov.au/Business/Tax-incentives-for-innovation/In-detail/Tax-incentives-for-early-stage-investors/>.

[110] InvestHK, 'Asia's Global FinTech Event - Hong Kong FinTech Week 2019', *Why Hong Kong* (Web Page) <https://www.investhk.gov.hk/en/why-hong-kong/whats-happening/asia-s-global-fintech-event-hong-kong-fintech-week-2019.html>.

[111] Committee for Sydney, 'Stone and Chalk to Support Sydney Fintech Startups', *News* (Web Page, 04 March 2015) <https://www.sydney.org.au/stone-and-chalk-to-support-sydney-fintech-startups/>.

FinTech ecosystem and send a powerful signal to the entire financial services market, domestically and abroad, that the relevant jurisdiction has taken a comprehensive and multifaceted approach to FinTech facilitation. The relevant measures come in two forms: (i) strategies to develop FinTech expertise among regulators and (ii) initiatives to raise FinTech talent generally.

Regulators are normally expected to maintain a high level of internal subject matter expertise – the latter is critical for performing their functions. While comprehensive internal FinTech training programs appear to be rare, many regulatory authorities have set up internal structural divisions focusing on FinTech. For example, the HKMA established its Fintech Facilitation Office (FFO) in March 2016 as a unit which 'facilitates the healthy development of the fintech ecosystem in Hong Kong and promotes Hong Kong as a fintech hub in Asia'.[112] The functions of the FFO extend beyond regulatory consultation – this unit also acts as:

- a platform for exchanging FinTech ideas among key stakeholders and conducting outreaching activities;
- an initiator of industry research in potential application and risks of FinTech solutions; and
- a *facilitator to nurture talents* to meet the growing needs of the fintech industry in Hong Kong.[113]

By fulfilling all of these functions, the HKMA also builds internal expertise and promotes internal pro-FinTech culture.

Initiatives to develop local FinTech talent within the financial services sector have been implemented differently by the regulators covered by this study.

In 2016, the HKMA and the Hong Kong Applied Science and Technology Research Institute (ASTRI) established the Fintech Career Accelerator Scheme (FCAS)[114] – a program offering students a full-time, semester-based internship. Participating interns work on FinTech

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[112] Hong Kong Monetary Authority, 'Fintech', Key Functions (Web Page, 08 October 2019) <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech/>.

[113] Ibid.

[114] The 2019/2020 intake is co-organised by the HKMA, ASTRI and Cyberport.

projects at banks or operators of stored value facilities and receive training and regulatory updates from ASTRI and the HKMA.[115] Also in 2016, the MAS and five Singapore's polytechnics signed a Memorandum of Understanding to 'review and enhance the polytechnics' curricula in the next three years to prepare and equip their graduates with the skill sets necessary to take on the new FinTech-related jobs emerging in the financial sector'.[116]

Singapore's Global-Ready Talent (GRT) programme launched in October 2019 by Enterprise Singapore (the government agency focusing on enterprise development) supports local companies offering paid internships to local students with placements in Singapore and abroad, up to 70% of the amount of the monthly internship stipend.[117] Another element of the GRT, the Management Associate stream, aims to facilitate employment of fresh graduates (or existing staff with no more than three years of work experience) in Singapore-based companies by providing funding of up to 70% (capped at SGD 50,000 per management associate annually) of work placements abroad, primarily in Southeast Asia, China and India.[118]

2.5. Cross-border collaboration

For many FinTech products and services operating on a cross-border basis, domestic regulation is only one of many obstacles to innovation. In many cases (particularly when local demand is insufficient), a critical component of a FinTech firm's business model is such firm's ability to scale and launch the relevant solution in multiple jurisdictions. To help facilitate development of such projects, regulators in Australia, Hong Kong, Singapore and Switzerland have all engaged in various bilateral and multilateral forms of cross-border collaboration with foreign regulators, as well as with international organisations.

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[115] 'Fintech Career Accelerator Scheme' (Web Page) <http://www.fcas.hk/>.

