



FINTECH

NOTES

BigTech in Financial Services: Regulatory Approaches and Architecture

Parma Bains, Nobuyasu Sugimoto, and Christopher Wilson

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Abstract¹

BigTech firms are gradually entering the financial sector and becoming important service providers, particularly in emerging markets. BigTechs have entered financial services using platform-based technology to facilitate payments and more recently expanded into other areas, such as lending, asset management, and insurance services. They accumulate data from their nonfinancial and financial activities and draw on consumer data held in different parts of their business (such as via social media). BigTechs are applying new approaches to existing financial services products and services such as underwriting using big data and are also applying machine learning for their key business decisions, such as pricing and risk management across multiple financial sectors. Incumbent financial firms have also increased their reliance on BigTech firms to host core IT systems (for example, cloud-based services, which have the potential to improve efficiency and security). This rapid and significant expansion of BigTechs in financial services and their interconnectedness with financial service firms are potentially creating new channels of systemic risks.

To achieve effective implementation and multiple objectives of financial regulation and supervision, a hybrid approach, combining a mix of entity- and activity-based approaches, is needed. Home supervisors should establish an entity-based approach to cover the global activities of a BigTech group, while host supervisors could in principle address local risks and concerns mainly through activity-based regulations. Cross-sector and cross-border cooperation are key in determining the future of the regulatory architecture. However, it can take several years before regulators have achieved a sufficiently robust legal and regulatory framework to address all risks arising from BigTech in financial services, and short-term solutions may be needed. In the interim, regulatory authorities should actively use all existing regulatory powers to manage risks, while BigTech should adopt and improve governance frameworks through industry codes of conduct and enhanced disclosures. Options should be explored to promote global consistency in the treatment of BigTechs, through existing or new global bodies with a broad mandate. We recommend that the 2012 Principles for the Supervision of Financial Conglomerates be reviewed to address regulatory gaps.

¹ This note was prepared by Parma Bains, Nobuyasu Sugimoto and Christopher Wilson, with inputs from Fabiana Melo and Anastasiia Morozova (all MCM).

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I. Executive Summary

Fintech is changing the ways in which financial services are delivered, and rapid advances in technology pose new challenges to financial regulation. Fintech developments have typically been characterized by the unbundling and decentralization of services, rapid changes of technologies and business models, strong economies of scale and cross-border and cross-sectoral expansion, and a focus on retail services. These developments present challenges for regulators: Traditionally, entities are granted permission to provide financial services based on a supervisory assessment where they need to meet certain minimum standards. Therefore, financial intermediation has traditionally been provided by regulated financial service firms, and regulation is put in place to mitigate excessive risk taking. Fintech has upended this traditional link between provision of financial services and regulation of risk taking. Regulatory authorities have aimed at safeguarding financial stability while not stifling innovation and more recently have focused on the challenges brought on by BigTech.

With strong and diverse business models, BigTechs are increasing their presence and market share in financial services. These larger firms are able to utilize their existing user base and big data; advanced analytical technologies, such as artificial intelligence and machine learning; cross-subsidization; and economies of scale to deliver new technologies and innovative products and services. In particular, BigTech firms benefit from competitive advantages stemming from the so-called data analytics, network externalities, and interwoven activities loop (Crisanto, Ehrentaud, and Fabian 2021). This business model enables BigTech firms to quickly increase their market share in financial services and become, directly or indirectly, important players in financial intermediation.

The expansion of BigTech into financial services has the potential to bring both benefits and risks (Adrian 2021). The presence of BigTech entities in a market can potentially increase financial inclusion, lower costs of products and services, and create greater consumer choice in the short term. However, BigTech expansion in financial services has the potential to create risks to financial stability in three broad ways: (1) by carrying out several activities that increase risk when carried out cumulatively, (2) through operational interconnectedness with financial incumbents, and (3) through financial interconnectedness with financial incumbents. In addition, BigTech expansion to financial services is creating risks from the unique combinations of financial and nonfinancial services. Even if traditional financial risks may not be material in their global business model, other risks (such as concentration, contagion, and reputation risks) when combined may have systemic implications in local financial markets.

The Bali Fintech Agenda (BFA)² provides a framework for regulatory authorities to help them harness the benefits of fintech while mitigating risks. The BFA consists of 12 policy elements that can help authorities capture the benefits that BigTech operations can bring into financial markets, such as embracing the promise of fintech; ensuring open competition and a commitment to open, free, and contestable markets; fostering fintech to increase financial inclusion; and developing robust financial and data infrastructure to sustain those benefits. It can also guide authorities toward mitigating the risks of BigTech by better monitoring developments in the market, adapting regulatory frameworks for the stability of the financial system, and encouraging regulatory cooperation across borders.

Financial regulators need to consider both short- and long-term impacts on the provision of financial services. The impact of BigTech on incumbent financial firms is mixed so far: In some cases, BigTech is disrupting markets, and in others, it is partnering with incumbents. Experience suggests that regulatory approaches that allow for the emergence of fintech start-ups across jurisdictions foster competition in the short term. However,

² International Monetary Fund and The World Bank staff developed the agenda in 2018 (International Monetary Fund [IMF] and The World Bank 2018).

the same regulatory environment may favor the participation of BigTechs in financial services, allowing them to leverage new data sets and their own proprietary data to promote cross-subsidization and potentially lead to monopolistic structures that could hinder competition in the long term. Careful consideration of longer term effects is needed to develop new, or adjust existing, regulation to provide a level playing field for incumbents, fintech start-ups, and BigTech, while mitigating risks to financial stability, market integrity, and consumer protection.

To achieve these policies in the long term, a hybrid approach to regulation is needed whereby home supervisors establish entity-based regulation complemented with host supervisors employing activity-based regulations. The entity-based approach allows the regulatory framework to be principle based, flexible, and proportionate to the risks of the entity and its wider group. The activity-based approach may facilitate a level playing field by applying specified rules equally to all firms in a given activity. In most jurisdictions, an entity-based approach is deployed for prudential regulation, whereas an activity-based approach is more common for market conduct regulation. BigTech business models are creating new complex risks, and neither of these approaches on their own can fully address the potential risks associated with the global reach of BigTechs. A hybrid approach is indispensable to address the risks of BigTechs, where home supervisors establish a proportionate entity-based regulatory approach to cover BigTech as a group, while host supervisors apply an activity-based approach supplemented with additional groupwide supervision by the home. Broader coordination with nonfinancial regulators and competition authorities will be required, particularly for home regulators, to mitigate systemic risks generated from BigTech activity.

Even though there are several options to implement regulations for BigTech, implementation is not straightforward. While new regulatory frameworks may be warranted for BigTech (such as entity-based regulation that reflects the unique risks of BigTech for home regulators), it will likely be several years before legal and regulatory adjustments are concluded.³ In the interim, regulatory authorities should actively use all available existing regulatory powers. For example, financial regulators could undertake indirect supervision through regulated entities in the group and by proper implementation of nonbank and conduct regulations. It will be important to actively coordinate with other authorities to prepare and address risks of potential entrance of BigTech in multiple jurisdictions, activities, and business lines. Meanwhile, BigTechs should be encouraged through public-private collaboration to adopt and improve governance frameworks through industry codes and enhanced disclosure.

Options should be explored to promote global consistency in the treatment of BigTechs through existing or new global bodies. Any international coordination body would need to have a broad mandate to address some of the issues discussed here, especially those that lie outside the remit of the financial sector standard setters. We recommend that the 2012 Principles for the Supervision of Financial Conglomerates be reviewed to address regulatory gaps and mitigate new risks (including systemic risk) arising from conglomerates, such as BigTech groups.

³ Promising work on data policy has begun (Carriere-Swallow and Haksar 2019; Haksar and others 2021).

