REDEFINING INSURANCE SUPERVISION FOR THE NEW NORMAL

Co-authored by the IAIS Secretariat and Financial Stability Institute (FSI) of the Bank for International Settlements (BIS)

Farzana Badat, Denise Garcia Ocampo and Jeffery Yong

April 2021

Authorised by
Vicky Saporta, IAIS Executive Committee Chair
Fernando Restoy, FSI Chair
ABOUT THE IAIS

The International Association of Insurance Supervisors (IAIS) is a voluntary membership organisation of insurance supervisors and regulators from more than 200 jurisdictions. The mission of the IAIS is to promote effective and globally consistent supervision of the insurance industry in order to develop and maintain fair, safe and stable insurance markets for the benefit and protection of policyholders and to contribute to global financial stability.

Established in 1994, the IAIS is the international standard setting body responsible for developing principles, standards and other supporting material for the supervision of the insurance sector and assisting in their implementation. The IAIS also provides a forum for Members to share their experiences and understanding of insurance supervision and insurance markets.

The IAIS coordinates its work with other international financial policymakers and associations of supervisors or regulators, and assists in shaping financial systems globally. In particular, the IAIS is a member of the Financial Stability Board (FSB), member of the Standards Advisory Council of the International Accounting Standards Board (IASB), and partner in the Access to Insurance Initiative (A2ii). In recognition of its collective expertise, the IAIS also is routinely called upon by the G20 leaders and other international standard setting bodies for input on insurance issues as well as on issues related to the regulation and supervision of the global financial sector.

International Association of Insurance Supervisors
c/o Bank for International Settlements
CH-4002 Basel
Switzerland
Tel: +41 61 280 8090 Fax: +41 61 280 9151
www.iaisweb.org

This document was prepared jointly by the IAIS Secretariat and staff members of the Financial Stability Institute (FSI) of the Bank for International Settlements (BIS), and authorised by the Chair of the IAIS Executive Committee and the Chair of the FSI.

The views expressed herein are those of the authors, based on interviews with identified supervisors, and do not necessarily reflect the views of the IAIS, BIS or other Basel-based standard setting bodies.

This document is available on the IAIS website (www.iaisweb.org) and the BIS website (www.bis.org)

© International Association of Insurance Supervisors (IAIS), 2021.

All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.
Lessons learnt from the Covid-19 crisis will be critical to future-proof insurance supervision. Streamlined and agile supervisory processes backed by resilient digital infrastructure and closer engagement with insurers and other regulatory agencies will be critical to help insurance supervisors cope with future unexpected disruptions.

Insurance supervision in the new normal will redefine the demarcation between on-site and off-site supervision, with elements of remote supervision becoming a mainstay to enable more efficient and effective supervisory oversight in the future. However, remote supervision cannot entirely replace on-site supervision especially in assessing behavioural aspects of insurers.

Proper support structures to ensure the ongoing health and wellbeing of supervisory teams will be critical to maintaining effective supervisory oversight in prolonged remote working environments.

The pandemic accelerated the digitalisation of both insurance supervisory processes and the insurance business value chain. As the pace and scale of digital transformation continues to increase, so will cyber security and policyholder protection risks, which must be appropriately managed.

Supervisors will need to apply a more holistic approach to technology investments in the future. Adoption of new supervisory technologies will need to be complemented with capacity building programmes that equip supervisors with new digital skill sets required to adapt to supervision in the new normal.
The Covid-19 pandemic tested the operational resilience and adaptability not only of insurers but also supervisory authorities. Most supervisors had to adapt quickly to work-from-home and other social distancing restrictions. This required a wide range of adjustments, from enhancing IT capabilities in response to heavier remote access demands to refocusing supervisory priorities and activities to maintain effective oversight of insurers in a rapidly changing environment. Many of these challenges and adjustments will endure beyond the current pandemic and are set to shape what will become the new normal of insurance supervision in the longer term.