[116] 'MAS and Local Polytechnics Sign Memorandum of Understanding to Promote Skills Development in Financial Technology' (Web Page) <https://www.mas.gov.sg/news/media-releases/2016/mas-and-local-polytechnics-sign-memorandum-of-understanding-to-promote-skills-development-in-fintech>.

[117] Global Ready Talent Programme, 'Internship', About Programme (Web Page) <https://www.joinsme.sg/#/Internship>.

[118] Global Ready Talent Programme, 'Management Associate', About Programme (Web Page) <https://www.joinsme.sg/#/ManagementAssociate>.

First, regulators in all four jurisdictions examined in this report have entered into cooperation agreements providing for mutual information exchange and/or referral mechanisms for FinTech businesses: 15 by ASIC,[119] 9 by the HKMA,[120] 6 by the Hong Kong SFC,[121] 3 by the Hong Kong IA,[122] 9 by FINMA[123] and 33 by the MAS[124]. The scope of these agreements is often quite narrow, which limits their real and perceived impact.

Second, in an attempt to promote international harmonisation of regulatory sandboxes, an international group of financial regulators established the Global Financial Innovation Network (GFIN) in January 2019.[125] The GFIN is the result of evolution of the concept a 'global sandbox' initially floated by the FCA in February 2018.[126] However, the inherent complexities and different expectations of various stakeholders identified during the public consultation phase led to the revision of the scope of this project. The GFIN ended up as group of regulators (joined by several observers) aiming to perform three different functions: (i) a network to collaborate and share experiences in the FinTech space, (ii) a forum for joint policy work and discussions among financial regulators and (iii) an environment for firms to test cross-border solutions (a cross-border sandbox).[127] The new mandate of the GFIN

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[119] Australian Securities and Investments Commission, 'International Co-operation', *For Business* (Web Page) <https://asic.gov.au/for-business/innovation-hub/asic-and-fintech/is-my-fintech-company-eligible-for-assistance/international-co-operation/>.

[120] Hong Kong Monetary Authority, 'International Collaboration', *Key Functions* (Web Page) <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech/closer-cross-border-collaboration/international-collaboration/>.

[121] Securities and Futures Commission, 'International Cooperation Agreements', *Welcome to the Fintech Contact Point* (Web Page, 06 June 2018) <https://www.sfc.hk/web/EN/sfc-fintech-contact-point/international-cooperation-agreement.html>.

[122] Insurance Authority, 'International and Domestic Cooperation - Memorandum of Understanding', *Supervision* (Web Page) <https://www.ia.org.hk/en/supervision/int_dom_cooperation/international_and_domestic_cooperations_memorandum_of_understanding.html>.

[123] FINMA, 'FinTech financial services providers', *Authorisation* (Web Page) <https://www.finma.ch/en/authorisation/fintech/>.

[124] Monetary Authority of Singapore, 'FinTech Cooperation Agreements', *FinTech and Innovation* (Web Page) <https://www.mas.gov.sg/development/fintech/fintech-cooperation-agreements>.

[125] Global Financial Innovation Network, *GFIN – One Year On* (Report, 2019) 5 <http://dfsa.ae/Documents/Fintech/GFIN-One-year-on-FINAL-20190612.pdf>.

[126] *Global Financial Innovation Network (GFIN)* (Consultation Document, August 2018) 4 <https://www.fca.org.uk/publication/consultation/gfin-consultation-document.pdf>.

[127] Global Financial Innovation Network, *Terms of Reference for Membership and Governance of the Global Financial Innovation Network (GFIN)* (August 2019) <https://www.fca.org.uk/publication/mou/gfin-terms-of-reference.pdf>.

evidences a more flexible platform for regulatory collaboration that is more readily acceptable internationally (particularly in those jurisdictions which reject the sandbox concept, such as Germany or France). Regulators from Australia, Hong Kong and Singapore are founding members of the GFIN and are members of GFIN's Coordination Group.[128] At the time of writing, eight firms were admitted into the pilot cross-border sandbox.