II. BigTech in Financial Services—Key Elements

There is no agreed-upon definition of BigTech,⁴ but generally, these platform-based business models focus on maximizing interactions between a large number of mainly retail users. BigTech entities are typically large technology conglomerates with extensive customer networks and core businesses across markets, for example, in social media, internet search, and e-commerce. An outcome of their operation is the creation, capture, storage, and utilization of user data. This data drives a further range of services that generates even greater user activity and, ultimately, the creation of more data.

BigTechs rely on these strong network effects to grow their business and services. These services generate network effects through interaction, user activity, and the generation of ever greater amounts of data. The more users interact with the services offered by BigTechs, the more attractive the services become to other users. The data can be sold to third parties or analyzed in-house to improve existing services or generate new service propositions and additional revenue streams.

The use of technology in financial services to generate innovation has, in many countries, been driven by smaller firms, better known as financial technology (fintech) start-ups. Initially, fintech start-ups were the key drivers of innovation in financial services, unbundling services by large financial institutions and delivering greater consumer choice. These fintech start-ups have driven innovation in areas such as payments, credit referencing, asset management, and insurance services. Many of these start-ups have benefited from regulations intended to foster competition (for example, the European Union's Payments System Directive and various regulatory sandboxes). However, fintech is not just provided by start-ups; it can also be provided by financial incumbents, especially through partnership with fintech start-ups.

More recently, the expansion of BigTech into financial services has been observed. In many circumstances, major fintech start-ups that achieve scale have been acquired by BigTech groups and continue to offer innovative financial services through BigTech platforms. While the emergence of fintech already presented challenges to the regulatory and supervisory community to promote the safety and soundness of the financial system, the entrance of BigTech in financial services brings additional layers of complications given its characteristics (Table 1).

Large technology conglomerates utilize their existing user base, cross-subsidization, and economies of scale to deliver new technologies and innovative products and services. The key aspects that distinguish BigTech from fintech start-ups are the number of users, the number of jurisdictions in which they operate, and the revenue and scope of activities. Fintech delivered by BigTech tends to be more impactful on the market given the size of the entities. It can drive greater change and bring new ideas and technologies to market faster, more cheaply, and with greater coverage and availability than incumbent financial institutions.

BigTech expansion to financial services shows unique characteristics, especially when compared to the entry of fintech start-ups. The entry of fintech start-ups into financial services has normally been characterized by the unbundling and decentralization of services, rapid changes of technologies and business models, a strong economy of scale, a predominant retail and small- and medium-sized enterprises (SME) focus, and a clear cross-border and cross-sectoral expansion. BigTech's expansion to the financial sector reverses the first two characteristics: unbundling and decentralization.

The COVID-19 pandemic has accelerated the trend toward digitalization of retail financial services and changes in market structure. During the pandemic, most market participants have attempted to adopt a more online business model. In turn, the pandemic strengthened the role of BigTechs, larger fintech-driven

⁴ The Financial Stability Board defines BigTech as "large companies with established technology platforms" (Financial Stability Board [FSB] 2019). In addition, the Financial Stability Institute has defined BigTech as "large technology companies" (Crisanto, Ehrentaud, and Fabian 2021).

firms, and digitally prepared incumbents. Market shares of BigTechs and larger fintech-driven firms increased during the pandemic at the expense of smaller fintech start-ups and less digitally prepared incumbents. These changes in market structure result in benefits and risks. Benefits include improved financial inclusion for underserved populations, cost savings, and efficiencies leading to improved consumer welfare. Risks include consumer abuse owing to low levels of financial literacy, potential monopolistic behavior, and financial instability.

The pace and scale of BigTech expansion within financial services has the potential to create risks to financial stability in three broad ways: (1) through expansion across financial services sectors carrying out several activities that in isolation might not create systemic risk but can increase risk when carried out cumulatively, partially due to lack of effective cross-sectoral regulation; (2) through interconnectedness with financial incumbents (for example, between loan-originating BigTech and commercial banks that are providing funding); and (3) through the provision of single systemically important activities like the cloud or systemic payments infrastructures. Taken together, these three risks can create scenarios where BigTech becomes “too big to fail.”

REVERSING THE UNBUNDLING—FASTER, HIGHER, STRONGER

New technologies have enabled fintech start-ups to unbundle financial services by taking part in a small number of activities. These include payments, account aggregation, lending, saving, and so on. These start-ups utilize a low-cost base, a lack of legacy systems, and new technologies to deploy these individual products or services globally, which has allowed them to achieve rapid growth. This generally increases competition in financial services and provides consumers with greater choice and, often, cheaper and more tailored products.

BigTechs have access to large proprietary data sets as well as the experience, talent, and technology to control and act on large data sets, which have allowed them to reverse the unbundling delivered by fintech start-ups. BigTechs already have a large global user base through the provision of products and services outside of financial services, such as e-commerce, social media, instant messaging, and telecommunications. BigTechs can leverage these data sets more cheaply and in a more tailored way with the benefits that cross-subsidization and economies of scale can bring. BigTechs can use their knowledge of consumer preferences obtained through their other business areas, such as consumer spending habits and credit worthiness, to offer financial services to customers who may be underserved by traditional lenders. These advantages are leading to BigTechs reversing the unbundling that fintech start-ups have achieved, providing a wide range of financial services within the group. The economic and social benefits of financial deepening, such as encouraging financial inclusion, can be compelling in the short term, but bundling can also limit consumer choice in the long term.

The expansion of BigTech into financial services has initially been focused on payments and proprietary systems but has gradually incorporated companies and services. Payments form an important component in the core services offered by BigTechs. Digital payments are a significant growth area in financial services in general, and many BigTechs had existing platforms that could be utilized to quickly offer digital payment services to a large user base (for example, Facebook Pay). Some BigTech entities (like Amazon and Alibaba) began operations as e-commerce platforms that bring together buyers and sellers, and so expanding into payments was a natural progression. Additionally, in some jurisdictions, for many years payments regulation has been focused on supporting new entrants, ultimately facilitating the entrance of BigTechs. BigTechs have developed their own proprietary systems in financial services but have also acquired smaller fintech

start-ups. In 2020, BigTechs invested over \$2 billion in fintech companies, with Google's parent Alphabet alone generating 23 fintech investments.⁵

BigTechs are able to leverage their knowledge of consumer preferences through their other business areas, as well as consumer spending habits and credit worthiness, to offer lending services to customers who may be underserved by traditional lenders. This can be useful in countries where consumers might lack documentation to prove income or creditworthiness or where otherwise traditional credit information might be less reliable. Moreover, BigTechs can utilize existing relationships with SMEs, as well as knowledge of their business obtained through core services (such as providing an e-commerce platform for these firms), to provide lending services to entities that incumbent financial institutions might consider risky. BigTech lending to SMEs is largest in Asia but is gaining traction globally.

BigTechs are achieving a level of integration across sectoral services that could be more attractive to users than the "one-stop service" offered by traditional financial conglomerates. Traditionally, financial service providers that offered only limited services (such as lending firms) and limited integration of cross-sectoral services were not attractive to customers. Even though traditional financial conglomerates have sought to provide multiple services at one stop, data sharing and integration of services have often been limited to each sector and service. While BigTechs still form a relatively small part in the total provision of payments, insurance, and lending, strong network effects and a large existing base mean their share in each sector can rapidly grow with much higher integration and the provision of attractive services across the sectors.

Proposed BigTech-led initiatives such as so-called global stablecoins could expand BigTech coverage in this space further. Given the large existing user base and potential for strong network effects, the launch of new initiatives in the payments space could lead to products and services that might be potentially systemic at launch. In addition, in low-income and emerging markets, stablecoins issued by BigTech and denominated in advanced economies' hard currencies could become attractive as investment products. Where these initiatives are based on closed networks with high barriers to entry or limited ability for others to participate, such initiatives could lead to greater market power for infrastructure owners/administrators and fragmentation of existing payment infrastructures (FSB 2020).

