

SUPERVISING TOMORROW



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EXECUTIVE SUMMARY

Oliver Wyman recently surveyed financial supervisors and regulators around the world to gather views on new industry trends and their likely impact on supervisory and regulatory processes. While it is clear that both supervision and regulation will need to respond to the evolving industry, this report describes the future of supervision only, based on the findings of that survey and Oliver Wyman’s extensive work with leading global authorities.

Financial supervisors oversee an industry that is transforming rapidly. Vertical unbundling is shifting important activities to firms outside the “regulatory perimeter” and new business models are changing the relative importance of firms and risk types. The speed of change and growing complexity of the financial ecosystem increase the chance of supervisory blind spots. Supervisors will need to adapt to these developments (see Exhibit 1).

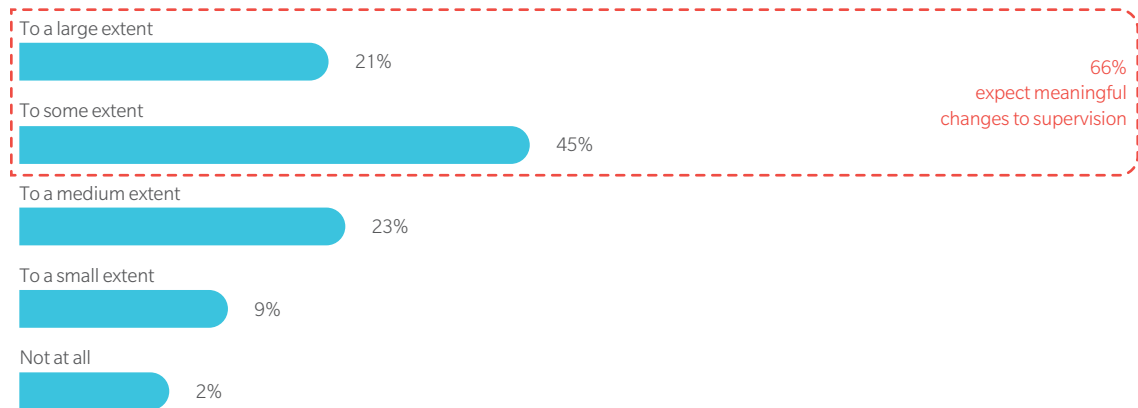
The overall finding of our survey is clear: the need to change (driven by the industry) combined with the ability to change (enabled by advances in technology and analytics) will result in transformed supervisory models by 2025. We identify five broad areas of likely change:

- First, as the industry becomes “modular”, with many firms competing in small parts of the value chain, we expect supervisors to increasingly attend to activities (such as payments or credit provision) alongside their traditional focus on entities (such as banks). Supervisors’ remits will need to be systematically reassessed in light of a continuously shifting regulatory perimeter. A matrix form of supervision is likely to emerge, balancing increased horizontal focus with sufficient entity-level accountability
- Second, advances in supervisory technologies (SupTech) provide supervisors with an opportunity to improve the quality and timeliness of risk identification and monitoring. Using advanced data gathering and analysis techniques, certain areas of supervision will use “real-time” monitoring of key risk indicators (KRIs) and early warning signals, enabling more frequent early intervention on emerging risks. Current practices, based on data samples and expert assessment of processes and methodologies, can be gradually replaced by a population-based, “full picture” view of firms’ behaviors and practices
- Third, to understand the financial ecosystem for which they are responsible, supervisors must engage more actively with it, drawing on the knowledge of the various participants and subject matter experts to develop their supervisory and regulatory approach. The increased speed of change and nature of digital activity means supervisors can no longer rely on period-end regulatory reporting and thematic reviews to identify risk, as the time lag is too long. Proactive and ongoing engagement is needed instead. This is already evident at several supervisors, who have initiated innovation hubs, “sandboxes”, data-sharing platforms and other collaborations with the industry, specifically focused on new emerging areas of risk where authorities do not have historic competences, such as Fintech, cyber, market conduct and cryptocurrencies. While these can serve to support industry participants, they also provide supervisors with a higher understanding of new business models, new technologies and potential risks. They must be mindful, however, to avoid “capture” or subverting current supervisory processes
- Fourth, these new approaches to supervision will require internal reorganization, with teams focused on activities (such as payments and lending) and technological skills (for example machine learning, AI and cyber), and not just the entities covered. New skills will be needed too, with traditional skills in economics, finance, compliance, and governance, being augmented by competence in data science and analytics, and by relationship skills to support interaction with the ecosystem

EXHIBIT 1: CHANGES WILL BE REQUIRED IN SUPERVISORY MODELS

DO YOU EXPECT TRENDS IN FINANCIAL SERVICES (FOR EXAMPLE: INNOVATIVE MARKET ENTRANTS, SHIFTS IN PROVIDERS AND INCREASED INTER-CONNECTIVITY BETWEEN ENTITIES) TO CHANGE THE TRADITIONAL RISK-BASED SUPERVISORY MODEL BY 2025?

% OF RESPONDENTS



Source: Oliver Wyman Future of Supervision Survey, 2018

- Fifth, like the ecosystem(s) they oversee, supervisors expect to become increasingly digital. This will allow them to synthesize the vast quantities of structured and unstructured data they will be collecting and analysing. It will also increase their internal efficiency while reducing the procedural compliance burdens on supervised firms. Some supervisors are already exploring this, with integrated data utilities (for regulatory reporting, AML, or credit information, for example) and machine executable reporting (such as smart contract technology)

As always, transformation will be challenging. Regulatory frameworks will need to be revised. And authorities will face a range of pressures, differing by jurisdiction, arising from their changing mandates, institutional fragmentation, and regulatory “Balkanization” aimed at protecting national interests. The difficulty authorities face is not primarily in the development of new supervisory techniques but the ability to push these from the innovation teams to business-as-usual supervision.

Nevertheless, many supervisors are starting to move in this direction, and we expect all major markets to undergo significant change in the supervisory model over the next decade.





1. SUPERVISORS FACE A CHANGING ENVIRONMENT

We surveyed circa 60 financial authorities around the world about new industry trends and their likely impact on supervisory and regulatory processes.¹ More than 60 percent of respondents indicated that they expect industry trends to change the traditional risk-based approach to supervision. Though varied, their responses clearly point in one direction: Financial supervisors oversee an industry that is transforming rapidly, and they anticipate this will have a profound effect on the way they operate.