Based on interviews with nine insurance supervisory authorities, this paper outlines common and specific measures taken by these supervisors to cope with the pandemic. In Section 2, the paper describes how supervisors transitioned to remote working and how this transition impacted their supervisory processes and activities. Section 3 highlights key human resource and team cohesion aspects necessary for supervisors to cope more smoothly with the transition. Section 4 provides a forward looking perspective on the potential longer term impacts of prolonged remote working arrangements on insurance supervision. Section 5 concludes with potential follow up considerations to help supervisors in their continuing efforts to adjust to the new normal of digitalisation well into the post-Covid future.
2. ADJUSTMENTS TO SUPERVISORY PROCESSES AND ACTIVITIES

Supervisory transition to remote work

The most significant organisational challenges faced by the surveyed authorities at the onset of the Covid-19 pandemic related to their readiness to transition to remote work and adjustments to internal processes. Most of the surveyed authorities had IT remote access arrangements in place before the pandemic but not necessarily on an adequate scale required to support all staff or all activities. Significant efforts were made by many authorities to provide staff with a remote work "toolkit" composed of IT hardware and software that enabled them to continue their activities remotely (see Figure 1). Transition to remote work (not only in terms of supervision but also internal processes such as onboarding of new staff) was smoother for authorities that had already provided such a toolkit and trained staff for its use before the pandemic.

Figure 1

Remote work toolkit

- IT equipment and remote computer access
- Internet access
- Authentication and security software
- Communication software
- Video conferencing software
- Collaborative work software

Source: FSI and IAIS staff
Impact on supervisory planning and priorities

At the outset of the Covid-19 outbreak, all surveyed supervisors immediately re-evaluated both their regulatory and supervisory priorities for the year. The objective was twofold, namely to alleviate operational pressures on insurers as well as to refocus their own supervisory efforts onto those risks and issues requiring heightened vigilance as a result of the rapidly unfolding crisis.³

With mandatory shelter-in-place restrictions implemented to varying degrees across most jurisdictions, the supervisory processes most significantly impacted were on-site inspections and other traditionally physical or “paper-based” activities. In some jurisdictions, regulations that require certain review processes to be conducted in-person and/or manually proved to be a particular challenge for supervisors as they adapted to remote working conditions. To facilitate the transition of these supervisory activities, two of the surveyed authorities implemented an adaptable approach that linked supervisory activities to government restriction measures (see Box 1).

Box 1

BNM and CNSF adaptable supervisory approach

Bank Negara Malaysia (BNM) implemented a “new normal supervisory approach” in view of the Movement Control Order requirements by the government. The new approach specified activities that supervisors can and cannot do during restriction periods, as well as enhanced supervisory measures that can be taken by supervisors. Such measures require greater reliance on virtual engagements, digital correspondence and technological solutions. Standard operating procedures for (virtual and physical) supervisory engagements and examples of focus areas for on-site and off-site supervision were also provided.

In Mexico, the federal government put into effect a “traffic light” risk-based approach that indicates with colours the different level of restrictions according to the severity of the pandemic situation. The Insurance and Surety National Commission (CNSF) established an adaptable approach that linked supervisory activities and regulatory procedures related to activities that require in-person services or physical documentation with the government’s risk-based traffic light colour system.

Sources: BNM and CNSF
Remote supervision

The forced shift to remote supervision impelled a definite change to the rhythm of supervision across all jurisdictions surveyed. Most supervisors suspended their regular cycle-based supervisory review programmes, and focused instead on more frequent theme-based monitoring of risks directly related to the pandemic (see Figure 2) with more ad hoc and granular data requests for ongoing monitoring purposes.

Figure 2

Examples of areas subject to heightened off-site supervisory monitoring during the crisis

- More frequent stress testing
- More frequent and detailed information on credit and liquidity risk
- Closer analysis of cash flows, profitability and earnings due to contracted premium income
- Closer scrutiny of business continuity plans, operational resilience and cyber security controls
- More granular claims data, product and policy wording information on certain lines of business
- Monitoring of measures to provide relief to, and protect, vulnerable customers

Source: FSI and IAIS staff
In some cases, new requirements had to be introduced to facilitate supervisors’ ability to obtain and analyse information relating to these aspects on a more frequent basis. For example, in Peru, the Superintendency of Banking, Insurance and AFP (SBS) had to develop specific tools to measure liquidity and reinsurance impacts that were not regularly examined prior to the crisis.

Most surveyed supervisory authorities viewed the shift to a virtual supervisory environment as yielding considerable efficiency gains and enabling more nimble and frequent supervisory engagements with insurers. Arranging supervisory interactions with insurers through virtual platforms benefited from fewer scheduling conflicts and enabled broader participation of attendees from across functional and regional areas.

This was helped in cases where there was proper planning and coordination of virtual interview schedules and clearly structured agendas, as well as where the relationship between the supervisory team and a particular insurer was relatively well established.