Insurance is another sector within financial services where BigTechs have naturally expanded and where they may have several competitive advantages. They are able to build on existing services of product protection and warranties provided in core operations and use these experiences to offer tailored insurance products, competing with (and at times partnering with) established insurers and newer InsurTechs. BigTechs often have several competitive advantages when it comes to the provision of insurance. For example, they are able to leverage access to proprietary data from social media, chat functions, and other businesses that allow them to better determine risks of consumers and firms in ways that financial incumbents and fintech start-ups aren't able to do. Importantly, research suggests that consumers are increasingly more likely to purchase insurance from BigTechs, with the share of consumers growing from 27 percent to 44 percent between 2016 and 2020 (World InsurTech Report 2020).

⁵ For example, the 2021 acquisition of Pring, a Japanese payments processor, is the latest in a line of payments acquisitions, including Softcard, Zetawire, and TxVia, providing Alphabet with a stronger presence in payments networks and payments technology.

BOX 1. Different Trends of BigTech Expansion into Financial Services

The expansion of BigTech into financial services has occurred simultaneously in different countries, although in different ways. In advanced economies, the expansion tends to focus on payment and lending services where other nonbank entities are also actively expanding. Robust and comprehensive regulation in banking and insurance services seems to be a factor behind this route of expansion. In emerging markets, the scope of BigTechs' expansion seems to be wider and includes banking, insurance, and investment services.

In the United States, BigTechs with large market capitalization are expanding payment and credit business both domestically and globally. Entities like Alphabet, Amazon, Apple, Meta, and Microsoft have all expanded into financial services, with the largest presence in payments and credit. Three of these firms (Alphabet, Amazon, and Microsoft) also provide cloud services for regulated entities. In other advanced economies, BigTech expansion is still in early stages. In Japan, entities like NTT docomo and Rakuten are entering financial services, such as payments, securities, and insurance, although at a slower pace compared with the United States.

In China, BigTech has a greater presence in financial services across banking, payments, lending, insurance, and investment. BigTech operations in financial services are more established and of greater systemic importance since these entities often provide direct financial services to retail customers but also partner extensively with commercial banks. Alibaba (through Ant Group), Tencent, and Baidu are the Chinese BigTech entities with greatest reach.

In other emerging markets, BigTech is also making inroads into financial services in South America (through Mercado Libre) and in east Africa and the Indian subcontinent through telecommunications firms Safaricom and Jio. In all these instances, BigTechs are able to outcompete smaller fintech start-ups and sometimes benefit from regulatory frameworks that allow them to outcompete incumbent financial institutions.⁶

INTERCONNECTEDNESS

When providing consumer loans, some BigTechs are partnering with commercial banks. While BigTechs can compete with financial institutions, in most cases a cooperative arrangement is observed, particularly in low-margin banking services. This has allowed BigTechs to gather further customer data and open new revenue streams, while allowing fintech start-ups and incumbents to connect with new customers. BigTechs leverage their large user base to deliver consumer lending to individuals who might be underserved or excluded, with the potential effect of improving financial inclusion. BigTechs can reduce their risk exposure by delivering loans in conjunction with a commercial bank and by providing only the consumer interface. Commercial banks may also benefit from a more diversified loan portfolio with different segments and locations of clients. Another example includes the proposed Diem Network, in which Meta plays a potentially key role as a network member and wallet service provider, but financial institutions are partners that fulfill critical functions, such as issuance, redemption, and market making.

However, partnership arrangements could create moral hazards and result in excessive risk taking by BigTech lenders. In some cases, the direct risk exposure of BigTechs compared to the commercial bank may look very small. Some examples indicate BigTech participation to be as low as 2 percent of a loan, where

⁶ For further reading regarding BigTech expansion into financial services, see two publications by the FSB: *BigTech in Finance: Market Developments and Potential Financial Stability Implications* (FSB 2019) and *BigTech Firms in Finance in Emerging Market and Developing Economies* (FSB 2020).

98 percent of the loan, and risk, is borne by the partnering commercial bank. BigTechs can also charge transaction fees to the commercial bank, which further increases their share of the revenue while keeping risk exposure to a minimum. In such arrangements, BigTechs could have biased incentives to increase the volume of lending with lower credit quality if commercial banks don't conduct proper credit risk management and establish appropriate data and loss-sharing arrangements.

Interconnections in the investment space can also give rise to systemic risk. The provision of money market funds (MMF) is an area that has seen significant BigTech interest in recent years, particularly in east Asia. MMFs are required to invest customers' funds in high-quality and short-term assets such as short-term government bonds or other highly rated issuers' bonds. In the second half of the last decade, with interest rates at historic lows, some MMFs offered by BigTechs began offering higher returns than bank deposits. Those products are generally integrated into payment services, where excess balances are automatically allocated to MMF investments and users can easily shift back and forth between using the balance for payment or MMF investments.

BigTech-related MMFs in emerging markets are exposed to additional risks. BigTech services that integrate payment and MMF seamlessly allow the investors to quickly withdraw cash on demand and pay for goods and services. However, assets invested by MMFs may not be as liquid as cash and highly liquid securities, even in advanced economies. Thus, the product is exposed to higher liquidity mismatch risks than those of advanced economies. In addition, safety nets, such as central bank liquidity facilities and deposit insurance, are generally not available to MMFs offered by BigTechs. Retail MMF investments integrated with payment services, which require full and immediate redemption to cash, can create new risks and contribute to concerns around contagion and interconnectedness, a key reason why regulatory authorities have begun tightening their rules around the practice.

Systemic risk can also arise from the increasing interconnectedness of BigTech with other market participants such as financial market infrastructures (FMIs) and central counterparties (CCPs). Payment systems and investment services developed and operated by BigTechs could have increasing exposures and potential contagion to FMIs and CCPs. For example, Alipay and WeChat Pay are interconnected with NetsUnion Clearing Corporation in China, and Google Pay has a direct connection with Unified Payments Interface and Immediate Payment Service in India.

CONCENTRATION OF CLOUD SERVICES

The cloud is the virtual delivery of computing services, including servers and storage, analytics, and intelligence, and poses unique systemic risks given the industrywide services provided. It powers many services that consumers take for granted, such as content streaming (including music and television), media storage on smartphones, and online games. It also powers the operations of entities across financial services, including banks, insurers, investment managers, and start-ups.⁷ There are normally three general functions of the cloud: software as a service (SaaS), infrastructure as a service (IaaS), and platforms as a service (PaaS). SaaS allows the hosting and delivery of applications that are managed by third-party vendors; IaaS allows access to storage, networking, and virtualization; and PaaS provides software and hardware applications that the user can build upon. The Bank of England, in a 2020 survey, estimated that more than 70 percent of banks and 80 percent of insurers rely on just two cloud providers for IaaS (Bank of England 2020). Globally, 52 percent of cloud services are provided by just two BigTechs, while over two-thirds of services are provided by the top four BigTechs (Richter 2021).

This concentration highlights the reliance of the financial sector on the services provided by BigTechs. Interruptions or delays in the service have the potential to create large-scale issues in financial services.

⁷ For a comprehensive discussion of cloud employment in financial services, see *Cloud Computer: A Vital Enabler in Times of Disruption* (Pujazon and Carr 2020).

The failure of a service or one of these firms could create a significant event in financial services with poor outcomes for markets, consumers, and financial stability. Cloud services are also provided to nonfinancial sector firms, and in these sectors the provision of cloud is also deeply concentrated. Operational disruption of large cloud service providers could have material contagion impacts not only to the financial sector but also to the wider economy. There is clear concentration in critical services provided by BigTechs to financial institutions and the potential for excessive reliance on a small number of cloud providers without viable alternative options. The importance of these services means that, in some respects, BigTechs are already “too big to fail.”