Change is being driven by evolving consumer preferences, technological developments, and major regulatory initiatives:

- Consumers increasingly adopt digital channels, such as mobile banking, and “integrated ecosystems” which digitally connect objects, people and organizations. The rise of platforms means that customers buy financial products from a greater variety of suppliers, which often makes it difficult to pin-point the ultimate benefactors
- Technological developments are leading to new lines of business and new entrants, such as robo-advisors, neobanks and peer-to-peer (P2P) lenders. Innovation is also spurring change in incumbent players, as reduced transaction costs and increased economies of scale make outsourcing functions more attractive
- Major regulatory initiatives, such as Open Banking (in the UK, and expected in Brazil) and PSD2 (in the EU), are increasing market competition by enabling new parties (via open application programming interfaces, APIs) to build and offer services around financial institutions

Together, these trends are leading to the unbundling of traditional value chains and players, a trend we call the “modularisation” of the Financial Services industry.² Our survey respondents expect this increased diversity of players and penetration of Fintechs to be the most important factor driving industry changes (on average, ranking this 4.2 out of 5, with 40 percent ranking this 5/5; see Exhibit 2). Respondents also expect their supervisory focus on Fintechs to be as high as on Retail Banks by 2025 (ranking both close to 4 out of 5).

We believe these developments present supervisors with five main new challenges:

- Identifying and monitoring systemic risks will become more difficult as financial firms vertically disintegrate and more activity falls outside supervisors’ micro-prudential and conduct mandates (the “regulatory perimeter”, as we will call it). This includes risks from concentration in technology and data service providers, such as leading cloud service providers

- Cyber-risk has been amplified by financial activity moving online and the broad adoption of technology. Supervisors themselves are increasingly vulnerable to a cyber-attack.³ Our respondents expect the supervisory focus across risk types to be highest in Cyber and IT risks by 2025, with 64 percent ranking Cyber Risk 5 out of 5 in importance
- Anti-Money Laundering/Counter-terrorism financing (AML/CFT) risks are likely to be increased by these trends, as vertical unbundling and new business models may reduce the transparency of transactions (including transactions in cryptocurrencies⁴)
- Consumer protection and compliance risks are being increased by inexperienced entrants to the market and the intensified competition they bring with them. New rules about data protection (such as the GDPR) and data accessibility (for example PSD2, MiFID, and EPS) will also give more weight to data and conduct-related risks⁵
- As with financial engineering prior to the financial crisis, technological change may create blind spots, where supervisors need time to understand the risks being introduced to the system (which may further increase AML and consumer protection risks)

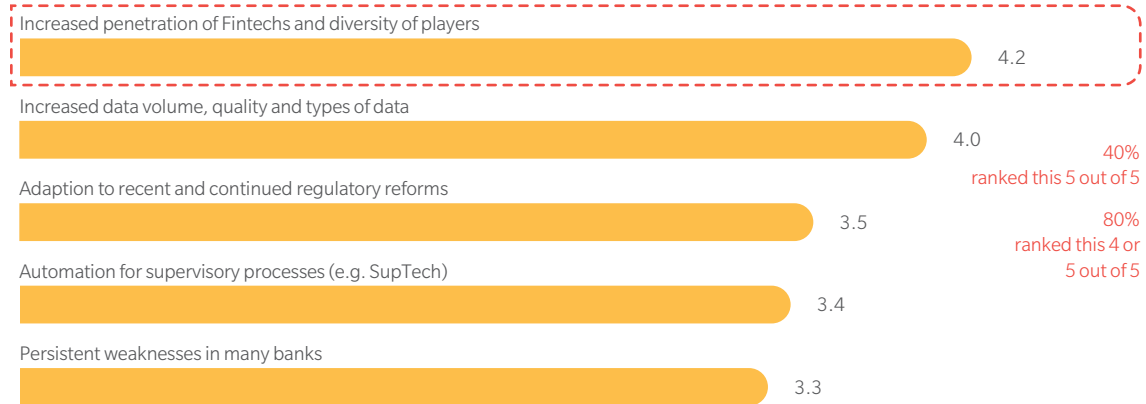
Rising to these challenges will require supervisory agencies to change the way they do things. In most cases, regulatory and institutional frameworks will need to be revised in light of new and evolving risks and industry landscapes. Fragmentation of supervision and regulation across many national and international bodies, each with different priorities, will add to the challenge. In the USA, for example, supervision is divided among the Federal Reserve, FDIC, OCC, SEC, FINRA, CFTC, and state regulators. In the EU, centralized bodies such as the ECB, SSM, ESMA, EIOPA and the EBA share a stage with national competent authorities. In Asia, regulation is developed at a national level and regional coordination is limited.

The Financial Services industry is also developing asymmetrically across regions, placing different demands on supervisors and regulators. In the USA, for example, supervisory agencies face pressures

EXHIBIT 2: TRENDS IN THE FINANCIAL SERVICES INDUSTRY

WHICH TRENDS DO YOU EXPECT TO BE MOST IMPORTANT IN DRIVING CHANGES IN FINANCIAL SUPERVISION IN YOUR JURISDICTION BY 2025?

AVERAGE LEVEL OF IMPORTANCE ACROSS RESPONDENTS* (0 = LEAST, 5 = MOST)



* Other responses: "Geopolitical change", "Asset bubbles/indebteness", "Fragmentation", "Banks competing with non-banks driving up risk profiles"
Source: Oliver Wyman "Future of Supervision" Survey, 2018

to revise regulation to achieve a better balance of costs and benefits; in Europe, there is new pressure to promote competition; and, in Asia and Africa, the priorities are facilitating financial inclusion and supporting sustainable financial sector growth. There is still some public mistrust of the traditional banking system following the crisis, reinforced by recent nationalist movements. And the trend towards "Balkanization", such as the ring-fencing regime in the UK and the IHC structure in the USA, may restrict the level of consensus that can be achieved at supranational level through forums such as FSB or BCBS. However such issues play out, the technological and societal changes underway will have significant economic effects. Capitalizing on them requires a sound financial system. While mandates differ across supervisors, such changes will inevitably demand changes in how they are

structured, not just to oversee industry players but to protect consumers and ensure the financial system contributes to sustainable economic development.

