

# Irving Fisher Committee on Central Bank Statistics

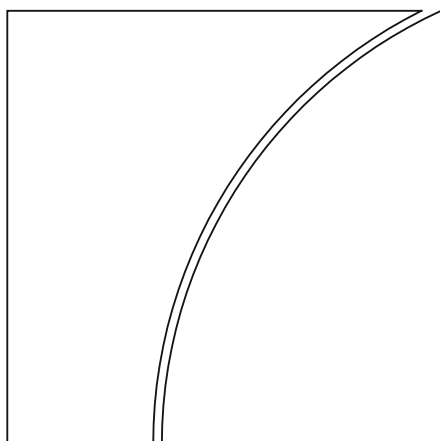
## IFC Report

No 10

### Central banks and fintech data issues

2020 Survey conducted by the Irving Fisher Committee on  
Central Bank Statistics (IFC)

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BANK FOR INTERNATIONAL SETTLEMENTS

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The views expressed here are those of the authors and do not necessarily reflect those of the BIS, the Central Bank of Chile or the IFC.

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# Central banks and fintech data issues

## 1. Executive summary

Fintech, or technological innovation used to support or provide financial services,<sup>2</sup> has developed markedly in recent years, transforming the financial landscape and creating a number of challenges for public authorities (IMF-WB (2018), Carstens (2019)). These challenges are particularly material for central banks, as the “future of central banking is inextricably linked to innovation”.<sup>3</sup> The transformation of financial markets is affecting the way they conduct their policies to ensure, among their policies to ensure, among other objectives, monetary and financial stability as well the smooth functioning of payment systems (CPMI (2018), Barontini and Holden (2019), Boar et al (2020)).

As regards central bank statisticians and their need for high-quality data to support policymaking, fintech gives rise to a number of issues. For example, what are the data sources available to measure fintech and how are they actually used? Which additional information is needed to support the conduct of central bank policies, and what are the data gaps? How should these gaps be addressed, considering costs/benefits trade-offs and the various stakeholders involved? And how should adequate statistical frameworks be developed for collecting comprehensive information given the global nature of the financial system?

To shed light on those various issues, the Irving Fisher Committee on Central Bank Statistics (IFC) conducted a survey among its members in 2019. The main results are the following:<sup>4</sup>

- **Fintech is developing in the majority of the jurisdictions, through different channels.** First, a growing number of recently incorporated entities leveraging on technology (“fintechs”) have emerged to provide financial services; they are particularly engaged in the provision of payments, clearing, and settlement services, as well as in credit intermediation. Second, traditional financial institutions are also embracing technologically enabled financial innovation and adjusting their business models accordingly; this is particularly the case for well-established credit institutions and payment service providers.
- The survey reveals a **significant need for fintech data among central bank users**, with the strongest requests expressed by those units in charge of payment systems. Information demands are particularly high in jurisdictions where fintech is the most developed. Users are typically interested in lists of fintech entities and on statistics on fintech credit.
- **Fintech creates important data gaps**, reflecting three main developments. First, fintechs can be classified outside the financial sector if for instance they were initially set up as IT companies; such classification issues can be reinforced by the

<sup>2</sup> Annex 1 contains a glossary of terms used in the report.

<sup>3</sup> For an overview of BIS fintech activities, see [www.bis.org/topic/fintech.htm?m=5%7C435](https://www.bis.org/topic/fintech.htm?m=5%7C435).

<sup>4</sup> Two thirds of the 92 IFC institutional members answered the survey; see Annex 2 for the survey questionnaire and Annex 3 for the list of participating institutions.

fact that these firms are often small, diverse, and not easy to identify. A second problem relates to the lack of granularity of the current statistical framework, since major data collection exercises group together non-bank financial institutions. For example, the financial accounts include a number of rapidly growing types of intermediaries providing financial services (eg crowdfunding, peer-to-peer lending) into the “other financial institutions” sector. Third, traditional financial institutions have been embracing innovation by sponsoring technological start-ups treated as directly controlled affiliates, implying that their fintech activities are blurred in consolidated groups’ reports.

- **To close these data gaps, it is key that fintech entities be adequately covered in the statistical reporting perimeter.** The guiding principle is that financial service providers shall be classified according to the main economic activities they perform, independently of the embedded technological intensity. Currently, central banks are applying this principle in an ad hoc manner, by assessing new fintech firms on a case by case basis in close cooperation with other domestic authorities – eg national statistical offices (NSOs).
- **Official business classification systems should be revisited** to ensure that firms engaged in financial intermediation are systematically classified in the financial sector. The ongoing revision of the International Standard Industrial Classification of All Economic Activities (ISIC) provides a key opportunity to enhance the classification of various fintech service providers such as neobanks, entities engaged in crowdfunding, robo-advisers or payment processing companies.
- Half of the **central banks have launched initiatives to close data gaps**, with the primary objective of updating the lists of financial entities and adjusting reporting requirements. In most instances, this work is done by collecting data from financial intermediaries (eg regulatory reports) and publicly available financial statements. Information provided by industry associations and business registries can also be helpful. In contrast, only a few central banks report initiatives to collect fintech data directly from the users of financial services (eg household financial surveys), despite their potential usefulness to assess the impact of fintech on financial inclusion.
- The majority of central banks report regular cooperation with other domestic authorities, which is essential to adequately cover fintech firms in official statistical frameworks. There is also a demand for **stronger international coordination**, not least to enhance classification standards and develop harmonised cross-country statistics, a precondition for any meaningful analysis of fintechs’ impact on the global financial system.

## 2. Background

Fintech, or technology-enabled innovation in financial services, has rapidly developed in recent years, resulting in new business models, applications, processes and products. An increasing variety of companies are leveraging on technology to supply different types of financial services and products (FSB (2017)). These companies can be classified into three main categories:

- (i) emerging fintech firms, which operate primarily in financial services and are making inroads in various market segments, such as the provision of payments, clearing and settlement services (eg payment processing companies), credit (eg neobanks), and investment management (eg robo-advisers);
- (ii) large technology companies (big techs), which offer financial services as part of their much wider set of activities – a trend that is also increasingly raising interest among policymakers (BIS (2019)); and
- (iii) traditional financial institutions that have modified their business models to deal with digital innovation, in many instances by setting up dedicated internal units, sponsoring new fintech firms, or through partnerships with external parties.