Table 1. Key Risks of BigTech

TYPE OF RISK	IMPACT OF BIGTECH
Financial stability	<ul style="list-style-type: none"> • Expansion across financial sectors carrying out several activities that in isolation might not create systemic risk but can increase risk when carried out cumulatively • Interconnectedness with financial incumbents • Carrying out a single systemically important activity, such as cloud provision or operating payments infrastructure
Consumer protection	<ul style="list-style-type: none"> • Reduced consumer choice through “rebundling” • Market dominance that could lead to innovation being replaced by markups • Lack of appropriate disclosure of activities, partnerships, or regulatory protection • Free/cheaper services provided through capturing/storing consumer data
Market integrity	<ul style="list-style-type: none"> • Challenges of regulation, supervision, and enforcement <ul style="list-style-type: none"> » against BigTechs located in other jurisdictions » against BigTechs with core businesses in nonfinancial sectors (for example, e-commerce)
Financial integrity*	<ul style="list-style-type: none"> • BigTech platforms that could facilitate cross-border fraud, theft, and money laundering • End-user unawareness where BigTechs operate blockchain-based propositions

Source: IMF staff .

* Financial integrity risks are beyond the scope of this paper, but for completeness some of the key impacts on financial integrity of BigTech expansion to financial services have been added.

III. Key Considerations in Regulatory Approaches

The Bali Fintech Agenda is a framework for helping authorities harness the benefits of new technologies and business models while mitigating risks. In relation to BigTech, several BFA policy elements are particularly important. Policy Element I (embracing the promise of fintech) and Element II (enabling new technologies to enhance financial services provision) speak to the potential benefits BigTech can generate. Policy Element III (reinforcing competition and commitment to open, free, and contestable markets), Element IV (ensuring the stability of domestic monetary and financial systems), Element VI (adapting regulatory frameworks and supervisory practices), and Element XI (encouraging international cooperating and information sharing) can all be used as guidelines to mitigate against the risks generated by BigTech.

A robust regulatory framework should lay the foundation for effective supervision of financial institutions, and while approaches differ across jurisdictions, two approaches are prevalent: entity-based regulation and activity-based regulation.

- **Entity-based approach** is when regulations are applied to licensed entities or groups that engage in regulated activities (such as deposit taking, payment facilitation, lending, and securities underwriting). Requirements are imposed at the entity level and may include governance, prudential, and conduct requirements. Implementation of those regulations is supported by a number of supervisory activities (such as offsite monitoring and onsite inspections). The entity-based approach can be built on principle-based regulations that allow more flexibility, relying on governance arrangements and oversight. Importantly, a continuous engagement between supervised firms and supervisors allows for the monitoring of the buildup of risks and the evolution of business models. Supervisors normally have a range of early actions that can be taken to modify firms' behavior that could lead to excessive risk taking and instability. Supervisors can take enforcement actions (such as fines and revocation of licenses), but there is usually a ladder of interventions to achieve supervisory goals.
- **Activity-based approach** is when regulations are applied to any person or firm that engages in certain regulated activities, for example, facilitating the buying and selling of investments or operating lending activities. Those regulations are typically used for market conduct purposes and are generally prescriptive, and compliance is ensured by fines and other enforcement actions. Many regulations prohibit certain activities under specified conditions. In some respects, the activity-based approach may encourage competition by requiring that only relevant regulatory permissions are needed to carry out certain activities. However, the approach needs to define activities very precisely, which could create regulatory arbitrage opportunities—and may not be able to capture rapidly changing fintech activities. It could have negative impacts on innovation, as the prescribed rules may not be technology neutral. Supervisors may issue warnings before taking enforcement actions, but other than that there is less room for supervisors to take actions before proceeding to enforcement.⁸ Because of the heavy reliance on enforcement, the activity-based approach is not generally suitable for early supervisory action to modify risky behavior by the firms. It is also not very effective for cross-border activities, unless global regulators consider regulatory approaches that are closely aligned, and international agreements allow for cross-border enforcement actions.

⁸ Some regulators are exploring interim measures to overcome the inherent limitations of the activity-based approach. For example, UK Financial Conduct Authority (FCA) conducts market studies across industry price caps, which can be an alternative to enforcement.

- **Hybrid approach** combines elements of both activity- and entity-based regulation depending on the nature of each jurisdiction’s regulatory structure and whether the jurisdiction houses the headquarters of a firm or hosts their activities. A hybrid approach would use both activity- and entity-based regulations with clear allocation of the responsibilities between home and host jurisdictions and close cooperation among the regulators so that it may reap the benefits of the two approaches. Entities would be subject to licensing by home jurisdictions and would be subject to other requirements, including activity-based requirements imposed by host regulators. Close cooperation between home and host supervisors would enable regulators to ultimately implement and enforce both global and local requirements. Monitoring and risk identification with close cooperation among supervisors would allow the detection of systemic risks arising from the combination of activities generated across the group. The hybrid approach is necessary to achieve the underlying principle of “same services/activities, same risks, same rules, and same supervision.”

Most financial institutions are subject to both entity- and activity-based regulations. Banking and—to a lesser extent—insurance regulations are built with an entity-based approach. On the other hand, securities regulations have been developed with a more activity-based approach. In traditional financial markets where banks and insurers are the main players, those activities are subject to both entity- and activity-based regulations. In practice, the distinction between activity- and entity-based approaches is blurred, with regulators often using entity-based measures (such as business improvement orders, intensive inspections, and enhanced monitoring) to enforce activity-based regulations.

The IMF had previously (IMF 2014) recommended a “mixed approach”—similar to the suggested hybrid approach—to address systemic risks posed by shadow banking. There are some similarities between shadow banking and BigTech. For example, both have grown outside the regulatory perimeters to have potential systemic implications. While each individual entity and service may not pose systemic issues, the combination of the entities and services create systemic risks. Some entities and functions of both shadow banking and the BigTech ecosystem can easily relocate their headquarters and main activities to other jurisdictions where regulations are less robust.

All regulatory approaches involve inherent policy trade-offs. There is sometimes a trade-off between efficiency and stability in financial regulation. Competitive markets are efficient but may pose risks to financial stability because tougher competition depletes margins and prevents banks from building buffers. Regarding BigTech, there are additional trade-offs, for example, between anonymity (privacy) and allowing data access to private providers (efficiency) as well as between anonymity (privacy) and data sharing for prudential purpose (stability; Feyen and others 2021). The entity-based approach can be principle based and flexible. It helps supervisors develop an understanding of risks across activities. It can be more tailored to cover risks arising from a combination of activities (such as deposit taking and lending, which enables maturity and liquidity transformation). Therefore, entity-based regulation works better for financial stability and prudential requirements, although it can be problematic where the regulatory perimeter is not clear. On the other hand, the activity-based approach is applicable to any individual or firm who conducts particular activities, regardless of their licensing status, and enforcement tools are traditionally limited to fines. Therefore, activity-based regulation can be simpler and more prescriptive, which may help to ensure a level playing field among the entities conducting the same activities.

A hybrid approach could provide supervisors with additional flexibility in tailoring the regulatory framework to suit the new contours of the financial system. While conceptually appealing, successful implementation requires close coordination between prudential and conduct regulators. In the hybrid approach, both approaches can complement each other to achieve the competing objectives of financial regulation.

However, this approach needs close coordination between prudential and conduct regulators, which is not always easy regardless of regulatory architecture.