The rest of this report lays out the most likely changes to financial supervisors and regulators, some of which are already being made. We draw on the findings of our recent survey, which asked 20 questions aimed at gauging the risks arising from technological developments, emerging business models and products, and their impact on financial supervision. The survey collected circa 60 individual responses from more than 20 different national and supranational institutions, and 17 different jurisdictions (see appendix for details). Survey responses are aggregated and anonymous; they represent the views of the people responding, not the institutions they work for.

2 See also our domestic industry report: "Modular Financial Services: The New Shape Of The Industry".

3 See also our recent article (published in Harvard Business Review): "How A Cyberattack Could Cause The Next Financial Crisis".

4 See also our recent Q&A report: "Cryptocurrencies and Public Policy".

5 See also our recent White Paper, in collaboration with the World Economic Forum: "The Appropriate Use Of Customer Data In Financial Services".

2. SUPERVISORY FOCUS: FROM ENTITIES TO ACTIVITIES

The financial industry is modularizing, and its boundaries are becoming blurred, as non-bank firms enter the market, competing at selected points along the value chain. Supervisors will need to respond by shifting their focus from entities towards activities – for example, supervising payments rather than payment institutions, or credit provision rather than credit institutions (even if they lie outside the currently regulated perimeter). The goal will be to ensure that economically critical functions can endure shocks, regardless of which entities are performing them. In a way, this will follow an existing trend started in response to what many authorities have referred to as “shadow banking”.

Supervisors will still ensure the health and conduct of individual firms, of course. Maintaining systemic stability and legal accountability requires it. But as our survey suggests, with the relative weight of these two becoming more balanced, a matrix model, covering both activities and entities, is likely to emerge at most supervisors. Half our survey respondents expect supervisory activity to focus as much on horizontal trends as on idiosyncratic factors of firms by 2025. Resources are expected to expand most in horizontal risk analysis, followed by prudential and conduct supervision with an equal weight (see Exhibit 3).

What is overseen within a given entity is also likely to evolve towards building a richer picture. More attention will be paid to staff integrity (culture, conduct, incentives), data governance, and technical infrastructure and know-how, alongside the traditional processes, such as credit decision-making. With increased technology adoption, supervisors will need to ensure the new risks they bring are well understood, governed, explained and integrated in risk management frameworks. And, as

more tasks are automated or outsourced, supervisors will need to seek assurance that firms understand risk, are incentivizing the right behaviors from staff, and can adapt to changing market conditions and consumer behavior. This transition will require supervisors' remits to be systematically reassessed:

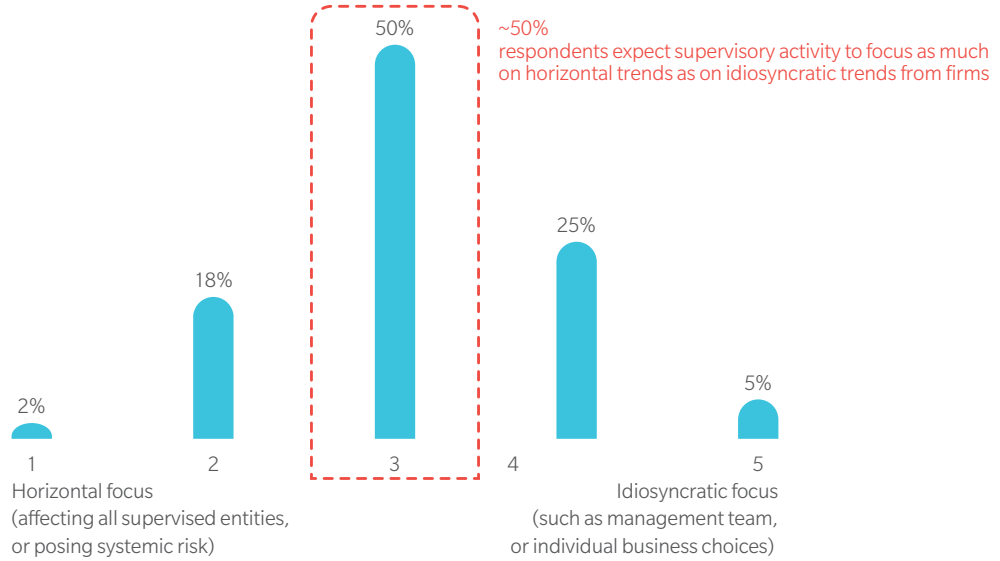
- **Which firms and activities will be in and out of scope?** This will sometimes mean extending the regulatory perimeter to include risks that had been emerging in non-bank activities. In other cases, it might mean enhancing programs within existing authorities to indirectly oversee out-of-scope activities – for example, by requiring supervised firms to manage the risks arising from their suppliers of outsourced services as if they were an internal division
- **Who will regulate and supervise entities within the perimeter?** For example, if perimeters are defined by function, should we separate prudential supervision and conduct supervision? Should supervisors be split by industry (function) or, for example, should telecoms supervisors be given the mandate to supervise mobile payments?
- **What is the role of regulators and supervisors in this changing industry?** For example, how can spurring innovation and competition be balanced with other policy objectives, such as financial stability or consumer protection and inclusion?

These questions will need to be re-asked and re-answered periodically as the industry evolves. The optimal trade-offs – for example, between systemic stability and spurring innovation, or between controlling specific activities and ensuring enough accountability for enforcement – will depend on economic, social, political and technological facts that change over time.