Third, some regulators are expanding their domestic FinTech facilitation initiatives across borders. In July 2019, the MAS co-hosted with the Central Bank of Kenya the inaugural Afro-Asia FinTech Festival in Nairobi.[129]

Fourth, regulators and other national authorities may not only act as facilitators, but also innovate themselves – as demonstrated by a joint project by the HKMA and the MAS known as the 'Global Trade Connectivity Network' (GTCN). The GTCN was announced in 2017 as 'an information highway using DLT [distributed ledger technology] between the Hong Kong Trade Finance Platform and the National Trade Platform in Singapore, which will make cross-border trade and financing cheaper, safer, and more efficient'.[130] The blockchain-based Hong Kong Trade Finance Platform was developed by a consortium of 12 major banks and launched in October 2018 under the name of 'eTradeConnect' to facilitate trade financing by digitising trade documents and automating trade finance processes.[131] The Singaporean counterpart, National Trade Platform, was developed by the Singapore Customs and the Government Technology Agency of Singapore (GovTech) in collaboration with other ministries, government agencies and working groups and also underwent rebranding and launched in September 2018 under the name of 'Networked Trade Platform' as a framework to facilitate trade finance implementing a digital document hub, trade information management system and a platform offering additional trade-related services (including

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[128] Financial Conduct Authority, 'Global Financial Innovation Network (GFIN)', *Firms* (09 August 2019) <https://www.fca.org.uk/firms/global-financial-innovation-network>.

[129] 'Afro-Asia Fintech Festival Kicks-Off', *Afro-Asia Fintech Festival* (Web Page) <https://www.afroasiafintech.net/article.php?link=afro-asia-fintech-festival-kicks-off>.

[130] Monetary Authority of Singapore, 'Singapore and Hong Kong Launch a Joint Project on Cross-Border Trade and Trade Finance Platform', *Media Releases* (Web Page, 15 November 2017) <https://www.mas.gov.sg/news/media-releases/2017/singapore-and-hong-kong-launch-a-joint-project-on-cross-border-trade-and-trade-finance-platform>.

[131] Hong Kong Monetary Authority, 'The Launch of eTradeConnect and the Collaboration with We.trade', *Press Releases* (Web Page, 31 October 2018) <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2018/10/20181031-4/>.

financing).[132] At the time of writing, no up-to-date information was publicly available concerning the status of the GTCN, which is expected to link ‘eTradeConnect’ with ‘Networked Trade Platform’, or the scope of implementation of distributed ledger technology within the GTCN.

Fifth, in June 2019, the Bank for International Settlements (BIS) announced the upcoming establishment of a network of BIS Innovation Hub Centres to foster international collaboration on FinTech within the central banking community.[133] The objectives of this new initiative are threefold: (i) to identify and develop in-depth insights into critical trends in technology affecting central banking, (ii) to develop public goods in the technology space geared towards improving the functioning of the global financial system, and (iii) serve as a focal point for a network of central bank experts on innovation.[134] Three out of four jurisdictions examined in this report were selected as the locations of the first BIS Innovation Hub Centres, which will be hosted by the Swiss National Bank, Hong Kong Monetary Authority, and Monetary Authority of Singapore.[135]

2.6. Facilitating regulation

The list of FinTech-facilitating measures would be incomplete without mentioning future-oriented rules adopted to facilitate FinTech generally. Such measures can take many forms, but principally have one or more of the following objectives: (i) enhance legal certainty, (ii) lower entry barriers for innovators or (iii) encourage innovation in selected areas.

As the financial services sector is often subject to detailed and sophisticated rules, a common concern is that innovation may be stifled by overregulation or due to unclear status of innovative products or services (which is also one of the main reasons for the establishment of regulatory sandboxes). As a result, lawmakers and regulators keep revising the existing legal frameworks to (i) eliminate gaps in regulation, (ii) prevent duplication in existing legal frameworks and (iii) clarify how the existing rules should apply to FinTech solutions.

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[132] Networked Trade Platform, ‘Introduction to NTP’, *Overview* (Web Page) <https://www.ntp.gov.sg/public/introduction-to-ntp---overview>.

[133] Bank for International Settlements, ‘BIS to Set up Innovation Hub for Central Banks’, Press Releases (Web Page, 30 June 2019) <https://www.bis.org/press/p190630a.htm>.