Differences in mandates and objectives between prudential and conduct regulators pose additional challenges for closer coordination. Prudential and conduct regulators face different challenges. On the one hand, prudential regulators tend to be proportionate to systemwide risks and focus more heavily on large firms and large transactions to assess firm and systemwide risks. On the other hand, for conduct regulators, the most serious conduct incidents could emerge in the smallest transactions (such as SME loans and sales to seniors). Equally, too much activity-focused supervision may fail to identify the systemwide risks (not seeing the woods for the trees). Therefore, although both prudential and conduct regulators are shifting toward risk-based supervision, prudential risk and conduct risk often require different skills and supervisory frameworks. Coordination between prudential and conduct regulators can be challenging given their different mandates, and it is important to keep in mind that conduct regulations are also crucial for the safety and soundness of the financial system—as the subprime loan crisis in 2008 clearly demonstrated.

THE EXISTING REGULATORY FRAMEWORKS AND BIGTECHS

Existing regulatory frameworks can affect competition by creating an unlevel playing field between financial incumbents and BigTechs. Deposit-taking institutions (banks) are subject to comprehensive regulatory obligations (macro- and microprudential, conduct, anti-money laundering/countering financing of terrorism (AML/CFT),⁹ reporting, and so on). This is because they typically provide three fundamentally important services—deposit taking, lending, and payment infrastructure services—and as a result they may play a systemic role in many jurisdictions. The regulatory requirements address potential systemic risks, which require significant investments by firms to develop adequate governance and risk-management arrangements. In several jurisdictions, these institutions with systemic risk impact are subject to explicit systemic risk charges, such as additional loss-absorbency capacity, resolution, and crisis management requirements. Typically, these prudential requirements are applied to the entire group and often extend to the unregulated activities of the group (such as enterprise-wide approaches to risk management).

Many BigTechs have financial entities that are subject to nonbank financial regulation. For example, Amazon Pay has a money transmitter license in many US states. However, there are no deposit taking or insurance activities within the group, which would require groupwide prudential regulation and supervision. Nonbank or noninsurance regulations are mainly built with activity-based regulations; therefore, BigTechs can avoid comprehensive groupwide entity-based regulation as long as they can avoid financial activities that require banking (deposit taking) or insurance underwriting activities. Where rules on some BigTech activities (such as cloud provision) are enacted, requirements tend to fall on financial institutions that are already subject to existing regulations. This indirect approach could pose significant challenges on effective supervision, especially when BigTechs are offering such services cross-border.

Emerging new financial conglomerates created by BigTech could pose additional challenges to financial regulators. Current regulation and supervision on financial conglomerates are built mainly on sectoral conduct and prudential rules. While the Joint Forum updated its Principles for the Supervision of Financial Conglomerates in 2012 to reflect the lessons learned from the 2008 global financial crisis, it did not make fundamental changes in the recommendations on regulatory architecture for the regulation of financial conglomerates. Sectoral regulations remain the binding requirements for financial conglomerates, with an expectation that integration and intragroup transactions are usually limited and so group-specific risks

⁹ Financial Action Task Force (FATF) Recommendations, which are the international standards on AML/CFT, apply to institutions that engage in a range of activities, including deposit taking, lending, and money or value transfers. BigTechs will be captured if they carry out the covered activities. In practice, however, many jurisdictions may not yet subject BigTechs that engage in the covered activities to AML/CFT obligations due to the rapid evolution of the sector and the business model. Such gaps may give rise to regulatory arbitrage.

would not have systemic implications. However, the new business models of BigTech conglomerates may change this assumption. Given their size, many products or services have the potential to be systemic at launch. Furthermore, while in isolation these individual activities might not give rise to systemic risk, when highly integrated they could create risks not addressed by sectoral regulation, which could result in financial stability implications in the long term.

Over the longer term, concentration risks need to be considered in the context of BigTech. Existing regulatory frameworks ultimately could result in concentrated markets, where BigTech firms are able to outcompete incumbents and start-up entrants. In particular, BigTech conglomerates may provide better or faster financial services with cross subsidies from their core business in the short term, which would enable them to increase their market share in multiple financial sectors and create dominating powers in the long term. While this will bring some benefits to users, market dominance for platform-based business models could lead to new conduct and market integrity risks, where BigTech might rely on markups rather than innovation to increase revenues, resulting in lower overall innovation and greater costs to end users. Merchant fees in payment services are one example where increased market power may lead to higher costs that might then be passed on to end users.

BigTech expansion to the financial services sector might also change the power balance between regulators and regulated firms. In the existing financial ecosystem, systemically important banks have a relatively influential position in relation to financial regulators (to balance that, supervisors have ample access to the board and senior management and are able to closely follow and monitor the business). However, even those big banks' activities derive implicit benefits from the safety net of central banks, particularly that of their home jurisdiction. Therefore, while scope for regulatory arbitrage exists (such as on a cross-border basis), group supervision predicated on global standards (such as Basel III) helps narrow the scope for arbitrage. BigTech's expansion will shift the power dynamic toward the operators and technologies from the regulators (especially host regulators). BigTech is less reliant on regulated financial services since the revenue from regulated financial services still accounts for a small percentage of its total revenue. Those firms with platform-based businesses are less exposed to credit and liquidity risks, thus they don't have material financial or safety net needs. In addition, due to the global nature of their business, they can more easily relocate headquarters and main activities abroad.

New conduct risks are arising from BigTech's predominantly retail-focused business model. BigTech activities are heavily skewed to retail business, and a number of anticompetitive behaviors have been observed in their nonfinancial services (such as e-commerce). Market conduct regulation in advanced economies has comprehensive regulations to address conflict of interests, and so some anticompetitive behaviors might be prohibited by existing financial regulations. However, conduct regulations may not have been implemented or strictly enforced in many low-income and emerging markets.

A regulatory framework that favors one type of entity over another will generate unfair outcomes and create regulatory arbitrages and a distorted market. Policies such as open banking, and more broadly open finance, have reduced barriers to entry, with the aim of increasing competition in financial services such as payments. While the implementation of open banking and/or open finance policies differs across jurisdictions, those policies will commonly require banks and regulated firms to share limited data, including certain account and transaction data, to authorized third-party providers, with the consent of the consumer. In practice, the requirement means the transfer of data from financial incumbents to new entrants like fintech start-ups and BigTech. This requirement may have the consequence of reducing competition in the longer term, creating too-big-to-fail entities and resulting in worse outcomes for consumers, markets, and financial stability.

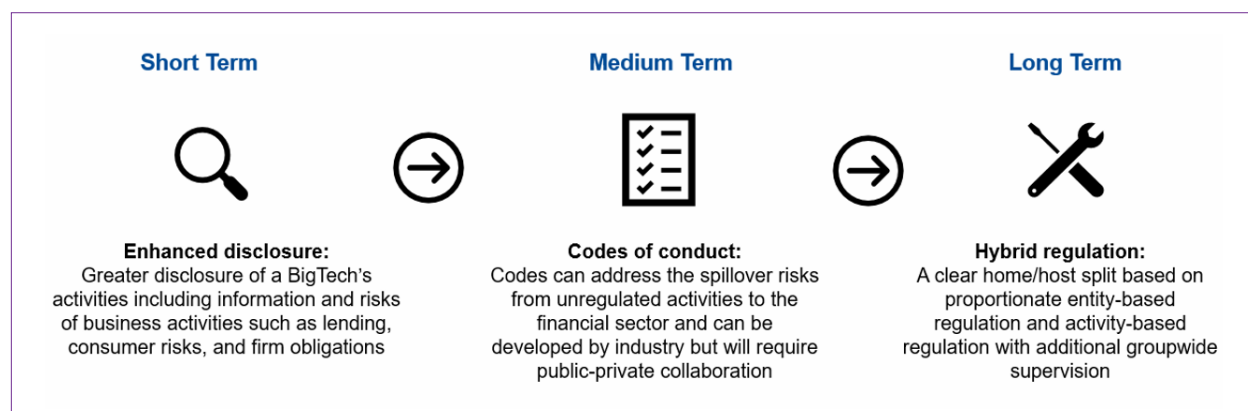
In line with the BFA, authorities should adapt regulatory frameworks and supervisory practices for the orderly development and stability of the financial system. These frameworks can facilitate the safe entry

of new products, activities, and intermediaries; sustain trust and confidence; and respond to risks. Some jurisdictions have created specialized licensing regimes like charter-lite licenses and phased authorization, which may provide a proportionate and controlled regulatory regimen for fintech start-ups. Other jurisdictions facilitate the entrance of these entities by providing specific licenses for individual activities. Some approaches waive certain requirements, and others provide flexible interpretation of existing regulations. The BFA generally supports approaches that embrace the promise of fintech and enable new technologies to enhance financial service provision while keeping risks in check.