EXHIBIT 3: FOCUS OF SUPERVISORY ACTIVITY

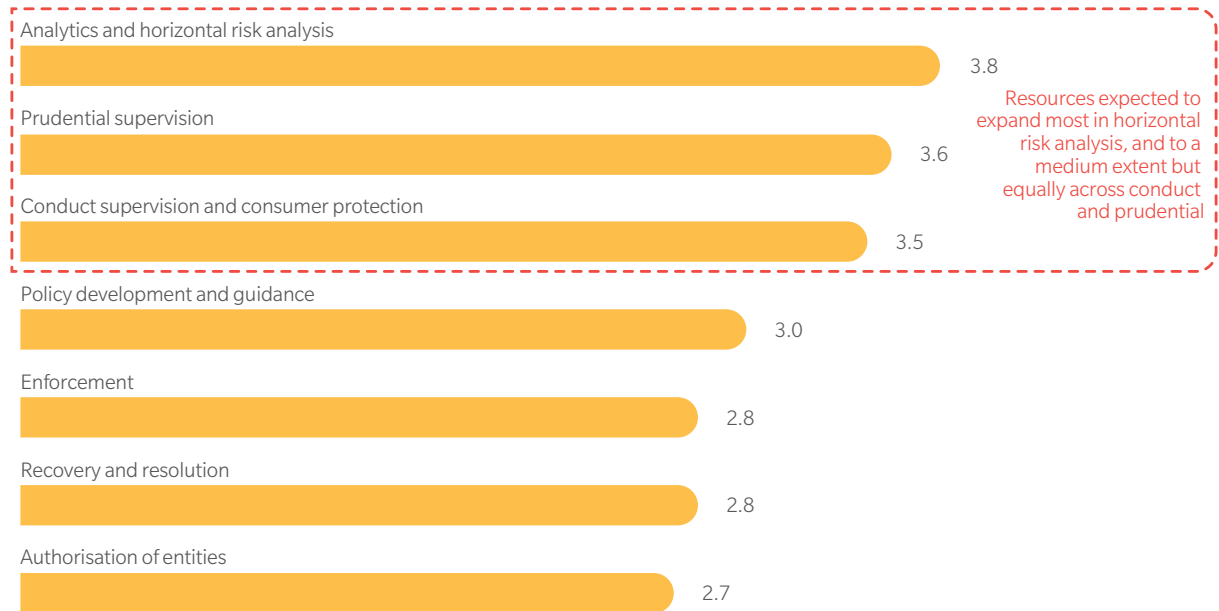
TO WHAT EXTENT DO YOU EXPECT YOUR SUPERVISORY ACTIVITY TO FOCUS ON HORIZONTAL TRENDS (AFFECTING ALL SUPERVISED ENTITIES, OR POSING SYSTEMIC RISK) VS. IDIOSYNCRATIC FEATURES OF BANKS (SUCH AS MANAGEMENT TEAM, OR INDIVIDUAL BUSINESS CHOICES) BY 2025?

% OF RESPONDENTS (OVERALL AVERAGE ACROSS RESPONDENTS: 3.1)



IN WHICH AREAS BELOW DO YOU EXPECT RESOURCES TO EXPAND MOST (ON EITHER A RELATIVE OR ABSOLUTE BASIS) BY 2025?

AVERAGE LEVEL OF EXPANSION EXPECTED ACROSS RESPONDENTS* (0 = LOW, 5 = HIGH)



* Other responses: "IT and Cyber risks" (ranked 4 out of 5, 4 responses)
 Source: Oliver Wyman "Future of Supervision" Survey, 2018

3. NEW APPROACHES TO RISK OVERSIGHT

Two-thirds of our survey respondents expect the current industry trends to change the traditional risk-based supervisory model to at least “some extent” (ranking this 4 or 5 out of 5). Using and combining data to inform supervisory priorities will be the most significant change, with 70 percent ranking this 4 or 5 out of 5 (see Exhibit 4).

Recent technological advances will create an opportunity to enhance risk identification and monitoring. Using advanced data gathering and analysis techniques, this can move to “real-time” monitoring of KRIs and early warning signals, enabling more early intervention on emerging risks. Such “real-time” monitoring will require supervisors to draw on a wider range of data sources (including “alternative” sources such as social media, blogs and industry chat rooms) and to adopt techniques such as machine learning (ML) and analysis. Some are already experimenting with this. For example, the Bank of Italy began exploring the correlation of textual sentiment from twitter posts and the variation of retail deposits⁶, which could be used as an indicator to improve or challenge forecasts of banks' deposits and liquidity. The USA's SEC already uses AI techniques to identify patterns in the text of SEC filings that indicate fraud or misconduct.⁷ On the prudential side, the UK's PRA is demanding that firms have risk management and governance frameworks for algorithmic trading.⁸

Advances in data collection and data analytics are likely to allow supervisors to move from examining

samples to examining entire populations, and from making assessments on the basis of expert judgement of processes to analysis of actual results (perhaps using AI to parameterise and train risk models). Supervisors will not only receive aggregated data from supervised entities but will be able to access micro-level data directly, such as current account behaviour or mobile banking transactions. Data templates for specific exercises will give way to data platforms, where supervisors can extract and interrogate data directly. More than 70% of our survey respondents indicated that they would use digital techniques to some or a large extent for sector risks and market surveillance (see Exhibit 5).

Of course, access to real-time data will not guarantee the quality of supervision by itself. It is especially useful in areas where accuracy and speed matter, such as market surveillance, conduct or AML. But advanced data analyses will still need to be complemented with robust decision-making processes

At a system level, supervisors will likely need to adjust their approaches to defining risk tolerance and the balance of systemic and non-systemic entities. For example, they may need to base evaluations not only on financial ratios but also on the criticality of functions (such as payments, deposit-taking, data storage) and the nature of interconnections a firm or function may have, which can amplify any disruption.

6 See for instance research presentations: https://www.bancaditalia.it/pubblicazioni/altri-atti-convegna/2018-bigdata/Cerchiello_Twitter_Sentiment_Banks.pdf or https://www.bancaditalia.it/pubblicazioni/altri-atti-convegna/2018-bigdata/Moscatelli_Listening_To_Buzz.pdf.

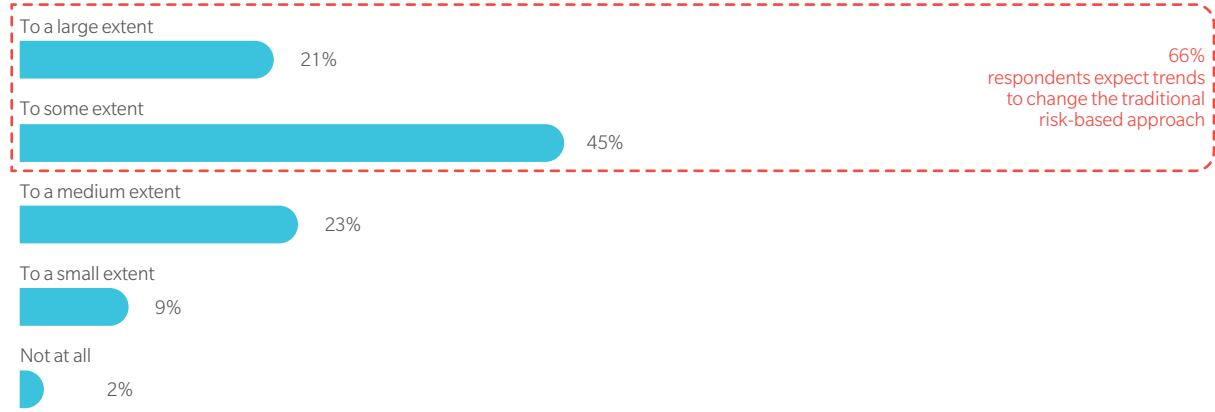
7 See for instance one of the speeches by SEC officials (Acting Director of the Division for Economic and Risk Analysis) at <https://www.sec.gov/news/speech/bauguess-big-data-ai>.