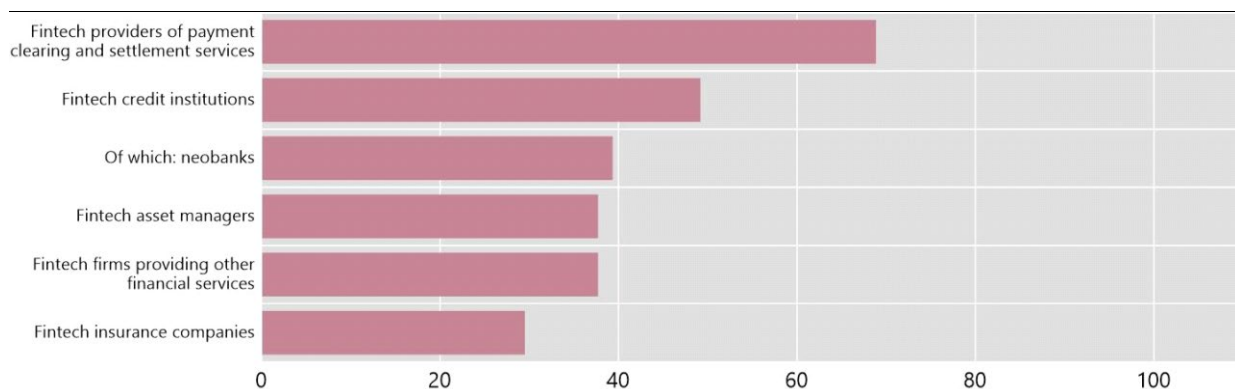
While fintech appears to be a relatively broad-based phenomenon, there are noticeable differences in the way it is spreading across the various segments of the financial market as well as across regions.

As regards the impact across business segments, Graph 1 shows what types of financial services are typically provided by fintech firms in reporting jurisdictions. Most are involved in the payment, clearing, and settlement service area, as stated by about 70% of the respondents. Fintech firms are also active in providing credit (around half of the cases). In contrast, they are reported to offer banking and investment products (eg as a neobank or as an asset manager, respectively) in less than 40% of the jurisdictions, and they are even less active in providing insurance services (mentioned by about one fourth of the respondents). Lastly, the survey results also reveal that traditional financial institutions are embracing fintech themselves, not least to improve their position vis-à-vis new competitors entering the market place as well as to respond to customers' evolving demands.

## Are there fintech firms in your jurisdiction?

As a percentage of jurisdictions

Graph 1



Source: IFC survey on Fintech data (2020).

Second, fintech has developed in the majority of the jurisdictions covered in the survey. There are however notable differences in terms of intensity between advanced, emerging and developing economies, as well as within these groups. One possible way to analyse these differences is to split the survey's responses between high- and low-fintech jurisdictions, using international rankings – such as the index developed by the Cambridge Centre for Alternative Finance, which takes into account

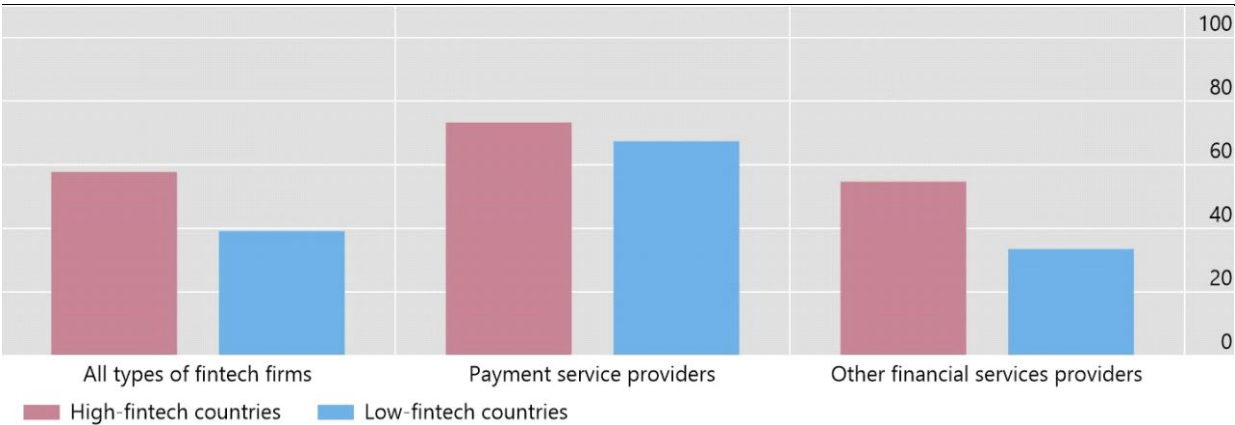
the rate of fintech adoption around the world (CCAF (2018)).<sup>5</sup> According to this classification, high-fintech countries comprise the most advanced economies as well as a few major emerging market economies (eg Brazil, India, Korea) and small open economies (eg Israel, Singapore).

The IFC survey confirms that, indeed, there are important differences across countries as regards the actual footprint of fintech firms, which is much higher in the high-fintech jurisdictions identified by the CCAF ranking (Graph 2). However, these observed geographical disparities depend on the type of financial segments considered. For instance, fintechs’ importance in the provision of payment, clearing and settlement services looks relatively comparable between high- and low-fintech jurisdictions. For all the other main types of financial services, in contrast, the footprint of fintech firms is significantly smaller in those places ranked as low-fintech jurisdictions.

Are there fintech firms in your jurisdiction?<sup>1,2</sup>

As a percentage of jurisdictions

Graph 2



<sup>1</sup> Countries are classified as high or low-fintech following the CCAF(2018) index. High-fintech countries= Australia, Brazil, Canada, France, Germany, Ireland, Israel, India, Japan, Korea, Singapore, Switzerland, the United Kingdom, and the United States. The remaining countries are in the low-fintech group. <sup>2</sup> All types of fintech firms include providers of payment , clearing, and settlement services, credit institutions, neobanks, asset managers, insurance companies, and firms providing other financial services. Other financial services consist of all fintech firms except providers of payment, clearing, and settlement services.

Source: IFC survey on Fintech data (2020); CCAF (2018).

In view of the varying impact of fintech across countries and financial sub-sectors as described above, it is essential to ensure that central bank statistics remain comprehensive, accurate and timely so that they can effectively support policy. A first objective of the survey was therefore to review the data needed to monitor fintech, and consequently to assess the emergence of potential data gaps. A second one was to provide insights on how to close these gaps, by reviewing the various initiatives launched by the central bank community. Thirdly, the survey also tried to identify

<sup>5</sup> Assessing the size of fintech globally is challenging, as national data are limited and may not be consistent. The CCAF index measures the size of fintech across countries, based on information collected in partnership with academics and industry associations and supplemented with secondary sources such as platform websites (Claessens et al (2018)). The jurisdictions are classified according to the rate of adoption of fintech services by enterprises, consumers and government, also taking into account digitalisation within the traditional financial sector.



avenues for further improvement, considering in particular the global nature of the financial system.