To address the risks from the range of financial services BigTech provides and the growing concerns about their potential systemic importance, holistic policy responses may be needed. Despite the wide range of financial activities provided by BigTechs, a lack of groupwide regulation potentially provides these firms with a competitive advantage—not always through innovation and better products, but through regulatory arbitrage. Unlike banks, where ancillary activities might fall under group regulation, the consumer data consolidated by BigTech, for example, is not usually covered by financial services regulation. This means that some modification and adaptation of regulatory frameworks may be needed to contain risks of arbitrage, while recognizing that regulation should remain proportionate to the risks. Holistic policy responses may be needed at the national level, building on guidance provided by standard-setting bodies.

IV. Regulating BigTechs—Now and Later

Figure 1. Short, Medium, and Long Term Regulatory Frameworks



Source: IMF Staff.

Existing regulatory frameworks are often fragmented across jurisdictions, which can lead to regulatory arbitrage, policy gaps, and a buildup of financial stability risks across borders. BigTech operations are cross-border by nature. The BFA identifies the importance of international regulatory cooperation and information sharing as a way of mitigating these cross-border risks while reducing regulatory friction for entities to scale across markets. Sharing experiences and best practices with the private sector and with the public at large can help to catalyze discussions on the most effective regulatory response to BigTech, considering country circumstances, and to build a global consensus on the way forward.

The regulatory community is looking to tackle the unique challenges associated with regulating BigTech. Many of the existing approaches to regulation are relevant and appropriate for BigTech, such as conduct requirements applicable to securities transactions. The existing approaches of activity-based and entity-based regulation could be applicable once the regulatory perimeter is expanded to cover BigTech entities and groups.

Yet these adaptations cannot easily be implemented immediately, leaving a potential gap in regulation. In the meantime, it would be useful for authorities, with close coordination globally and ideally with support from the relevant standard-setting bodies, to encourage BigTechs to develop codes of conduct that address the spillover risks from unregulated activities to the financial sector. While this could create better governance and oversight across the whole entity and require fewer resources from supervisors, enforcement and early action involving the unregulated activities of BigTech groups would still be limited. To address the lack of enforcement and early action by supervisors, BigTechs should be encouraged or required to enhance disclosure of their financial services to foster market discipline and improve their provision of financial services.

Greater disclosures can provide more information to markets and consumers to help them make better informed decisions. However, the current disclosure by BigTechs does not describe their financial services and associated risks in detail (see Box 2 for more detail). This in turn may trigger an unsustainable shift in risk from BigTechs to financial institutions which may cause excessive risk taking. Different jurisdictions have different approaches to the type and level of disclosures required by entities, and such disclosures can be mandatory (through regulation) or voluntary (through certain types of codes of conduct or best practice). They can cover a range of issues, such as different activities being carried out by the entity, partnerships with

other firms, and risk of activities being provided. While in many jurisdictions such disclosures can be implemented quickly—especially when done voluntarily—they are most impactful where disclosure is mandatory and the type of disclosure is standardized across firms. In many instances, disclosure can be an effective first step in leveling the playing field, as long as authorities and market participants are aware of its limitations.

Some jurisdictions use industry codes as an important regulatory tool that can provide some market protections while saving regulatory resources. Industry codes can assist authorities that have either stretched resources or limited powers in relation to certain market actors. For example, in securities regulations, many authorities make active use of self-regulatory organizations, which form an important complement to the regulator in achieving the regulatory objectives, especially regarding investors' protection. Such collaboration between the regulators and industries could usefully be applicable to fintech and BigTech regulation. In fact, in some jurisdictions, industry codes may be recognized by the regulatory authority (such as the UK FCA and the Monetary Authority of Singapore), providing greater certainty to markets and consumers. These codes are best developed and implemented when there is public-private collaboration between BigTech, incumbent financial institutions and authorities allowing areas of mutual concern to be covered, with public consultation for transparency. Such codes should focus on delivering good outcomes rather than prescribing detailed rules.

Industry codes may help regulatory authorities improve certain outcomes from BigTech expansion into financial services. Industry codes can focus on different market behaviors of BigTech but could be useful to limit the spillover risks from unregulated parts of the business. They could be used to prescribe outcomes regulators would like to achieve (for example, clearer communication, managed risk taking, protecting and safeguarding consumer funds or data). They are generally quicker to implement than larger scale policy changes (for example, implementing a home/host regulatory split based on entity- and activities-based regulation). However, industry codes of conduct are not a perfect substitution for a robust regulatory framework. Codes may give rise to "halo effects" where users believe entities are regulated and may be under the false assumption that there are regulatory protections in place. This could lead to reputational risk for authorities should these entities fail or if certain risks crystalize.

BOX 2. Disclosure of BigTech Financial Services

BigTech financial services are growing via partnerships with incumbents. As with their nonfinancial services business lines, BigTech firms remain platform-based business models that facilitate financial transactions between incumbents and end users. Therefore, BigTech firms don't normally provide funding or take credit and liquidity risks from the provision of financial services. Funding and financial risks are usually taken by partnering banks and other financial institutions.

Disclosures by BigTech firms until now have not included critical information on risk sharing between BigTechs and incumbent financial institutions. Many large BigTech firms are offering payment services, for example, which could inherit certain credit and liquidity risks of merchants and the end users, unless those risks are taken or guaranteed by the partnering financial institutions.

Some BigTech firms are actively providing lending services themselves. BigTech firms that have grown from e-commerce business often have significant lending activities with their merchants and buyers. They often disclose these activities under "account receivables" without any information on credit quality. In one situation, one firm seems to have had extensive credit support from a related-party bank, but the bank is outside the group consolidation. In general, there is not much disclosure by the BigTech firms on information and risks of their lending activities.

BigTech financial businesses are exposed to contagion and reputational risks, which should warrant a more comprehensive disclosure. While BigTechs may not be currently exposed to credit and liquidity risks related to financial services, end users may be using these services based on their trust in the service quality and reputation of the BigTech firms. If systematically important BigTechs collapse, banks that use BigTech platforms or cloud services will face large operational challenges, which may potentially require exceptional rescue interventions. Currently, because of the lack of transparency, the costs of this type of disruption are largely unknown. In the scenario where the partnering financial institution becomes impaired, a BigTech might need to step in and provide continuity to its financial services by taking on credit and liquidity risks. To help mitigate these risks, BigTech firms should be required to enhance their disclosure regarding financial services (including those risks such as step-in and reputational risks, which may be less quantifiable).

IMPLICATIONS FOR REGULATORY ARCHITECTURE

Longer term solutions may require more substantive changes, such as regulators reevaluating their roles as home and host supervisors. For instance, host jurisdictions may consider activity-based regulations supplemented by groupwide supervision tailored to a BigTech's specific risks. This can be built within existing regulatory frameworks and can be implemented with fewer additional resources. Supplementary group supervision can help impose prudential requirements across a BigTech group's financial activities, but the effectiveness of such requirements could be limited. Over the longer term, a better solution would be that home jurisdictions consider entity-based regulation of large tech conglomerates through entirely new regulatory frameworks designed specifically to capture the risks of BigTech—for example, a "BigTech license" or systemic designation for large tech conglomerates that conduct certain activities within financial services. This approach can capture risks from across financial activities but would likely require significant supervisory resources.