8 The Bank of England issued a supervisory statement laying out its expectations of a firm's risk management and governance of algorithmic trading in June 2018

EXHIBIT 4: EXPECTED CHANGES IN THE RISK-BASED APPROACH

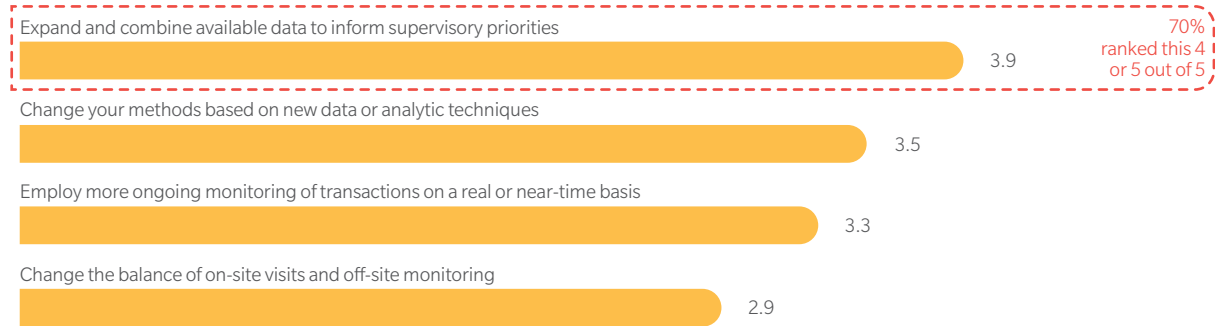
DO YOU EXPECT TRENDS IN FINANCIAL SERVICES (FOR EXAMPLE: INNOVATIVE MARKET ENTRANTS, SHIFTS IN PROVIDERS AND INCREASED INTER-CONNECTIVITY BETWEEN ENTITIES) TO CHANGE THE TRADITIONAL RISK-BASED SUPERVISORY MODEL BY 2025?

% OF RESPONDENTS



REGARDING METHODOLOGICAL CHOICES IN YOUR RISK-BASED SUPERVISORY APPROACH, TO WHAT EXTENT, IF AT ALL, DO YOU EXPECT TO?

AVERAGE LEVEL OF IMPORTANCE ACROSS RESPONDENTS (0 = NOT AT ALL, 5 = TO A LARGE EXTENT)



Source: Oliver Wyman Future of Supervision Survey, 2018

EXHIBIT 5: EXPECTED CHANGES IN RISK IDENTIFICATION

TO WHAT EXTENT DO YOU EXPECT TO USE DIGITAL TECHNIQUES IN IDENTIFICATION AND SUPERVISION OF RISKS BY 2025?

AVERAGE LEVEL OF DIGITAL TECHNIQUES USED ACROSS RESPONDENTS (0 = NOT AT ALL, 5 = TO A LARGE EXTENT)



Source: Oliver Wyman Future of Supervision Survey, 2018

4. COLLABORATING WITH THE ECOSYSTEM

Today's increased pace of change requires a more pro-active approach. Supervisors will need to work with industry players to answer questions such as: What kind of players and technologies are emerging? Which problems are they solving? What additional risks do they bring? And what role should the supervisor play?

This won't come naturally to many supervisors and regulators, and it presents genuine challenges. Supervisors must draw on the knowledge of market participants while avoiding "regulatory capture" by them or subversion of supervisory processes.

A recent BCBS and FSB joint survey on approaches to fintech supervision showed that, in the past two years, at least 15 "innovation hubs" (a place to meet and exchange ideas) were set-up by authorities

world-wide, along with five "accelerators" (boot-camps for start-ups) and seven "Regulatory sandboxes" (forums to test start-ups in a controlled environment).⁹

Each of these programs has specific mandates, not fully comparable across jurisdictions. But they share the aim of facilitating interactions with new fintech and regtech (regulatory technology) players – helping them become operational within the supervisory and regulatory framework, and helping authorities understand the risks and benefits they bring and the potential for adopting their techniques internally. Over 75 percent of our survey respondents expected to form partnerships with supervised entities to develop and test regulations to at least a medium extent (see Exhibit 6).

The UK FCA's "Project Innovate", the USA's CFTC's "Lab Team" and ASIC's "Innovation Hub" are three examples of units dedicated to developing digital capabilities. They help new businesses navigate regulation and supervisory processes, and they promote digitization internally. These interaction forums can also provide a safe environment for market participants to meet and experiment. Beyond "regulatory sandboxes", authorities such as the UK's FCA, the Canadian OSC, Singapore's MAS, UAE's ADGM have all run events that enable diverse groups of fintechns and others (academics, consultants, incumbents) to collaborate and compete on finding technology solutions to specified problems ("tech sprints" or "hackathons").¹⁰

Such collaboration can be extended beyond the financial industry to include, for example, security agencies on cyber threats or other public authorities for data protection or AML. The Bank of England has formed a partnership with cybersecurity firm Anomali to collect, integrate and investigate