Against this backdrop, the IFC survey focused on four major themes:

1. Data demands among central bank users
2. Data gaps
3. Ongoing data collection exercises
4. Initiatives for further improvement

### 3. Data demands

#### Data needs differ across business areas, jurisdictions and the types of information considered

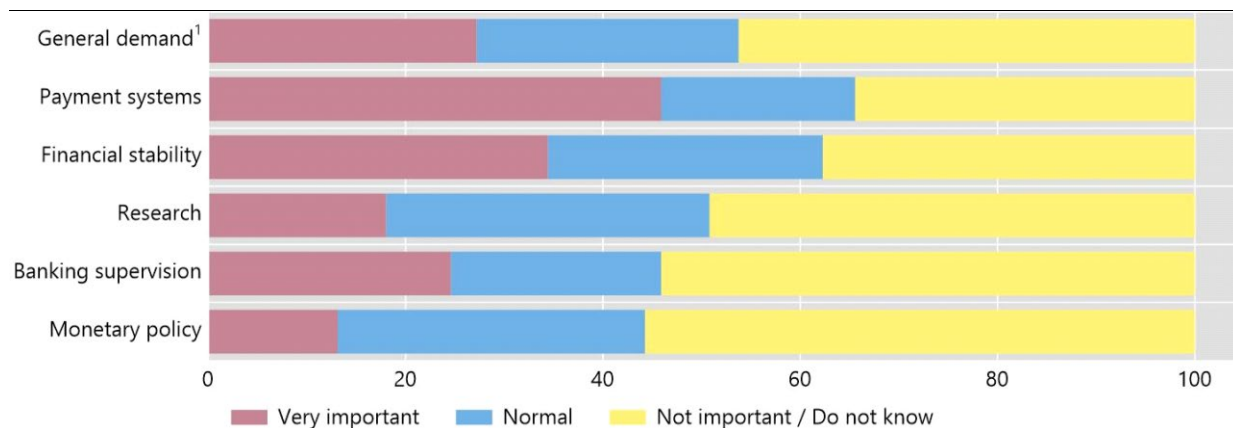
In general, central banks report that in-house fintech data demands are relatively high, although the intensity differs across central bank business areas, jurisdictions and the types of financial information considered.

As regards central banks' business units, and reflecting the high degree of penetration of fintech in payment, settlement, and clearing services (Section 2), the departments overseeing payment systems express the strongest demand for information; their fintech data needs are qualified as "very important" in about half of the jurisdictions (Graph 3).

Are there fintech data demands in the following business areas?

In per cent

Graph 3



<sup>1</sup> Fintech data demands are the average across the business areas.

Source: IFC survey on Fintech data (2020).

In contrast, units working in the financial stability / macro prudential area exhibit a somewhat reduced interest in fintech statistics, rated as very important in about one

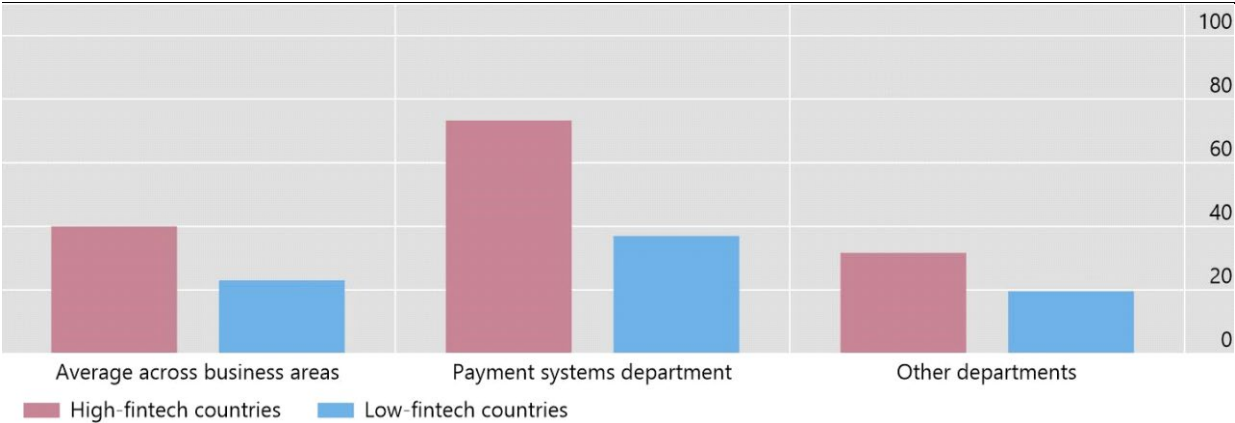
third of the cases – perhaps due to the fact that perceived fintech-related financial stability risks have so far remain subdued.<sup>6</sup>

The demand for fintech data appears even more limited among other groups of central banks users, being rated as “very important” by less than one fourth of them. The relatively low interest of banking supervisory units may reflect the small size of fintech credit relative to banking credit (BCBS (2018)), and also that many central banks are not directly in charge of banking supervision. Information needs are even lower in monetary policy and research units, suggesting that fintech developments do not have a material impact on their day-to-day work, for instance as regards the monitoring of inflation and the economy and the analysis of the transmission channels of monetary policy.

Are there important fintech data demands in the central bank areas?<sup>1</sup>

As a percentage of jurisdictions

Graph 4



<sup>1</sup> Countries are classified as high or low-fintech following the CCAF(2018) index. Consequently, high-fintech countries are Australia, Brazil, Canada, France, Germany, Ireland, Israel, India, Japan, Korea, Singapore, Switzerland, the United Kingdom, and the United States. The remaining countries are in the low-fintech group. Percentage of central banks’ business areas (comprising payment systems, financial stability, research, monetary policy, and banking supervision) reporting a “very important” fintech data need.

Source: IFC survey on Fintech data (2020); CCAF (2018).

Turning to geographical aspects, the intensity of data demands appears stronger for those jurisdictions where fintech has developed the most (Graph 4): central banks’ users rate their data needs as “very important” in 40% of high-fintech jurisdictions, compared with slightly above 20% in the low-fintech ones. Unexpectedly, the data needs expressed by payment systems’ units is much higher in high-fintech jurisdictions (rated as “very important” by 75% by them, compared with 35% in low-fintech ones), despite the fact that fintech has developed in a comparatively similar way in the payments area across the world (Section 2).

As regards the different types of fintech information requested by central bank users, the survey highlights two key areas of interest. One is for having lists of at least specific types of fintech firms, an information reported to be “very important” by almost half of the jurisdictions (and as “normally important” by an additional one fifth; cf Graph 5, panel A). The highest demand relates to lists of payment service providers

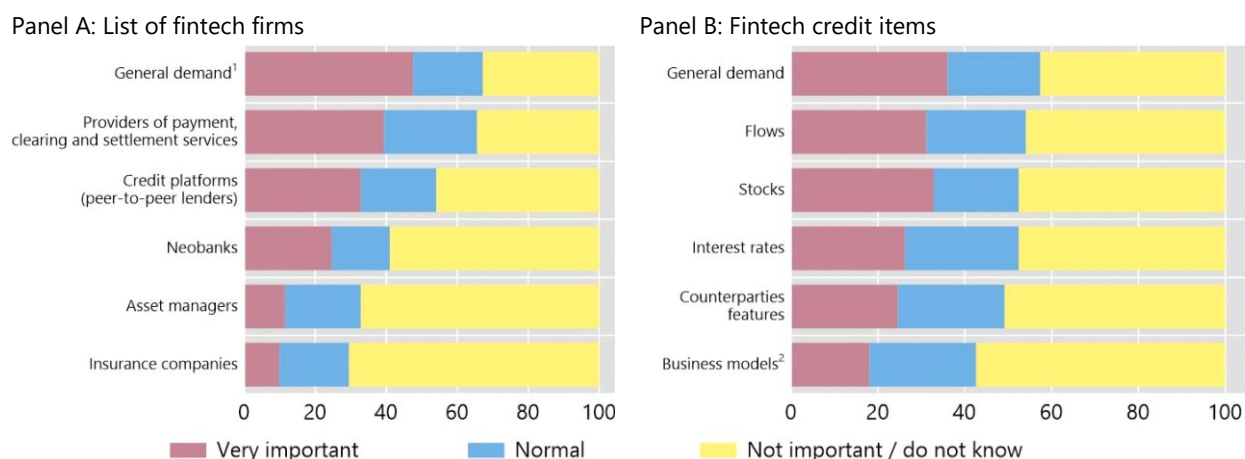
<sup>6</sup> Reflecting various factors, such as the fact that fintech credit remains small relative to traditional credit, the low size of crypto-assets, and the limited size of “traditional” financial institutions’ exposures to fintech.

and, to lesser extent, of credit platforms (eg peer-to-peer lenders). In contrast, the demand for lists of neobanks – which would usually be part of regulated credit institutions and henceforth be covered in credit and supervisory statistics – is significantly lower; interest for fintech lists in the areas of asset management and insurance services is even more subdued.