However, it was widely observed by most of the surveyed supervisory authorities that certain key non-tangible benefits of on-site supervision are extremely difficult, if not impossible, to replicate from these virtual or remote supervisory interactions. For example, supervisory teams who are physically present at an insurer’s premises are able to pick up valuable insights about the insurer’s overall culture and business environment through general observation and more organic, informal interactions with its staff at all levels.
Additionally, for supervisory reviews that are case specific or more investigative in nature, virtual engagements tend to limit the supervisor’s ability to assess vital non-verbal cues such as body language, micro-facial expressions, interpersonal team dynamics and so forth. This is similarly the case when supervisors needed to conduct interviews with key persons to assess issues around competence, honesty and integrity, for example prior to them being appointed to control functions or other critical oversight roles.

Supervisors generally found that it was easier to monitor macroprudential issues and sector wide financial risks on a remote basis. However, more granular insurance activities such as agent certification procedures, or day-to-day operational processes (e.g., claims handling, premium payments complaints etc) proved more challenging to supervise effectively in a virtual environment. This was partly because of the inability to access sample case files, manual workflow processes or IT systems.

A further limitation was found in instances where supervisors needed to do on-the-spot documentation checks and system walkthroughs. For on-the-spot documentation or process reviews, a virtual set-up can create challenges for supervisors to determine the authenticity of information provided and potentially creates opportunities for insurers to coordinate their responses behind the scenes. This can be less effective than the natural back and forth flow of in-person supervisory questioning, during which supervisors are better able to probe deeper or tailor the direction of their inquiries based on unscripted insurer responses.

System walkthroughs, on the other hand, usually require advanced notification to allow the proper physical and IT security controls to be set up to facilitate supervisors’ access to these systems. A few supervisors managed to work around the limitations relating to remote system and process reviews by implementing desktop and screen sharing tools, supported by advanced IT security controls.

An important factor here was the ability to manage software and IT security compatibility issues between the systems of the supervisor and insurers. A few supervisors noted that some insurers were a bit more cautious about agreeing to virtual or screen-sharing based system walkthroughs without strong security protocols being implemented by both the supervisor and the insurer.
Regulatory reporting and data collection

Effective remote supervision is critically dependent on access to digitalised regulatory data. Prior to the Covid-19 outbreak, most surveyed authorities already had digital regulatory reporting mechanisms in place for quantitative data of insurers (e.g., balance sheet, capital resources, and capital requirements). However, this was not always the case for qualitative reporting such as Own Risk and Solvency Assessment (ORSA) or official documentation for licensing, registration or certification purposes, where a few of the surveyed authorities still require an inked signature for such official documentation due to legal obligations. In a small number of cases, regulatory changes were introduced to facilitate acceptance of electronic signatures and digitally signed documentation for wider regulatory submissions.

Supervisors who had digital regulatory reporting in place prior to the Covid-19 outbreak were able to get a clearer sense of the risks and issues facing the sector earlier in the crisis. On the other hand, those supervisors who, prior to the crisis, still relied heavily on physical documentation or data collections via email, experienced some early challenges in adapting their supervisory activities due to the lack of readily available data in the immediate aftermath of the outbreak.

Less digitalised supervisors had to, for example, obtain special authorisation from public health authorities for skeletal staff to maintain some level of physical presence at the authorities’ premises to scan physical documentation received from insurers even during the severest lockdown periods.
Investments by supervisory authorities in more automated and streamlined regulatory reporting infrastructure have great potential to improve the overall quality and responsiveness of supervisory interventions well into the future. This was evidenced by those supervisors who managed to increase the frequency and granularity of their regulatory data collections during the crisis due to their digitalised reporting platforms (see Box 2).

Box 2

**Digitalised regulatory reporting enhancements implemented in India and Mexico**

Most supervisory processes undertaken by the *Insurance Regulatory and Development Authority of India (IRDAI)* such as licensing, product approvals and other reviews had already been automated prior to the outbreak of Covid-19. Its internal IT team helped overcome some unforeseen supervisory challenges in the early stages of the crisis, such as quickly setting up secure and compatible File Transfer Protocols (FTPs) to facilitate the electronic transfer of large volumes of information between frontline supervisors and insurers. This additional data sharing facility was necessary because traditional data requirements for on-site inspections are often much larger than those for routine supervisory reporting and monitoring purposes.

Concurrently, the authority implemented several measures to help insurers adapt to a more digitalised data sharing environment for example, by implementing strengthened cyber security controls to improve insurer comfort levels about the increased frequency of regulatory reporting through electronic means.