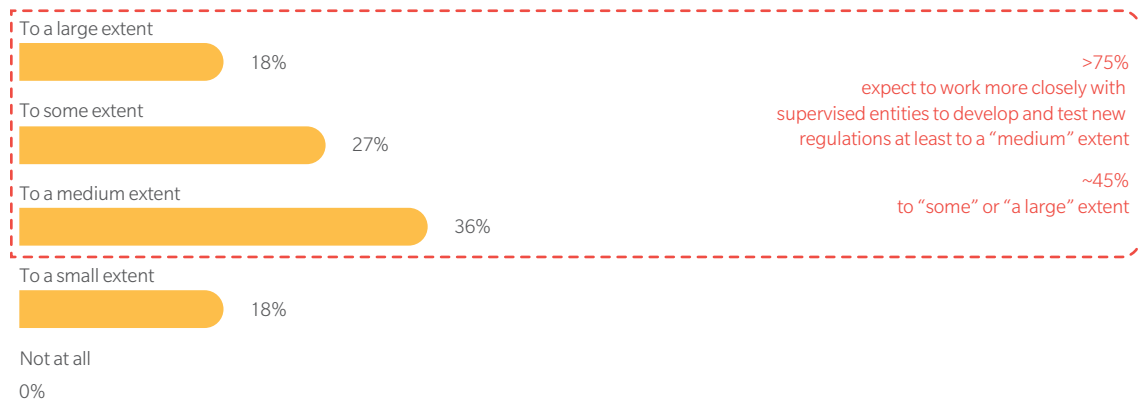
“The transformation will be challenging. The way supervisory agencies are organised, the kind of work they do and the kind of people they employ will need to change. But the result will be agencies better plugged into the activity they supervise and better able to fulfil their economically vital mission.”

MARTIN ANDERSSON, PARTNER, PUBLIC POLICY,
OLIVER WYMAN

EXHIBIT 6: EXPECTATIONS ON INTERACTIONS

TO WHAT EXTENT DO YOU ANTICIPATE WORKING MORE CLOSELY WITH SUPERVISED ENTITIES TO DEVELOP AND TEST NEW REGULATIONS, E.G. IN A SANDBOX ENVIRONMENT?

% OF RESPONDENTS



Source: Oliver Wyman Future of Supervision Survey, 2018

cybersecurity data.¹¹ And Australia's ASIC maintains a partnership with analytics software provider Nux to foster its machine learning and other analytics initiatives.¹²

Ideally, such collaborative networks would be extended internationally. This has been started this

year with the Global Financial Innovation Network (GFIN), a collaboration of 11 financial regulators and related organizations.¹³ Supervisors can learn from the experiences of peers in other jurisdictions, and they can cooperate to facilitate firms' expansion across borders – for example, in licensing or providing regulatory sandboxes.

9 The BCBS and FSB conducted a joint survey to uncover jurisdictions' initiatives to facilitate fintech innovations, summarised in Graph 10 of the recent BCBS report, Implications of fintech developments for banks and bank supervisors. <https://www.bis.org/bcbs/publ/d431.htm>

10 More information can be found at these regulators' dedicated online pages.

11 See Bank of England's press release here: <https://www.bankofengland.co.uk/-/media/boe/files/news/2017/february/boe-works-with-anomali-to-improve-threat-intelligence-capabilities.pdf?la=en&hash=0E76330E264B6E0DF99019A1DE191B4D7CBFCEA3>

12 <https://asic.gov.au/about-asic/news-centre/find-a-media-release/2017-releases/17-262mr-asic-extends-partnership-for-digital-investigation-and-analytics-software/>

13 This was announced in August 2018 by the FCA, building on its earlier proposal to create a "global sandbox". See <https://www.fca.org.uk/publications/consultation-papers/global-financial-innovation-network>.

5. REORGANIZING

Supervisors are likely to reform their organizational structures to reflect the shift in prioritisation from supervising entities to supervising activities. This could mean centralising “front-office” engagement with supervised entities while building specialised teams of activity experts (payments, credit, cyber, and so on). This model is implicit in the dedicated innovation teams emerging at many supervisory agencies. And it is explicit at some regulators that define licensing and associated requirements by the activities the entity wishes to perform.

Our survey suggests a consensus about some of the changes needed to current organizations. Roughly half our survey respondents expect the overall budget and staff costs to increase by at least 5 percent, and 16 percent expect it to increase by more than 15 percent.

Respondents ranked increasing internal structures to support digitization and increasing the level of agility to respond to digital requirements as equal organizational priorities (see Exhibit 7). They also reported plans to establish distinct teams for data automation and collection, operational and tech risk, AML, and understanding the behavioural responses of firms.

Many supervisors are creating centers of competence for data, analytics and technology, and others will likely follow. As examples, the UK’s FCA, Singapore’s MAS, and Israel’s and Denmark’s central banks have established dedicated data and analytics teams. The UK’s FCA and Australia’s ASIC have dedicated RegTech teams. And the CFTC Lab operates an internal group (almost a “think tank”) to share insights gained from the market and discuss how to apply these to CFTC itself.

The skills required by the staff of supervisory agencies will change too. Ninety percent of survey respondents rated technology expertise and 80 percent rated analytical skills as in the highest demand (above 4 out of 5), ahead of policy development or industry

expertise (see Exhibit 7). Automation will reduce the need for staff to perform routine operational tasks. The staff in demand will be problem solvers who can adapt to change, deal with non-routine events, and build constructive relationships with participants in the ecosystem, including supervised entities.¹⁴

People combining these skills are hard to find (whether externally or by upskilling existing staff). To attract and retain them, supervisors will need to keep making their jobs more attractive and purposeful. This could be achieved through a combination of non-monetary benefits such as flexible working, appealing to a sense of social duty, reducing the bureaucratic overhead, and increasing training and development.

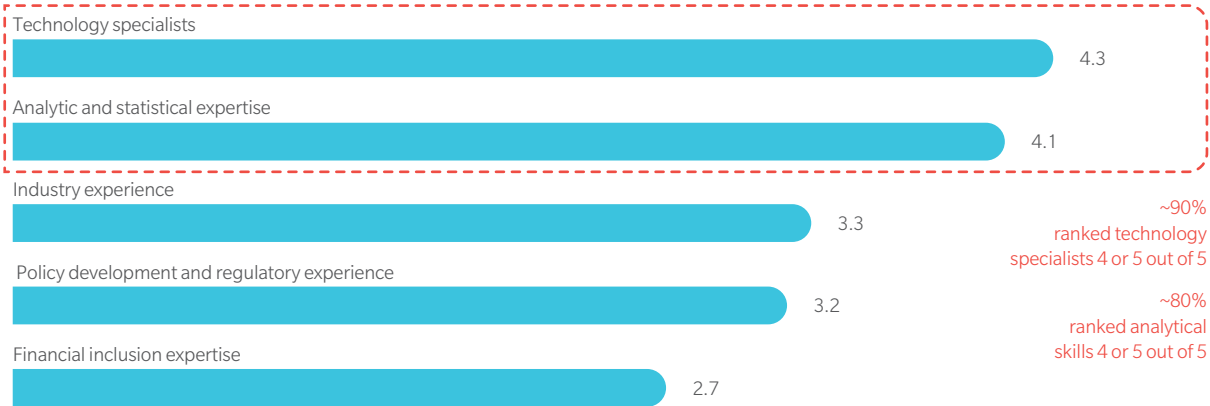
Supervisors can also draw on the skill of outsiders by establishing expert networks, outsourcing certain activities or offering secondments. For example, the Netherlands Central Bank is running a test program (“TIBER”) in a public-private partnership, which involves the deployment of “red teams” from specialised companies to carry out controlled cyber-attacks on live critical systems of participating financial institutions.¹⁵ This allows them to tap into external expertise that simulates real attacker techniques, and allows institutions to train and share their learning from responses within the partnership. In the UK, the Joint Money Laundering Intelligence Task Force (JMLIT) works to develop risk typologies and identify emerging areas of risk for AML.¹⁶