How important is the demand for the following fintech data items in your central bank?

In per cent

Graph 5



<sup>1</sup> The general demand for data is classified as “very important” if the demand for at least an item is very important. When it does not, the general demand for data is classified as “normal” when the demand for at least an item is reported as normal. <sup>2</sup> Business model of the platform, eg balance-sheet, peer-to-peer, etc.

Source: IFC survey on Fintech data (2020).

The second key area of interest relates to fintech credit activities (Graph 5, panel B). On average, around one third of central banks report that it is very important to collect information on this topic, with a clear interest in data on credit stocks and flows. The demand for other features – such as counterparty characteristics (location, type) and business models of fintech credit institutions<sup>7</sup> – appears more limited, as more than half of the jurisdictions rate it as “not important”. However, interest in these aspects could pick up should fintech credit continue to expand in the future. In particular, a significant number of central banks are interested in getting more information on the impact of fintech on the “traditional” activities of commercial banks, especially as regards their reliance on in-house versus external fintech services.

## Emerging data needs

In addition to the general features described above, the survey shed interesting light on the emergence of data needs in specific areas, namely big techs, crypto assets and financial inclusion.

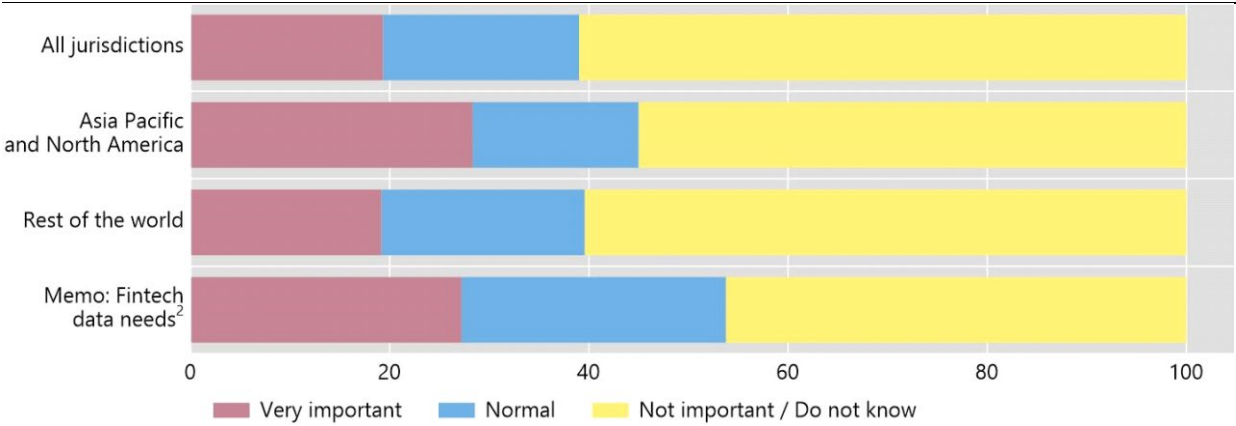
First, there is increasing interest in assessing the specific role played by big techs. However, the survey shows that the related data needs are more moderate: on average across central banks’ units, rated “very important” by around one fifth of the

<sup>7</sup> That is, on whether lenders follow a peer-to-peer or a balance-sheet model, etc; see CGFS-FSB (2017).

respondents (compared with about one fourth for the overall demand for fintech data). Several factors could explain this. One is the geographical concentration of big techs, which are mainly located in Asia-Pacific and North America (BIS (2019)), implying that central banks outside these locations may have a lower interest (Graph 6). Second, information on big techs is partly publicly available through commercial data providers, so that authorities’ statistical needs may already be well covered. Third, big techs’ market share in the provision of financial services has so far remained limited; actual data needs may thus increase in the future if large technological companies make further inroads in the financial system.

How important is the demand for big tech data in the central bank?<sup>1</sup>

In per cent Graph 6

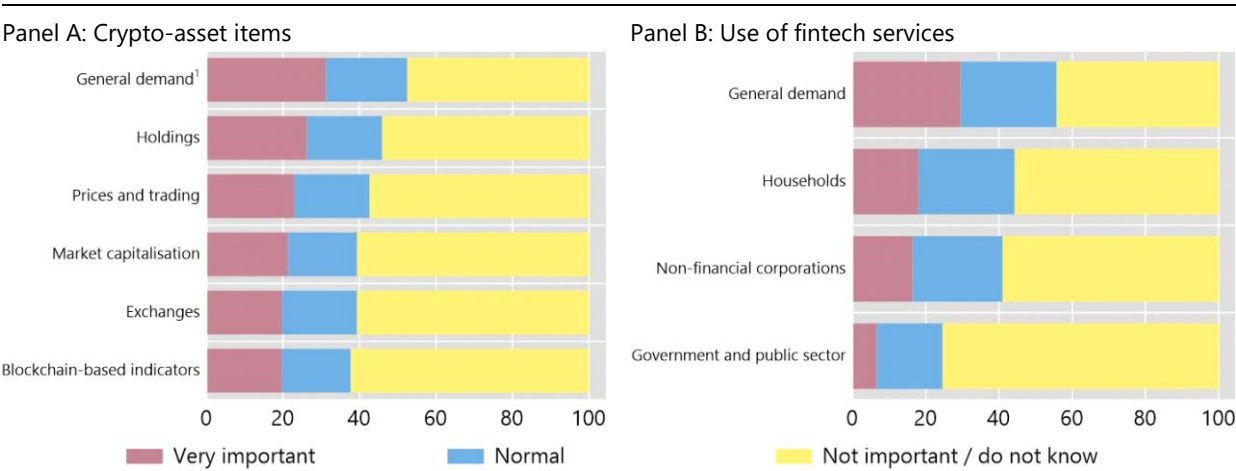


<sup>1</sup> Asia-Pacific and North America = Australia, Canada, India, Japan, Korea, Macao SAR, Malaysia, Mexico, Philippines, Russia, Singapore, and the United States. Countries in the rest of the world consist of the remaining countries. <sup>2</sup> Overall across the business areas in Graph 3.

Source: IFC survey on Fintech data (2020).