Home supervisors of BigTech groups will need to strengthen coordination efforts with governmental agencies, other domestic regulators, and host regulators globally. If BigTechs grow to systemic levels, it is more likely that

home supervisors will need an entity-based approach. They will need to significantly improve domestic coordination with relevant authorities (such as data, privacy, competition, and consumer protection agencies). They will need to work more closely with domestic regulators from other sectors in which BigTech entities are conducting business. Home regulators will also need to allocate resources into international coordination. A robust regulatory architecture (such as clear and effective coordination arrangements among the relevant financial regulators or integration of regulatory authorities) will help to pool scarce resources for new tasks.

For host supervisors, a suitable regulatory approach will be best determined by the country context. Host supervisors may potentially rely on home supervisors and focus on activity-based regulations if home supervisors have implemented robust regulations. However, if actions taken by home supervisors are slower than BigTech growth in host jurisdictions, host supervisors may need to take more concrete actions. This could have significant resource implications to the host supervisors, which may require substantial reform of regulatory architecture, and smaller jurisdictions might find it more difficult to enforce than larger jurisdictions.

POTENTIAL REGULATORY APPROACHES

Home authorities have several options when implementing an entity-based approach to regulation. Some home jurisdictions might require BigTechs to create financial holding companies for their financial services activities, allowing those authorities to supervise the holding companies on an entity basis. Others may create more general BigTech licenses and regulate not only the financial entities but also the entire group. Other jurisdictions might decide to designate BigTechs in financial services as systemically important infrastructures. Current regulatory approaches are summarized in Box 3.

While those options are theoretically appealing, implementation of an entity-based approach is not straightforward. To implement an entity-based approach, the most important first step is to identify the lead/home supervisor. However, identifying a suitable nexus for home regulation might not always be easy, particularly in instances where a BigTech might be headquartered in one jurisdiction, delegate certain key decision-making functions in another jurisdiction, and carry out most of its financial services activities in a third jurisdiction. Even with a suitable nexus, different jurisdictions might approach entity-based regulation for BigTechs differently depending on their legislative frameworks and the nature of BigTech activities.

Financial regulators may not always take the lead in conducting entity-wide regulation for BigTech. Financial activities of BigTech and their systemic implications may not be the first priorities of BigTech regulation as the biggest concerns would remain fair competition. It is likely that in some jurisdictions, close collaboration among financial authorities and other domestic authorities will be required given the cross-sectoral nature of BigTech. In these instances, other authorities, including competition authorities, might take the lead in ensuring entity-wide oversight of BigTech firms.

When a jurisdiction chooses a designation approach, suitable metrics underpinning the designation would need to be agreed across borders. Metrics may include the degree of concentration and interconnectedness, market share of their related financial services (including the services provided by partnering entities), and degree of cross-border and cross-sectoral activities. Such metrics should be developed in close cooperation with foreign authorities where BigTechs have material financial activities.

An activities-based approach for host authorities can be easier to implement, although there will be some challenges. While defining relevant activities is likely to be difficult—particularly where these are either new activities or current activities carried out through new technologies or business models—an activities-based approach for host jurisdictions might be easier to implement. BigTechs, much as they do now in many jurisdictions, are likely to need specific licenses or permissions to conduct specific activities within a jurisdiction. In certain instances, the host jurisdiction may implement or update existing regulation to reflect the growth of BigTechs, for example, by strengthening some operational, cyber, capital, or liquidity requirements.

BOX 3. Case Studies of Current Entity- and Activity-Based Regulatory Approaches to BigTech

Chinese authorities have taken steps toward an entity-based approach through expanding their regulatory perimeter to bring BigTech conglomerates under their regulation and supervision. BigTechs in China have grown to account for a significant market share in payment services and were rapidly increasing their presence in lending and asset management services. To address growing concerns on systemic risks, Chinese authorities required BigTech entities to set up a financial holding company where each line of the business (for example, consumer finance and insurance) will be subject to relevant prudential and governance requirements. However, since many of the specific requirements for the financial holding companies are yet to be defined, actual impact on the BigTechs' business models is yet to be determined.

Chinese authorities have also deployed indirect supervision through existing commercial banks to align incentives between BigTechs and partnering banks. Regulations require commercial banks to carry out independent loan risk assessment; to cap co-lending with internet platforms or other partners at no more than 50 percent of outstanding loans; to limit co-lending with one platform to 25 percent of the bank's tier-1 net capital; and to conduct online lending only within the jurisdiction of their registration. Internet platforms are also required to provide at least 30 percent of the funding in any single joint loan with a bank. Regulations clarify that regional banks would not be able to raise cross-regional deposits from platforms, leading the platform to remove bank-deposit products. Those requirements should also help to address excessive interconnectedness and contagion risks from BigTech financial services to incumbent financial entities.

European authorities are also taking steps to mitigate the risks that arise from BigTech; however, the focus is on activities-based regulation as a primarily host jurisdiction. The Digital Services Act and the Digital Markets Act contain targeted powers to leverage against platform providers and online gatekeepers, which will cover many BigTech entities. An online gatekeeper is an entity that acts as a conduit between several groups of users. Where gatekeepers attract a large share of users, they can become gatekeepers to certain markets, potentially with monopolistic powers. Both Acts include measures to mitigate abusive market practices, including improving disclosures and provisions around complaints handling, mitigating risks from combining end-user data from different sources without consent, self-preferencing, and ensuring data portability and interoperability of ancillary services. The Acts also grant authorities more targeted enforcement powers to leverage against platform providers and gatekeepers.

European authorities are also discussing how to bring BigTech conglomerates within the financial regulatory perimeter. Separately, the Financial Conglomerates Directive (FICOD) is a framework that could cover BigTech through a broad scope that includes entities that operate in financial markets and are regulated subsidiaries of larger parent companies, provided the financial activities are material. FICOD aims to mitigate risks related to size, complexity, concentration, and contagion through stress testing and an enhanced information exchange program between the entity and regulatory authorities. However, the framework was not designed for BigTech entities with a narrow scope of financial activities and a limited number of entities identified as financial undertakings. Therefore, the framework might not capture all the nuanced risks that these entities bring on a cross-border and cross-sectoral basis. The European Commission requested the technical advice on this matter from the European Supervisory Authorities.

Box 3 (continued)

European authorities have also enhanced their indirect supervision through incumbent financial institutions and are considering direct powers over critical providers. The Digital Operational Resilience Act is a new regulatory framework where, if a BigTech entity is considered a critical third-party provider (for example, cloud services), it will come under the regulatory framework. In such a scenario, EU authorities would have direct capacity to oversee the service provider over the provision of that specific activity.

While US financial authorities have not taken concrete actions to regulate BigTech financial activities, a recent report on stablecoins implies that US authorities recognize potential systemic risks arising from BigTech. The US President's Working Group on Financial Markets issued a report on stablecoins' regulation, which describes rapid growth, systemic risk, and concentration of economic power of stablecoin arrangements. While the report does not use the term "BigTech," it describes a number of features of BigTech, such as "access to existing customer bases" and "combination of a stablecoin issuer or wallet provider and a commercial firm."

The report makes a number of recommendations to address excessive concentration of economic power. They include (1) limits on affiliation with commercial entities, (2) limits on use of users' transaction data, and (3) appropriate risk-management requirements on any entities that perform activities critical to the functioning. The report also recommends that the Financial Stability Oversight Council (FSOC) consider the designation of stablecoin arrangements as systemically important activities, utilities, or entities as an interim measure. Designation would permit the appropriate agency to establish risk-management standards for engaged financial institutions.