Supervisors are typically hierarchical and bureaucratic organizations. Adopting agile working practices will make supervisory agencies more attractive to new talent.¹⁷ This means having a more flexible, project-based approach to roles and distributing decision making authority more widely through the organization, providing team leaders with more control over day-to-day activities. Information and know-how located in competence centers, innovation teams and the like will need to flow more rapidly through the organization.

EXHIBIT 7: EXPECTED ORGANISATIONAL CHANGES

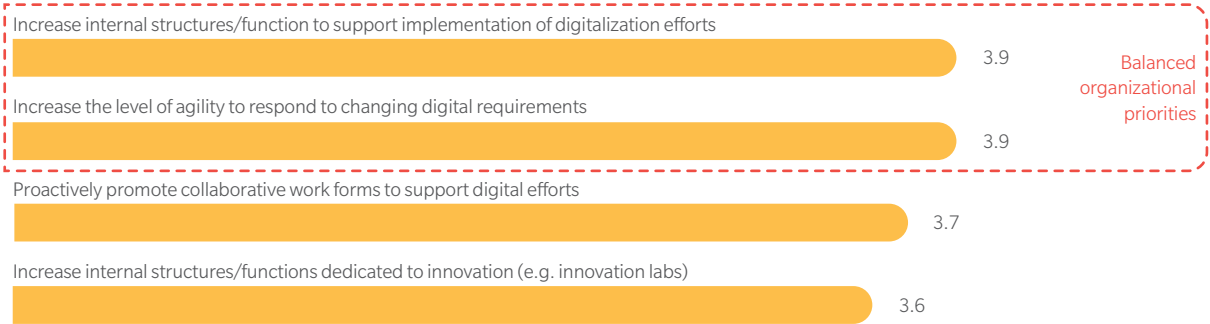
WHICH SKILL-SETS DO YOU EXPECT TO HAVE INCREASED DEMAND FOR IN THE FUTURE?

AVERAGE INCREASE IN DEMAND ACROSS RESPONDENTS¹⁴ (0 = LOW, 5 = HIGH)



REGARDING YOUR CURRENT ORGANIZATION, TO WHAT EXTENT, IF AT ALL, DO YOU EXPECT TO?

AVERAGE LEVEL OF CHANGE ACROSS RESPONDENTS (0 = NOT AT ALL, 5 = TO A LARGE EXTENT)



Source: Oliver Wyman Future of Supervision Survey, 2018

14 This is in fact a broader trend beyond the financial services industry; see our recent reports "Delivering the Workforce for the Future" and "Engaging the Workforce in Digital Transformation".
 15 See recent news update from the Central Bank here: <https://www.dnb.nl/en/news/news-and-archive/DNBulletin2018/dnb379565.jsp>
 16 <http://www.nationalcrimeagency.gov.uk/about-us/what-we-do/economic-crime/joint-money-laundering-intelligence-taskforce-jmlit>
 17 This is also a broader trend than only in Financial Services; see our recent report "Delivering the Workforce for the Future: Open-source Talent".

6. EMBEDDING DIGITAL TECHNOLOGY

Ninety-four percent of our survey respondents expect data receipts to “increase” or “substantially increase”. Accordingly, the areas ranked highest for transformation by 2025 were data infrastructure and storage (ranked 4 out of 5 on average). This will not only allow supervisors to keep track of industry activity but can also be used to make their own processes faster, more accurate and user-friendly.

Today, most of the supervisory processes are data-intensive, repetitive or highly manual which make them prime candidates for technological enhancement. Trade and communications’ surveillance, AML/KYC processes and the submission of regulatory reporting data are key examples.¹⁸ Submitting regulatory returns and regulatory notifications were ranked highest by our survey respondents for their potential to make use of digital interfaces, and machine-readable reporting is the technique most expect to be used (though this is not yet widespread, ranking 3 out of 5 on average).

Steps are already being made in this direction, with the emergence of integrated data utilities and digital interfaces with supervised entities. In Austria, the

Central Bank has partnered with commercial banks to create a common software platform for regulatory reporting.¹⁹ And the ECB has established AnaCredit, a central platform that collects data on individual loans across EU member states.²⁰

Technology will also enable authorities to improve internal processes for improved accuracy, decision-making and lower operating costs – for example, by the use of automated workflow tools (which updates entities’ profile information and calculates risk ratings and annual levies) or reporting tools (which supports Board operations and meetings). To encourage technology adoption, authorities may need to revise processes to allow experimenting with technologies, and then selecting what works, rather than going through traditional procurement processes. Overall, the authorities need to craft and adopt a Supervisory Technology (SupTech) strategy with focused activities to benefit from these changes.