How important is the demand for the following fintech data items in your central bank?<sup>1</sup>

In per cent Graph 7



<sup>1</sup> The general demand for data is classified as “very important” if the demand for at least one item is very important. The general demand for data is classified as “normal” when the demand for at least one item is reported as normal.

Source: IFC survey on Fintech data (2020).

A second area of growing attention among central bank statisticians relates to data on crypto-assets (Graph 7, panel A). The survey shows that there is indeed some demand for that information, underscoring the potential implications of crypto-assets for central banks, for instance with respect to their work on financial stability, payment systems, and monetary policy transmission mechanisms. In particular, there is increasing interest in getting insights on the holdings of those assets and their prices and trading features. However, these data needs are reported to be limited, being rated as “not important” by more than half of the respondents. This may reflect that the size of crypto-assets has remained small in many jurisdictions, and that financial institutions’ exposures to them has so far been contained (ECB ICTF (2019)).

Third, the usage of fintech services constitutes another area of potential data demands. Its assessment typically requires the conduct of specific surveys (ie of households or non-financial corporations). Yet central banks’ interest in this information is relatively low, being rated as “very important” by less than one third of the respondents (Graph 7, panel B). This may be unexpected, since such information can be very useful to assess how fintech can actually enhance the access of economic agents to a wide range of financial segments and boost financial inclusion (see Box 1 for an analysis in the context of the Latin America and the Caribbean region). One possible explanation for this relative lack of interest (compared with other fintech-related data issues) could be that only a limited number of countries have experience developing such access surveys, which require substantial statistical knowledge and infrastructure and resources; in particular, only a few central banks conduct them on an annual basis, as they are costly and time-consuming. Nevertheless, and reflecting a growing policy recognition of the importance of financial inclusion issues in developing as well as more advanced economies, a number of respondents have plans to collect data on the usage of fintech services and have accordingly run pilot exercises.<sup>8</sup>

## 4. Data gaps

A key confirmation of the survey is that fintech is creating important data gaps. Given the parallel reported increase in information needs (Section 3), these gaps need to be addressed properly. But there are important challenges in this endeavour. In particular, fintech service providers are not always properly identified in traditional statistical frameworks, especially in the context of central banks’ current data collections on payments, monetary and financial institutions, and financial accounts.

To start with, a large majority (two thirds) of central banks report that fintech is creating gaps in their statistics, even though the picture can differ significantly across countries. In particular, perceived gaps are much larger in high-fintech jurisdictions (as mentioned by more than 80% of them), compared with low-fintech ones (less than 60%; Graph 8).

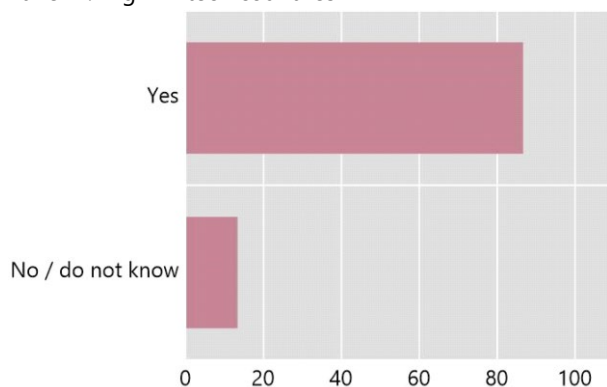
<sup>8</sup> The Deutsche Bundesbank, for example, included a fintech module in the Panel of Household Financial midterm survey of summer 2019. Households were surveyed on their use of robo-advisors and credit platforms as well as on their state of digitalisation (especially regarding financial transactions), preferences and psychological factors.

## Do you think that fintech is creating gaps in central bank statistics?<sup>1</sup>

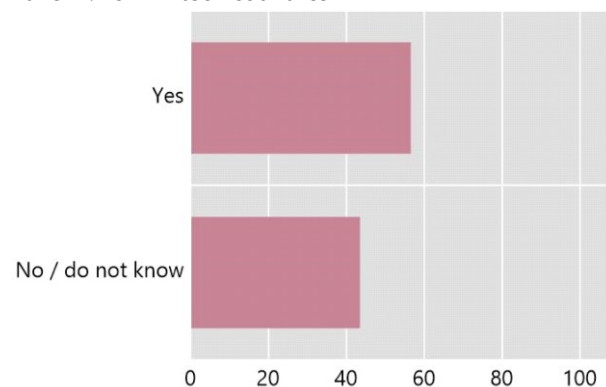
As a percentage of jurisdictions

Graph 8

Panel A: High-fintech countries



Panel B: Low-fintech countries



<sup>1</sup> Countries are classified as high or low-fintech following the CCAF(2018) index. High-fintech countries = Australia, Brazil, Canada, France, Germany, Ireland, Israel, India, Japan, Korea, Singapore, Switzerland, the United Kingdom, and the United States. The remaining countries are in the low-fintech group.

Source: IFC survey on Fintech data (2020); CCAF (2018).

## Determinants of fintech-related data gaps

The main factor behind these reported data gaps, mentioned by almost all (80 – 95%) jurisdictions, is the fact that fintech is developing outside the regulatory perimeter – in terms of assets, institutions, and services provided (as shown in the top rows of Graph 9). This aspect can be due to the lifecycle of fintech firms, which are often born as technological start-ups before making inroads in the financial services sector. For instance, an IT firm may build robo-advisers that would progressively engage in asset management activities; or a software company may set up a peer-to-peer platform and gradually engage in the provision of credit to the economy. When such functions have become their main activity, these companies (or their affiliates in charge) should be reclassified as financial companies. In practice, however, reclassifying firms is not straightforward and can take some time, as it requires tracking evolving business processes. The problem is aggravated by the fact that many of the new firms are small, diverse, and not easy to identify through the traditional statistical apparatus – a difficulty reported by more than 80% of the jurisdictions. Consequently, some of the fintechs that are emerging may remain classified outside the financial sector for some time. Furthermore, current collection frameworks may not be granular enough to assess the evolution of fintech; the 2008 System of National Accounts (SNA) is a case in point, as many fintech firms are de facto put into the wide group of other financial intermediaries (UN-EC-IMF-OECD-WB (2009)).