[134] Ibid.

[135] Ibid.

Product-specific regulation has played an important role as an instrument in FinTech promotion through added legal certainty. For example, all of the selected jurisdictions have adopted dedicated rules and clarifications on the legal status of crypto-assets (including cryptocurrencies) and crowdfunding projects known as 'initial coin offerings' (or ICOs).[136] In addition, regulators seek to clarify how the key financial regulatory requirements (such as anti-money laundering due diligence obligations) can be adjusted in a technology-neutral fashion in the context of digitisation of financial services.[137]

Some jurisdictions have chosen to lower their entry barriers for innovators, by raising the threshold parameters for licensable activities and otherwise promoting increased competition on the market. For example, the Swiss Federal Council has set the maximum period for which deposits may be held in settlement accounts at 60 days (compared to the previous timeframe of just seven working days).[138] In Hong Kong, the Insurance Authority created a dedicated ('fast track') licensing procedure for applications for authorisations of new insurers owning and operating solely digital distribution channels.[139] In Australia, the introduction of a consumer data right aims to bring a fundamental change to the level of competition in the banking sector through FinTech:

> This new right will improve consumers' ability to compare and switch between goods and services on offer. We expect the scheme to encourage competition between service

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[136] See FINMA, 'FINMA Publishes "Stable Coin" Guidelines', *News* (Web Page, 11 September 2019) <https://www.finma.ch/en/news/2019/09/20190911-mm-stable-coins/> (Switzerland); Monetary Authority of Singapore, *A Guide to Digital Token Offerings* (30 November 2018) <https://www.mas.gov.sg/~/media/MAS/News%20and%20Publications/Monographs%20and%20Information%20Papers/Guide%20to%20Digital%20Token%20Offerings%20last%20updated%20on%2030%20Nov.pdf> (Singapore); Securities and Futures Commission, 'Statement on Regulatory Framework for Virtual Asset Portfolios Managers, Fund Distributors and Trading Platform Operators', *Policy Statements and Announcements* (Web Page, 01 November 2018) <https://www.sfc.hk/web/EN/news-and-announcements/policy-statements-and-announcements/reg-framework-virtual-asset-portfolios-managers-fund-distributors-trading-platform-operators.html> (Hong Kong); Australian Securities and Investments Commission, 'Initial Coin Offerings and Crypto-Assets', *Digital Transformation* (Web Page) <https://asic.gov.au/regulatory-resources/digital-transformation/initial-coin-offerings-and-crypto-assets/> (Australia).

[137] See, eg, FINMA, *Video and Online Identification* (Circular 2016/7) <https://www.finma.ch/en/~/media/finma/dokumente/rundschreiben-archiv/2016/rs-16-07/finma-rs-2016-07.pdf?la=en>.

[138] FINMA, *Sandbox and Settlement Accounts: FINMA Amends Circular* (Press Release, 01 September 2017) <https://www.finma.ch/en/~/media/finma/dokumente/dokumentencenter/8news/medienmitteilungen/20170901-mm-rs-publikumseinlagen-bei-nichtbanken.pdf?la=en>.

[139] Insurance Authority, 'Insurtech Corner', *About Us* (Web Page) <https://www.ia.org.hk/en/aboutus/insurtech_corner.html>.

providers, leading not only to better prices for customers but also more innovation of products and services.[140]

3. Conclusion: Upcoming challenges in FinTech facilitation in Australia

The appointment of Australia's first FinTech minister in 2019 is a clear indicator that FinTech is considered one of the main drivers in the evolution of Australia's financial services sector. Indeed, in the light of the substantial progress achieved by the other jurisdictions covered by this report, Australia's financial sector must innovate if it hopes to be regionally, let alone globally, competitive.

What lessons can be learned from the above analysis?

This report argues that in designing FinTech development strategies each jurisdiction should take into account the entire financial services sector, as well as the resources and opportunities offered by all existing stakeholders (including all of the relevant governmental offices and supervisory authorities), rather than individual regulators. Individual measures – eg regulatory sandboxes – have very limited potential without complementary tools, such as regulatory consultations, organisational support and facilitating regulation.