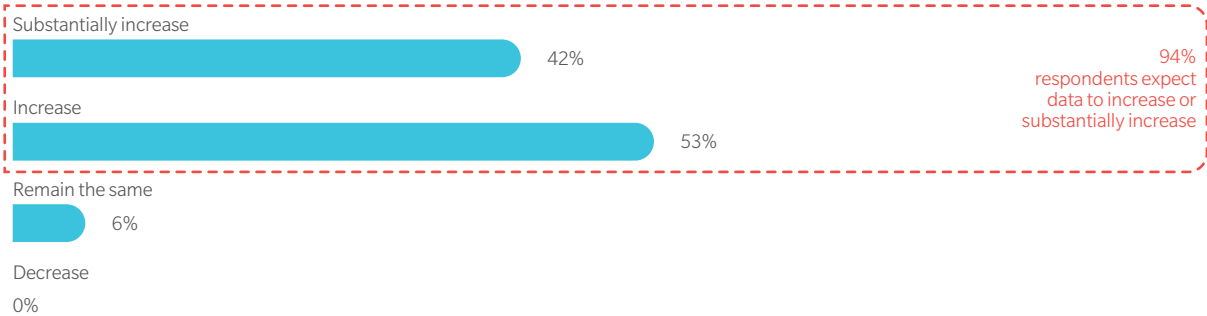
“These are interesting times. A number of supervisory Authorities have embraced the challenge and are moving fast; others can learn from them and rapidly become future proof.”

ANDREA FEDERICO, PARTNER, HEAD OF PUBLIC POLICY EMEA, OLIVER WYMAN

EXHIBIT 8: TRANSFORMATION IN TECHNOLOGY AND DATA ANALYTICS

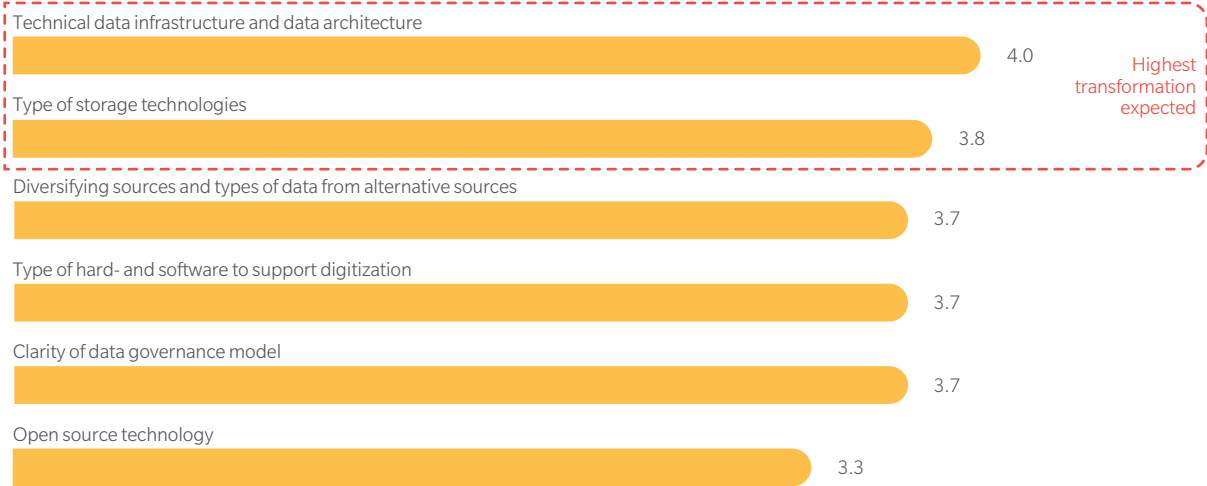
TO WHAT EXTENT DO YOU EXPECT THE DATA YOU ARE CURRENTLY RECEIVING TO INCREASE BY 2025?

% OF RESPONDENTS



REGARDING YOUR CURRENT TECHNOLOGY AND ANALYTICS, TO WHAT EXTENT DO YOU EXPECT A TRANSFORMATION BY 2025?

DEGREE OF TRANSFORMATION (0 = LOW, 5 = HIGH)



Source: Oliver Wyman Future of Supervision Survey, 2018

18 See also our recent article (published in Harvard Business Review) "The Risks And Benefits Of Using AI To Detect Crime".
 19 <https://www.aurep.at/>
 20 <https://www.ecb.europa.eu/explainers/tell-me-more/html/anacredit.en.html>

7. CONCLUSION

Financial supervisors and regulators face complex challenges as the industry evolves at an increasing pace. Technological advances, changing customer preferences, new business models, and major regulatory initiatives are contributing to the vertical unbundling of traditional value chains and the blurring of regulatory perimeters. These trends bring in new risks and additional challenges for supervisors. But they also represent opportunities to rethink the current supervisory model, remove

inefficiencies and create a nimble, intelligence-led approach to supervision.

Many have started moving in this direction already, but they still have a long way to go. We expect the remit and practices of supervisors to change significantly over the next decade. While implementing change is always challenging, starting this journey now will allow the supervisor of 2025 to keep pace with a rapidly evolving industry.

GLOSSARY

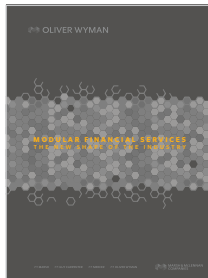
- AI – Artificial Intelligence
- AML/CFT – Anti-Money Laundering/Counter-terrorism financing
- ASIC – Australian Securities and Investments Commission
- BCBS – Basel Committee on Banking Supervision
- CFTC – Commodity Futures Trading Commission (USA)
- EPS – Enhanced Prudential Standards (USA)
- EBA – European Banking Authority
- ECB – European Central Bank
- ESRB – European Systemic Risk Board
- EU – European Union
- FCA – Financial Conduct Authority (UK)
- FDIC – Federal Deposit Insurance Corporation (USA)
- FINRA – Financial Industry Regulatory Authority (USA)
- FS – Financial services (industry)
- FSB – Financial Stability Board
- GDPR – General Data Protection Regulation (EU)
- KRIs – Key Risk Indicators
- KYC – Know-Your-Customer
- MAS – Monetary Authority of Singapore
- MiFID – Markets in financial instruments directive (Directive of the European Union)
- ML – Machine learning
- NCAs – National Competent Authorities (national supervisors within EU, other than SSM)
- OCC – Office of the Comptroller of the Currency (USA)
- OSC – Ontario Securities Commission (Canada)
- P2P – peer-to-peer (often designating peer-to-peer lending)
- PSD2 – Payment Services Directive 2 (Directive of the European Union)
- SEC – Securities and Exchange Commission (USA)
- SSM – Single Supervisory Mechanism
- US or USA – United States of America
- UK – United Kingdom

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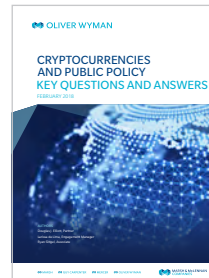
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