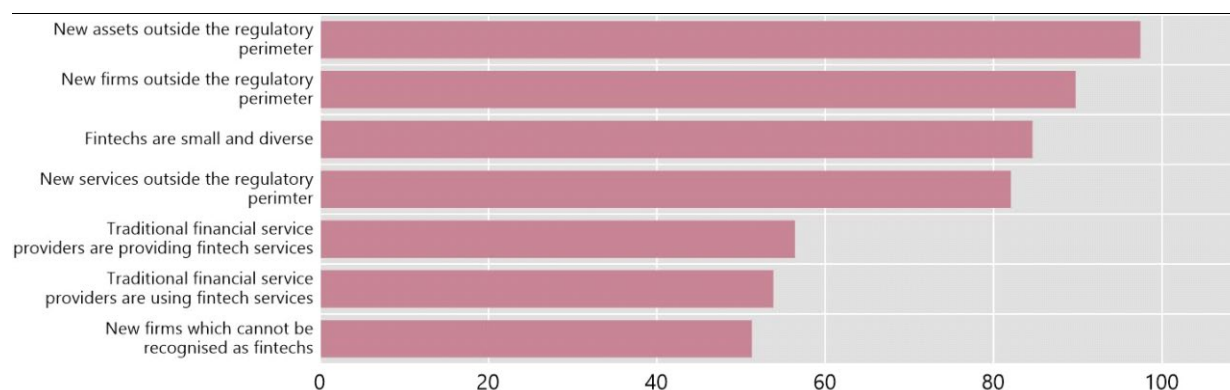
The adoption of fintech by traditional financial intermediaries constitutes another source of data gaps, a point highlighted by more than 50% of the respondents. From this perspective, two particular issues are of an almost equal interest for central banks. The first is to better understand how the traditional providers of financial services are using fintech, for instance the extent to which they are dependent on external services providers and the various risks (eg operational, reputational, financial) involved. A second issue is how these traditional entities are adapting to provide fintech services themselves. Cases in point relate to those affiliates offering new types of financial services (eg peer-to-peer lending, crowdfunding) and that are, at least to some

extent, controlled by traditional financial groups, implying that their activities are blurred in consolidated accounting reports. As a result, statistics relying on banking group-level reports could understate the underlying development of fintech credit by affiliates of traditional banks.

## Why is fintech creating gaps in statistics?

As a percentage of jurisdiction reporting gaps

Graph 9



Source: IFC survey on Fintech data (2020).

## Implications for central bank statistics

Fintech data gaps can impair the comprehensive coverage of the main statistics produced by central banks. As shown in Graph 10, the core of these exercises comprises the monetary and financial institutions statistics and monetary aggregates (collected by almost all central banks), as well as payments, external sector, financial accounts, and banking supervisory data (for around 80% of them). Furthermore, gaps could affect other types of statistics: half of the central banks collate financial inclusion-related information,<sup>9</sup> and a strong minority (around one fourth) compile statistics on the real sector, including the “real-side” of national accounts, and on non-financial corporates.

According to the survey, the impact of fintech on these central banks’ data collections is quite mixed and, on average, relatively manageable. The most critical reported data gaps relate to payments statistics: they are considered as “very important” by one third of central banks (Graph 11). For the vast majority of the other statistics produced by central banks, the gaps are also judged significant, being reported as “very important” by around one fifth of them and as “normally important” by another one third. In particular, the fraction of central banks reporting fintech-related difficulties when compiling lists of financial entities, financial accounts and household financial access surveys appears substantial. However, the overall severity of these data gaps should not be overestimated: for more than 60% of central banks, they are considered as “not important” for the large majority of the statistics they produce (Graph 11, yellow bars). This proportion is even close to 80% for a number of external sector statistics (eg trade, external debt) and for the (non-financial)

<sup>9</sup> For instance to monitor the access to, and use of, formal banking and payment services by households or some types of non-financial corporations such as small and medium-size enterprises (SMEs)

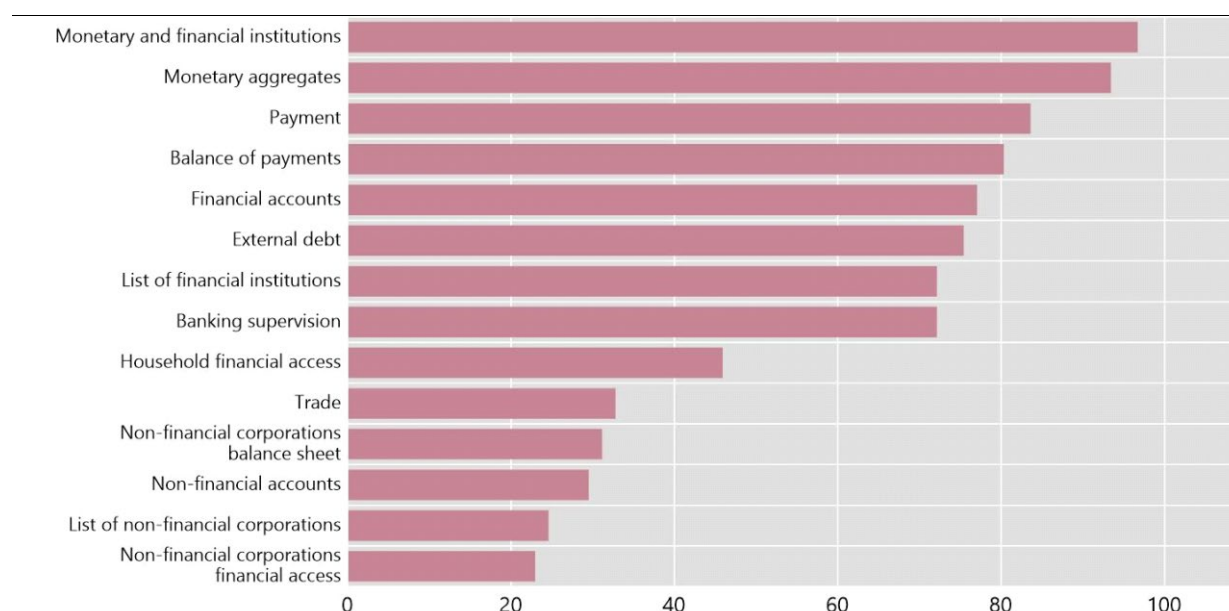


national accounts. These results reinforce the idea that fintech is still small in relation to the traditional financial system (Claessens et al (2018)); however, they also suggest that a further expansion in fintech could potentially affect the whole range of the statistics produced by central banks.