In *Mexico*, CNSF has started to implement regulatory reporting changes to facilitate a complete shift to remote supervision in the future. Some insurers have had to invest in technology and infrastructure upgrades to adapt to a more digitalised regulatory reporting environment. They generally seem to be coping well with these changes, and regulatory reports continue to be submitted timeously.

*Sources: IRDAI and CNSF*
Coordination with other regulatory agencies

Many surveyed supervisors found that enhanced and regular coordination with other regulatory agencies provided useful opportunities to obtain a more holistic view of Covid-19 impacts across the sector. Closer and more regular interactions with other regulatory authorities were found to be helpful in facilitating coordinated responses to common issues.

Some surveyed supervisors also pointed to this as a key learning, highlighting that improved regulatory coordination and data sharing could prove vital in helping to cope with future crises. One supervisor also highlighted that such strengthened regulatory coordination was welcomed by insurers.
Cross-agency coordination is particularly effective in jurisdictions that have established inter-regulatory coordination structures and mechanisms that enable shared access to supervisory information and resources across multiple agencies (see Box 3).

Box 3

**Approach to supervisory coordination in Costa Rica and the United States**

In Costa Rica, the Superintendencia General de Seguros de Costa Rica (SUGESE) is one of four financial sector supervisors with a common Board. They engage in frequent communication and regular coordination on overarching financial sector issues. Despite the coordination model still being under development, it helped supervisors to gain good insights into the broader impacts of Covid-19 on the financial sector. Enhanced cross-agency regulatory coordination and data sharing, particularly in respect of longer-term impacts across financial groups, will be critical in assisting with post-crisis fiscal recovery efforts in Costa Rica.

In the United States, insurance supervision is done at a state level by state supervisors. The National Association of Insurance Commissioners (NAIC) was helpful in acting as a centralised support and coordination hub during the crisis to facilitate smooth and consistent adaption to remote supervision across the country.

The NAIC assisted with providing operational support to state supervisors, such as collecting and facilitating access to secure information about the impact of the crisis on the sector nationally and providing online training programmes for regulators to account for the cancellation of live training. Additionally, the NAIC was able to draw on experiences from individual states to compile a set of best practice guidelines to help supervisors adjust better to remote examination processes during the crisis. The guidelines cover issues such as availability and timeliness of supervisory work papers and reports, adjusted examination schedules, and other common logistical, IT and communication challenges faced by supervisors in remote working conditions. The NAIC also provided guidance to state insurance departments on supervisory activities affected by Covid-19, such as filing and examination deadlines.

The licensing of insurance producers (intermediaries) was an immediate challenge at the beginning of the pandemic, as many states temporarily suspended in-person tests. However, states quickly pivoted to allowing remote tests, and as of Q1 2021, 33 states were offering remote tests for insurance intermediaries entering the field. Through the NAIC, states will be looking at which temporary regulatory updates and changes introduced during Covid-19 should be made permanent.

Sources: SUGESE and NAIC
Coordination with foreign regulatory agencies was found to be more of a challenge during the crisis for a variety of reasons. Some jurisdictions still rely on physical documentation and inked signatures for the exchange of supervisory information with foreign regulators. This limited the ability of some supervisors to access information from foreign counterparts that had little or no on-site presence during the lockdown periods. Despite several jurisdictions introducing measures to facilitate the digital sharing of information locally (including the use of electronic signatures), there were still some residual security concerns around the digital sharing of supervisory and insurer data across borders.

Additionally for supervisors in certain regions, such as the Australian Prudential Regulation Authority (APRA), virtual coordination with international regulators could be challenging because of vast time zone differences. Similar to the toll from travelling long distances for physical meetings, there are limits to the use of virtual meetings in the longer term in conducting remote international supervisory colleges.
Most analysis on the supervisory impact of Covid-19 focuses on regulatory and supervisory processes and activities. However, one of the most important issues – the impact on supervisory teams - has not been covered extensively. This “softer” aspect of supervision should not be underestimated. Without (mentally and physically) healthy staff, insurance supervision cannot be undertaken effectively.

Unlike business continuity exercises that essentially stress test the operational resilience of supervisory authorities over a short period of time, a distinguishing feature of Covid-19 is the perpetuity of the work-from-home situation. As a result of this unprecedented situation, a number of team issues required careful management by the surveyed authorities. In such uncertain times, it is critically important for the leadership of a supervisory authority to demonstrate empathy and flexibility. As with many aspects of supervision, supporting supervisory teams to navigate the uncertainties created by the pandemic required careful balancing of various trade-offs by most authorities surveyed.