The necessity of international regulatory cooperation, monitoring new developments, and adjusting regulatory frameworks in response to new technological risks are all important aspects of the BFA. Chinese and EU authorities have both taken steps to mitigate risks that can arise when BigTechs enter domestic financial services and create new risks through new developments. Both approaches look to create a more holistic, entity-based approach to capture risks across the entity. On the other hand, US approaches implied in the President's Working Group report are a mixture of entity-based (FSOC designation) and activity-based (restriction of certain activities such as data sharing) regulations. The Chinese approach is focused more greatly on financial subsidiaries with oversight of BigTechs led by financial regulatory authorities, while the EU approach takes a broader look at the activities of BigTechs across their operations, with the regulatory lead not necessarily taken by financial regulatory authorities. The Chinese approach mirrors its circumstances as a "home" regulator for many of the BigTech entities operating within its jurisdiction, while the EU approach mirrors its circumstances as a "host" regulator where BigTechs operating within its jurisdiction are likely headquartered elsewhere.

KEY CHALLENGES ALONG THE WAY

The biggest challenge for home supervisors is likely to be the designation of BigTechs as systemically important. Nonbank Systemically Important Financial Institution designation (to large asset managers and insurers) has become stranded by strong industry pushback. As an example, the US Financial Stability Oversight Committee is subject to significant administrative burdens to prove systemic risk of the designating group and needs to conduct comprehensive cost benefit analysis. As a consequence, any designation

(which may be necessary for the home supervisor to implement entity-based regulations) of a BigTech as systemically important may take substantial time.

It might be difficult to coordinate between regulatory agencies across domestic sectors where a BigTech entity is considered systemically important. While the risks of BigTech activities might give rise to systemic risks in an industry, it does not necessarily follow that similar risks might arise in other industries, and therefore regulatory appetite might differ. A unified governmental strategy might be one way of ensuring cross-sector collaboration. Supervisory colleges of a network of domestic regulators might also help improve collaboration across sectors—for example, in the United Kingdom, the UK Digital Regulation Cooperation Forum brings together regulators from different industries to discuss common challenges.

As major risks—and their location—may be difficult to identify and quantify, it might be challenging to achieve a clear understanding between home and host supervisors on their respective roles. Some of the key risks that BigTechs generate are operational, contagion, and reputation risks, which can be difficult to quantify. Key decision-making relevant to such risks may not always be taking place in the group's official headquarters. Many home supervisors would be reluctant to take such a difficult job, in particular when most of the activities and risks are elsewhere, and there could be little reward to be the first mover. This can make the establishment of international coordination mechanisms extremely challenging.

The development of robust regulatory measures and their implementation would also be difficult and may take a number of years to be established. For existing entities, some prudential regulations (capital, liquidity, leverage) are binding. However, as BigTechs are currently less exposed to traditional risks (such as credit, market, and liquidity risks), those regulatory measures are neither binding nor effective. New regulatory measures may need to be developed to address material risks brought by BigTech (operational, contagion, and reputation risks).

V. Conclusion

The expansion of BigTech into financial services is happening at a rapid pace, and on a cross-border and cross-sectoral basis. Given the global footprint of BigTechs, combined with their large customer base, policymakers need to tackle the question of regulating BigTech. Regulators need to collaborate with a view to understanding the cross-border implications of regulatory approaches. For example, BigTech expansion is significant in some emerging market economies, creating new risks, including to financial stability. As highlighted in the Bali Fintech Agenda, international cooperation between home and host jurisdictions is becoming even more critical to ensuring effective policy responses that foster opportunities and limit risks arising from BigTech in financial services.

There are strengths and weaknesses to both activity-based and entity-based regulatory approaches, so a hybrid approach is ultimately needed to address the potential risks of BigTech. In line with the Bali Fintech Agenda, regulatory frameworks should deliver free, open, and contestable markets that enable the development of new technologies, while safeguarding the integrity of financial systems and ensuring financial stability. Where firms generate systemic risks (that is, through the provision of systemically important technology like cloud services or through the cumulative impact of carrying out several activities), such BigTechs should be subject to regulation that covers groupwide risks—where entity-based regulation is more effective. Nevertheless, activity-based regulation is also needed to address conduct risks (abusive and monopolistic behavior), which could potentially cause systemic risk in the long term. Therefore, the hybrid approach, combining the benefits of both activity- and entity-based regulatory approaches, is the most suitable to address the potential risks of BigTech.

By combining entity- and activity-based approaches, the hybrid approach can help achieve multiple objectives of home and host jurisdictions effectively. Some jurisdictions (such as China) are moving to entity-based regulations, while others (such as the EU) are primarily focusing on activity-based regulations. Ideally, home supervisors should establish an entity-based approach to cover global activities of a BigTech group, while host supervisors could in principle address local risks and concerns mainly through activity-based regulations. Strong coordination would be necessary between home and host supervisors, based on a clear allocation of responsibilities.

While a quick global response is clearly needed, it is likely that short-term solutions may also need to play a role. Putting in place the necessary robust regulatory framework for BigTech may entail lengthy legislative and regulatory processes in various jurisdictions. For example, it can take time to designate certain BigTechs as systemic (if required), to develop new legal frameworks to reflect the impact of BigTechs, as well as to adjust regulatory and supervisory approaches to better reflect the unique risks generated by BigTechs. While a faster global response would be desirable to the public, it is understandable that, in the meantime, short-term solutions may need to play a role. Regulatory authorities should actively use all of their existing regulatory powers (such as indirect supervision through regulated entities and proper implementation of nonbank and conduct regulations) with active coordination with other authorities, to address the risks of BigTech in multiple jurisdictions, across multiple activities and business lines. It would also be effective for regulators to encourage BigTech to adopt and improve governance frameworks through industry codes of conduct and enhanced disclosures.

Options should be explored to promote global consistency in treatment of BigTechs through existing or new global bodies. The G7 calls for further ways to mitigate the risk of regulatory fragmentation and to facilitate coherency of emerging technology ecosystems, which are a welcome step forward. Any international coordination body would need to have a broad mandate to address some of the issues discussed here, especially those that lie outside the remit of the financial sector standard setters. We recommend that the

2012 Principles for the Supervision of Financial Conglomerates be reviewed to address regulatory gaps and mitigate new risks (including systemic risk) arising from conglomerates, such as BigTech groups. The IMF can help in facilitating the global dialogue, sharing information, reviewing existing international standards, and implementing new standards.

VI. Annex 1: Definitions

Activity-based regulation: applied to any person or entity that engages in certain regulated activities, for example, facilitating the buying and selling of investments or operating lending activities.

BigTech: platform-based business model focused on maximizing interactions between a large number of mainly retail users. BigTechs are usually large technology conglomerates with extensive customer networks and core businesses across markets, for example, in social media, internet search, and e-commerce.

Entity-based regulation: applied to licensed entities or groups that engage in regulated activities (such as deposit taking, payment facilitation, lending, and securities issuance). Requirements are imposed at the entity level and may include governance, prudential, and conduct requirements.

Fintech: technologically enabled innovation in financial services that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services.

Fintech start-up or **Fintech-driven entity:** firms that are primarily driven by technology-enabled innovation in financial services.

Home authority: the financial regulatory authority that oversees the jurisdiction where a BigTech entity has its headquarters.

Host authority: the financial regulatory authority that oversees the jurisdiction where a BigTech entity offers its services but does not house its headquarters.

Hybrid regulation: combines elements of both activity- and entity-based regulation depending on the nature of each jurisdiction's regulatory structure and whether the jurisdiction houses the headquarters of a firm or hosts its activities.

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