## Which statistics / databases are currently produced in your central bank?

As a percentage of jurisdictions

Graph 10

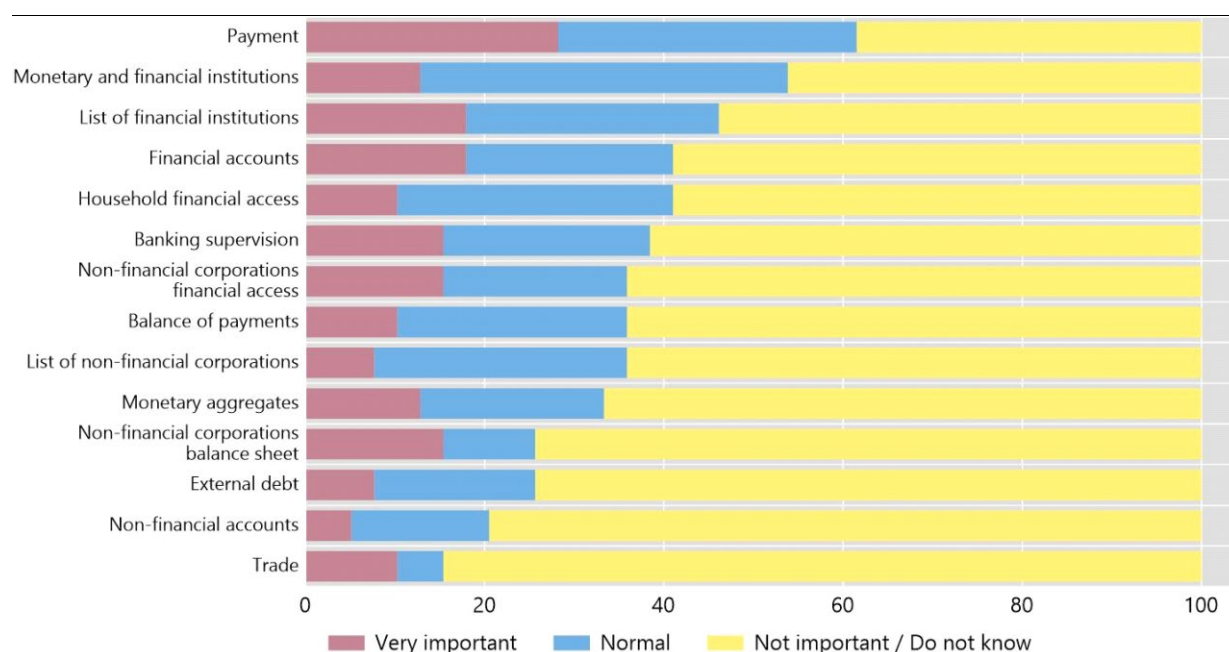


Source: IFC survey on Fintech data (2020).

## In which statistics is fintech creating gaps?

In per cent

Graph 11



Source: IFC survey on Fintech data (2020).



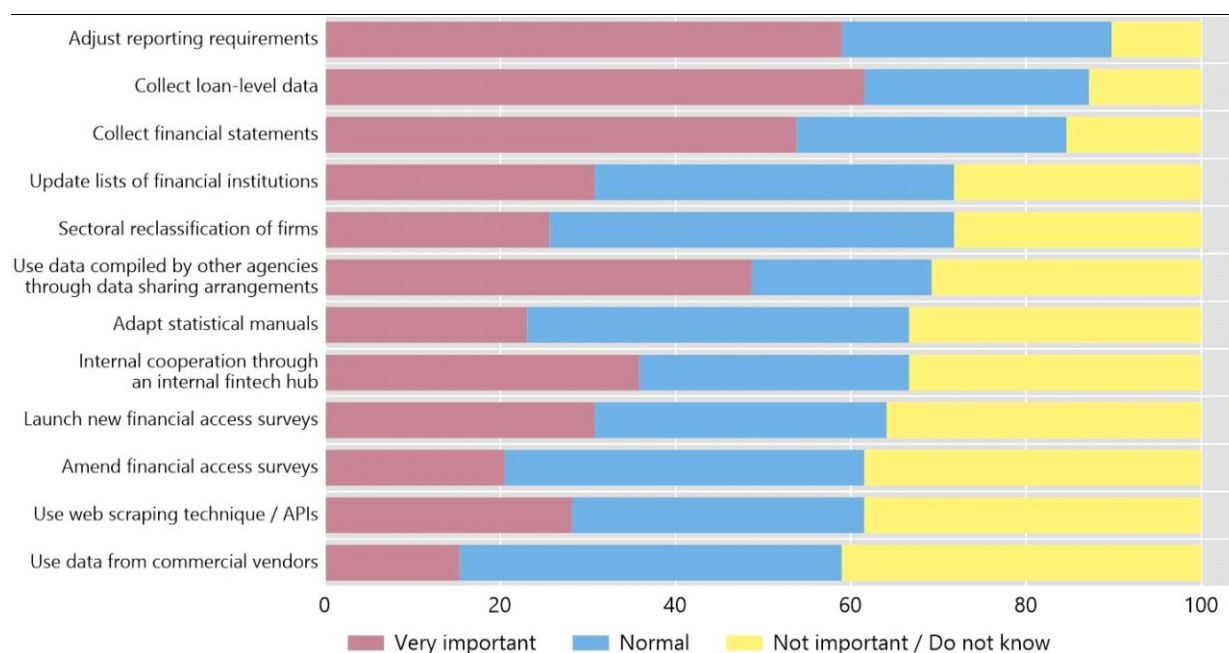
## Avenues for improvement

Another somewhat reassuring lesson from the survey is that central banks have many tools at their disposal to address fintech-related data gaps. As shown in Graph 12, several initiatives can be helpful in this regards.

Which of the following initiatives can be helpful to close fintech data gaps?

In per cent

Graph 12



Source: IFC survey on Fintech data (2020).

First, a large majority of central banks (more than 80%) consider that adjusting reporting requirements<sup>10</sup> as well as collecting instrument-level data on fintech loans (eg peer-to-peer) and fintechs' financial statements would be "very or at least normally helpful". Moreover, a wide range of complementary or alternative initiatives can be usefully explored, including the regular updating of financial institutions' lists, sectoral reclassification exercises, the adapting of statistical manuals, and the revamping/setup of financial access surveys. Furthermore, increased cooperation both internally and with external stakeholders could play an instrumental role in closing data gaps, as analysed in more detail in Section 5. In contrast, and despite central banks' increased focus on artificial intelligence, only one fourth of central banks felt that implementing new "big data" techniques (eg web scraping) would be very important to address fintech-related data gaps.

One lesson of the survey is the growing recognition of the need for data to assess the impact of fintech on financial inclusion. This policy interest reflects the importance of properly balancing the associated opportunities and risks (Pereira da Silva (2018)). On the one hand, fintech may support financial inclusion by promoting access to basic

<sup>10</sup> This encompasses adjustments in the regulatory perimeter, which are often the way followed when correcting reporting requirements, as analysed by a recent Financial Stability Institute (FSI) survey (Ehrentraud et al (2019)).

financial services (Demirgüç-Kunt et al (2017)), stimulating competition and efficiency, and providing risk diversification opportunities.<sup>11</sup> On the other hand, fintech may also pose significant risks, for example for financial stability.

This trade-off is particularly illustrated in credit markets, with the entry of various types of non-bank financial intermediaries. This presents an attractive alternative to bank credit for many firms and households looking for funds – especially for those with restricted access to the traditional banking system, eg poor households or very small enterprises (IFC (2018)). But risks may build up as customers move away from regulated intermediaries into less supervised providers of financial services (Cœuré (2019)).

Addressing these data needs appears particularly important in those jurisdictions with less developed financial systems, as suggested by the strong demand for fintech payments and credit data reported by those jurisdictions with lower financial depth (Box 1).

#### Box 1

### Fintech data and financial inclusion: insights from the Latin America and the Caribbean<sup>①</sup>

Fintech has a strong growth potential in regions exhibiting a relatively low degree of financial development (IMF-WB (2018)). In particular, it provides a key opportunity to foster financial inclusion in those places, although it can also raise new financial stability risks. This box sheds some light on these issues and their data implications, drawing on the experience of 12 countries in the Latin America and the Caribbean (LAC) region. With the exception of Brazil (which is typically considered as a high-fintech jurisdiction, for instance in the CCAF ranking), the LAC region is characterised by the relatively modest role played by fintech in the provision of financial services. Yet LAC central banks report significantly higher information needs compared with the overall results of the IFC survey. On average across business areas, the need for fintech data is reported to be “very important” by around 40% of these LAC central banks, and “not important” by only 15% of them – compared with , respectively, 27% and 46% for the overall IFC survey (cf Graph 3). This underlines that fintech data needs can be significant even in places with limited financial depth. One key reason is the potential for fintech to enhance financial inclusion – for instance in several small Andean countries characterised by the prominence of the informal economy and the large share of the population with little access to formal financial services and products.