Examples of actions taken by the surveyed authorities to support staff adjust to remote supervision are summarised below as “the 5Cs of humanity in insurance supervision” (see Figure 3). Although some of these measures are generally applicable in most non-supervisory organisational contexts, many of the surveyed supervisors explicitly highlighted these points as being significant measures that helped them adjust more smoothly to a remote supervision environment.
Demonstrate confidence, trust and empowerment to staff to do their job without being overly prescriptive.

Offer flexibility on working hours to accommodate personal circumstances (e.g., later start or earlier end due to childcare responsibilities).

Provide clear communication to staff members, including on work-from-home arrangements to dispel unfounded rumours (e.g., return to office) that could cause anxiety.

Provide information on what to do in various scenarios of Covid-19 infection.

Balance between timely communication and avoiding "zoom fatigue" (overuse of virtual meetings).

Provide opportunities for staff to socialise in a non-work context (e.g., virtual coffee) to maintain team cohesion and to provide a support mechanism.

Put extra effort in onboarding of new staff members or handing over of job responsibilities from one staff to another.

Build team comaraderie to integrate new team members in an inclusive way, paying extra attention to introverted personalities.

Continuously motivate staff members by providing positive encouragement.

Provide opportunities for staff to socialise in a non-work context (e.g., virtual coffee) to maintain team cohesion and to provide a support mechanism.

Put extra effort in onboarding of new staff members or handing over of job responsibilities from one staff to another.

Build team comaraderie to integrate new team members in an inclusive way, paying extra attention to introverted personalities.

Continuously motivate staff members by providing positive encouragement.

Provide reassurance that the well-being of staff members is a top priority.

Provide logistical support for a conducive working environment (e.g., IT hardware and software, internet connection, furniture).

Offer psychological support on how to cope with stress and fear.

Support physical well-being by facilitating virtual yoga classes.

Help staff to prioritise to avoid over-working (e.g., no expectations to be on webinar meetings for eight hours a day), which appears to be a common theme across the surveyed authorities.

Source: FSI and IAIS staff
4. LONG-TERM NEW NORMAL

Internal organisation

In terms of internal working arrangements, most of the surveyed authorities expect some continuation of work-from-home provisions even after the pandemic. It was clear that staff productivity did not diminish during such arrangements and in fact, increased in some cases as a result of better work-life-balance. Technological investments that are being accelerated to accommodate remote working are expected to pay dividends for many years to come. Specific use cases of technology will be retained, eg convening virtual meetings at short notice. Careful consideration is needed to assess potential consequences for staff inclusion/exclusion. For example, whether team meetings will always have to offer a virtual option even if only one staff member is working remotely. A balance will need to be struck between reaping the benefits of work-from-home versus maintaining staff cohesion and rapport.

Remote supervision

The crisis has caused supervisors to re-evaluate the demarcation between on-site and off-site supervision. With virtual platforms currently in place across most supervisory authorities, it appears possible to retain most remote supervision processes in the long term. Rather than completely supplanting physical or on-site supervisory activity, it appears that supervisors in the “new normal” may need to adopt a more nimble hybrid approach to supervision. The efficiency and agility gains identified during the Covid-19 remote working environment will need to be balanced with supervisors' abilities to retain critical non-tangible insights most optimally obtained through physical interaction with insurers.
The crisis has been seen by several supervisors as an opportunity to re-evaluate the efficiency and effectiveness of their supervisory approaches and identify improvements in the future (see Box 4).

Box 4

**Re-evaluation of traditional supervisory approaches in Australia**

In **Australia, APRA** early in the crisis re-evaluated all its routine regulatory submissions required from insurers to assess whether they would be able to manage these submissions in the Covid-19 environment. APRA adopted a risk-based approach to regulatory reporting and allowed submission deferrals in some cases. This effectively also helped them reconsider the actual value of some of their routine regulatory reporting requirements. As a result, APRA is now considering whether it would be more useful to streamline its focus on certain types of reports, thereby rationalising overall reporting requirements for insurers. APRA intends to use key insights gained from the crisis to build a more efficient and resilient supervisory framework for the future.

Source: APRA

**Digital transformation**

The surveyed supervisors shared a common view that thoughtful and strategic investment in technology adoption is a very important pre-condition to enable effective supervision in the future "new normal". The crisis has forced supervisors to accelerate many of the digitalisation developments and process efficiencies they had been considering prior to the Covid-19 outbreak.