There is no uniform taxonomy of FinTech development instruments. The different approaches to the concept of a 'regulatory sandbox' in all four jurisdictions examined in this report highlight the importance of not losing sight of the broader FinTech picture and the entire regulatory arsenal available. Ultimately, it is of little consequence whether APRA's restricted ADI licence[141] is classified as a type of regulatory sandbox (alongside the new FinTech licence in Switzerland) – as long as FinTech firms make good use of this regulatory initiative.

What are the main upcoming challenges in FinTech regulation Australia is likely to face?

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[140] Australian Competition & Consumer Commission, 'ACCC Welcomes Consumer Data Right', *Media Releases* (Web Page, 09 May 2018) <https://www.accc.gov.au/media-release/accc-welcomes-consumer-data-right>.

[141] Australian Prudential Regulation Authority, *ADI Licensing: Restricted ADI Framework* (Information Paper, 04 May 2018) <https://www.apra.gov.au/sites/default/files/information-paper-adi-licensing-restricted-adi-framework-20180504.pdf>.

First, Australia's regulatory sandbox regime should be further enhanced, bearing in mind the following:

- Attempts to modernise ASIC's sandbox framework need to consider the broad scope of the existing sandbox environment, which is not limited to the 'fintech licensing exemption'.
- Regulators should consider two recent trends highlighted in this article: the ongoing amalgamation of authorisation and non-authorisation sandboxes and the launch of narrow, subject matter-specific sandboxes (eg 'Sandbox Express' in Singapore) to drive innovation in specific sub-sectors.
- Based on the experience of other jurisdictions, it would be beneficial to reassess the prospective benefits of the authorisation model of a regulatory sandbox as part of upcoming sandbox reform.
- All stakeholders – including prospective sandbox users – are likely to benefit from a summary of lessons ASIC has learned from its sandbox experience to date.
- Regulators should consider whether the disclosure requirements imposed on firms utilising the 'fintech licensing exemption' (especially after the upcoming reform) are sufficient to avoid creating the impression that such regulators endorse the relevant innovation and consider existing international practices (eg the requirements imposed in Arizona).
- The upcoming revision of the (already complex) sandbox regime is likely to be confusing for unsophisticated parties (in particular, start-ups) and should be accompanied by clear explanatory materials outlining the key differences. Regulatory clarity, as well as consistency in the use of relevant terminology (in particular, in relation to the composition of Australia's regulatory sandbox) will be appreciated by the end users. But more importantly, regulators need to be very clear and upfront about the extent of their involvement in the regulatory sandbox – to ensure that regulatory vision and capacity are properly aligned with the expectations of Australians interacting with firms that choose to play in the sandbox.

Second, regulators should address the risks of TechFins – major non-financial firms (such as technology or telecommunications companies) entering the financial services market.[142] Upon crossing the financial sector boundary, large-scale data-intensive businesses like Facebook will become instantly systemic, and regulators may struggle to regulate such firms for a variety of reasons, from insufficient regulatory capacity to the need for a coordinated international response. A good example of disruptive potential of TechFins is the new stablecoin 'Libra', which was announced by Facebook in June 2019 and poses a major new global challenge in the area of payment system innovation. Development of a cryptocurrency at the scale envisaged in the Libra whitepaper[143] has the potential to disrupt competition among payment system participants. The regulatory response to Libra will be critical in tapping the opportunities and curbing the relevant risks. However, the implications of Libra are difficult to assess at this early stage due to incomplete information on the design of the new stablecoin.[144]

Third, regulators will remain under pressure to keep abreast of the new technological innovation, demanding more and more subject matter expertise to identify the underlying risks and develop the most appropriate responses. For example, technology providers are increasingly offering novel solutions based on highly sophisticated database structures, encryption techniques and algorithms. Very few regulators, let alone end-users, possess the ability to test and verify the entirety of the code provided by developers. Others view it as a 'black box'. However, developers' liability is limited and cannot reliably protect against faults built into many FinTech solutions, putting end-users at risk. Reduction of such risks will be an important challenge for regulators.

Fourth, while promoting technological innovation in finance, regulators are seeking – and will likely continue looking for – ways to expand their own regulatory toolkit. In the payments area, monetary authorities worldwide are conducting research and running pilot

[142] For more detail about the TechFin concept see Dirk A Zetzsche, Ross P Buckley, Douglas W Arner and Janos N Barberis, 'From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance' (2018) 14(2) *New York University Journal of Law & Business* 393.

[143] 'Welcome to the Official Libra White Paper' (Web Page, 2019) <https://libra.org/en-US/white-paper/>.

[144] For a preliminary assessment of the relevant implications, see Dirk A Zetzsche, Ross P Buckley, and Douglas W Arner, 'Regulating LIBRA: The Transformative Potential of Facebook's Cryptocurrency and Possible Regulatory Responses' forthcoming *Oxford Journal of Legal Studies* and University of New South Wales Law Research Series, 16 September 2019 <https://ssrn.com/abstract=3414401>.

projects of central bank digital currencies (CBDC). One of the leading examples comes from Singapore, where the MAS has experimented with: (i) Ethereum-based CBDC (Singapore dollar equivalent) for interbank payments (ii) setting up real time gross settlement (RTGS) systems on different distributed ledger platforms (Corda, Hyperledger Fabric and Quorum) and (iii) delivery versus payment (DvP) systems based on distributed ledgers.[145] Despite a substantial number of pilots around the world, mass implementation of CBDC platforms remains unlikely in the short term, particularly in the absence of a conclusive positive *ex ante* impact assessment demonstrating the benefits of a CBDC over existing platforms. Nonetheless, a launch of a CBDC by a major economy is likely to produce a strong flow-on effect, resulting in the proliferation of similar currencies across the globe.[146]

Fifth, regulation of cybersecurity is becoming one of the most important items on the agenda of central banks around the globe. The increasing complexity and interconnectedness of the financial ecosystem – based on the interdependent operational network of a broad range of actors (banks, financial market infrastructures, various service providers) – raises the risks of contagion and creates new entry points for attackers, thus calling for greater overall cybersecurity within the entire financial sector (and not just the largest institutions). New regulatory requirements may pose a challenge for smaller FinTech firms that may lack the resources or sophistication to comply with complex requirements on their own.

However, in the absence of an agreed international approach, the new cybersecurity rules vary significantly across jurisdictions. Singapore and Hong Kong have adopted some of the world leading regulations in the area of cybersecurity. This includes Singapore's Cybersecurity Act 2018, MAS Notice 655 on Cyber Hygiene and the relevant Penetration Testing Guidelines for the Financial Industry, as well as Hong Kong's Cybersecurity Fortification Initiative 2016. Designing a modern, but not overly restrictive, cybersecurity regulation may assist in positioning the relevant jurisdictions as leaders in the FinTech space. This is particularly relevant for Australia, where the need for further modernisation of the regulatory framework on cybersecurity has been acknowledged at the highest level:

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145 Monetary Authority of Singapore, 'Project Ubin: Central Bank Digital Money Using Distributed Ledger Technology', *Schemes and Initiatives* (Web Page) <https://www.mas.gov.sg/schemes-and-initiatives/Project-Ubin>.

146 See Didenko and Buckley, 'The Evolution of Currency: Cash to Cryptos to Sovereign Digital Currencies' (2019) 42 (4) *Fordham International Law Journal* 1041, 1093.

> The Government currently uses its cyber security capabilities within a legislative framework that was established before the internet became a foundational element of our economy, and without a modern perspective on how malicious cyber activity crosses traditional geographical borders.[147]

Sixth, lawmakers and regulators should continue to identify areas in need of enabling regulation to facilitate the development of FinTech in those areas. The launch of open banking is a welcome step – but one of many needed to promote innovation.

[147] Australian Government, Australia's 2020 Cyber Security Strategy (Call for Views, 2019) 9 <https://www.homeaffairs.gov.au/reports-and-pubs/files/cyber-security-strategy-2020-discussion-paper.pdf>.