A vital enabler for more effective, proactive supervision in a digitalised environment will be supervisors’ longer-term ability to have ongoing, centralised and secure access to data on a more real-time basis. A few supervisory authorities have begun exploring potential Supervisory Technology (SupTech) tools that facilitate a shift from current “pull” to future “push” data collection models. This will enable them to conduct real-time analysis on continually refreshed data sets without having to ask insurers for data each time a situation changes.

Most surveyed authorities expect further regulatory changes will be required for broader acceptance of electronic signatures if remote supervision is prolonged, in particular for procedures related to sanctions and enforcement actions.
Risks accelerated by the new normal

Surveyed authorities acknowledged the urgent need to enhance cyber resilience throughout their IT systems, data transmission channels and storage platforms due to heightened exposure to cyber risk from the transition to remote work.

Moreover, due to insurers being among those financial institutions with the most increased exposure to cyber attacks since the onset of the pandemic, and considering the interconnectedness between their IT systems and heavy reliance on large volumes of data, supervisors will need to strengthen their vigilance of cyber risk issues across the insurance sector.

Regulatory and supervisory priorities will also need to be adjusted to address increasing money laundering and terrorist financing risks due to the expansion of the attack surface for cyber criminals, and heightened consumer risks arising from (i) the increasing demand for digitalised engagement and product distribution platforms; and (ii) the growing use of technology to make key transactional and other financial decisions about customers.

Supervisors will be looking to invest in digital upskilling and strengthening the quality and security of data required for improved supervisory analysis in light of new and emerging risks precipitated by the “new normal”. Supervisors also recognise the need to invest more in developing their internal skills and resourcing to be able to monitor new and heightened risks catalysed by the new norm of digitalisation.

Several supervisory authorities suggested that international bodies such as the IAIS are well positioned to establish guidelines or standards for these “new normal risks” being accelerated by the rapid pace of digital transformation set to continue well into the future. The potentially globalised nature of these risks also presents opportunities for international bodies to facilitate secure electronic data sharing platforms to strengthen international supervisory coordination and cooperation.
5. CONCLUDING REMARKS

The Covid-19 crisis has tested the resilience of insurers and insurance supervisors globally. It is a once in a lifetime event that will leave lasting impacts, both positive and negative.

Looking ahead, there is much opportunity for supervisors to leverage important learnings from the crisis as they “build back better” and define a model for effective insurance supervision in the new normal.

In doing so, it may be worthwhile for the international supervisory community to consider enhanced global coordination efforts related to the following:

- development of international guidance on emerging good practices for virtual supervision;
- undertaking crisis simulation exercises to assess resilience of cross-border regulatory coordination and supervisory processes (eg cross-border virtual inspections of internationally active insurance groups); and
- investments to develop reusable supervisory technologies that can yield shared benefits for the global supervisory community (eg development of digital regulatory reporting tools to facilitate secure and stable transfer and storage for large data files).

Supervisors will likely be confronted with similar and new challenges in future crises. Learnings from the current pandemic will be vital to help supervisors maintain continuity and effectiveness of their supervisory oversight of the insurance sector if and when that eventuality arises.
ENDNOTES

1. Authored by Farzana Badat, IAIS Secretariat; Denise García Ocampo and Jeffery Yong, Bank for International Settlements. The authors are grateful to Jonathan Dixon, Conor Donaldson, Greg Sutton and Raihan Zamil for reviewing the paper, and to Christina Paavola for administrative support.

2. Australian Prudential Regulation Authority (APRA), Superintendencia General de Seguros de Costa Rica (SUGESE), Insurance Regulatory and Development Authority of India (IRDAI), Bank Negara Malaysia (BNM), The Insurance and Surety National Commission (CNSF, Mexico), Superintendency of Banking, Insurance and AFP (SBS, Peru), Swiss Financial Market Supervisory Authority FINMA, Office of Insurance Commission (OIC, Thailand), National Association of Insurance Commissioners (NAIC, US).

3. See J Yong, *Insurance regulatory measures in response to Covid-19*, FSI Briefs No 4, April 2020, for the range of regulatory measures to provide insurance entities temporary relief from nonessential regulatory and supervisory requirements and to preserve continuity of insurance coverage.

4. Regulatory data refers to all the information that is primarily used by authorities to have a comprehensive understanding of the risk profile of a financial institution and to support authorities' micro- and macroprudential supervisory tasks, as well as their crisis management responsibilities. See JC Crisanto, K Kienecker, J Prenio and E Tan, *From data reporting to data-sharing: how far can suptech and other innovations challenge the status quo of regulatory reporting?*, FSI Insights No 29, December 2020.