Despite this different level of financial development, the fintech-related statistical implications reported by LAC central banks are relatively similar to the other jurisdictions. First, the most pressing data needs are expressed by their units working on the payment systems, in line with the overall survey results (Graph B.1, panel A).

Second, there are only minor differences in the ranking of the statistical initiatives perceived as important to close fintech data gaps (Graph B.1, Panel B). The priority of developing/amending financial access survey looks somewhat higher compared with other IFC jurisdictions, reflecting the usefulness of these data for financial inclusion objectives. In contrast, there seems to be less appetite in the LAC region to embark on resource-intensive statistical exercises, such as the collection of loan-level data and firms’ financial statements as well as the compilation of lists of financial entities.

Another issue is that fintech services in many developing countries are often provided by foreign entities operating on a regional basis. Given international data sharing constraint, domestic authorities have limited access to the information that can facilitate the monitoring of fintech developments in their own jurisdiction. These limitations, combined with significant resources constraints, may explain LAC central banks greater focus on gathering the information already available instead of setting new collection exercises. In particular, these reporters appear to focus

<sup>11</sup> Significant data collection efforts are called for in the most developed financial systems, reflecting the high demand for fintech data (see Graph 4).

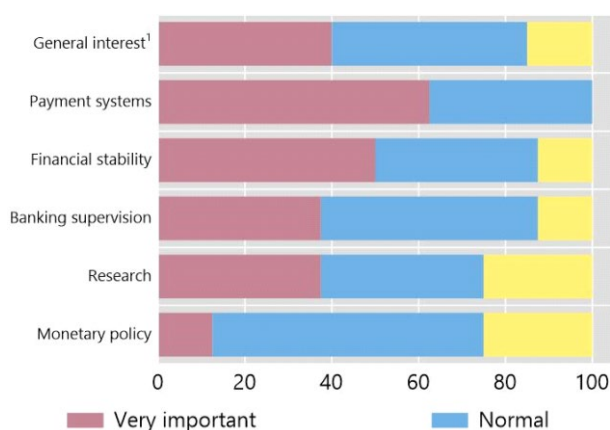
more on getting insights (eg industry data but also expert judgement) from local fintech associations as well as from reports from traditional financial entities (such as commercial banks involved in the development of fintech).

## Fintech data in the LAC region

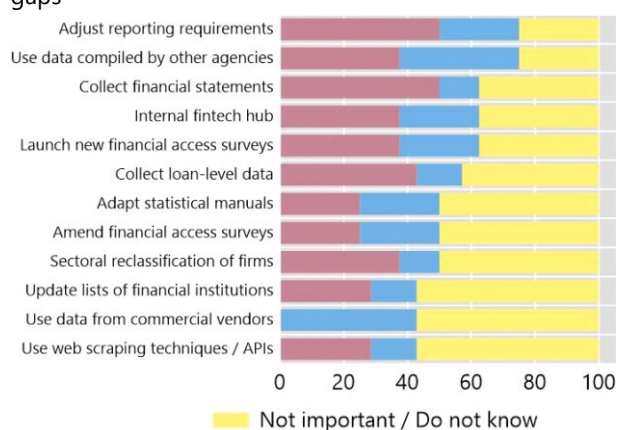
In per cent

Graph B.1

Panel A: Fintech data needs by business area



Panel B: Ranking of initiatives helpful to close fintech data gaps



<sup>1</sup> The general demand for data is classified as “very important” if the demand for at least one item is very important. The general demand for data is classified as “normal” when the demand for at least one item is reported as normal.

Source: IFC survey on Fintech data (2020).

© This box benefited from the support of Anahi Rodriguez Martinez and Serafin Martinez Jaramillo (CEMLA) and is based on the survey responses of Bolivia, Brazil, Belize, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Peru, Suriname and Uruguay.

## 5. Ongoing initiatives

Nearly half of the central banks report that they are taking initiatives to close the fintech-related data gaps analysed above (Graph 13). Perhaps not surprisingly, this is particularly the case in those places where fintech has developed the most: a large majority (60%) of the high-fintech jurisdictions report launching some type of initiative to close fintech data gaps, compared with only about one third for low-fintech jurisdictions.

Indeed, central banks appear to be the most active authorities in gathering fintech data (Graph 14). More than 50% of them report that they are already collecting data, by mobilising different types of information and a variety of sources (Box 2). In contrast, only one third of their national counterparts involved in financial regulation collect data, while the participation of NSOs in fintech data collections seem to be even less important (reported in only one tenth of the cases).<sup>12</sup>

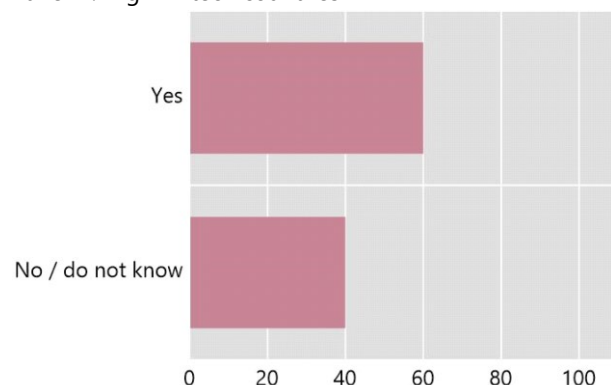
<sup>12</sup> These results should be taken with caution, in so far as they reflect the views of central banks, which may not be fully aware of the fintech-related data initiatives launched by all other public authorities in their jurisdictions.

## Are you launching statistical initiatives to close fintech data gaps?<sup>1</sup>

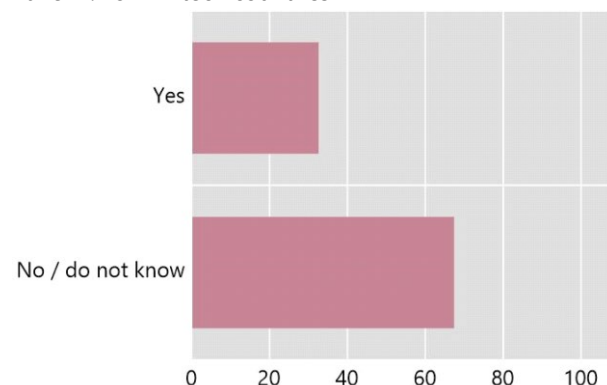
As a percentage of jurisdictions

Graph 13

Panel A: High-fintech countries



Panel B: Low-fintech countries



<sup>1</sup> Countries are classified as high or low-fintech following the CCAF(2018) index. High-fintech countries = Australia, Brazil, Canada, France, Germany, Ireland, Israel, India, Japan, Korea, Singapore, Switzerland, the United Kingdom, and the United States. The remaining countries are in the low-fintech group.

Source: IFC survey on Fintech data (2020); CCAF (2018).

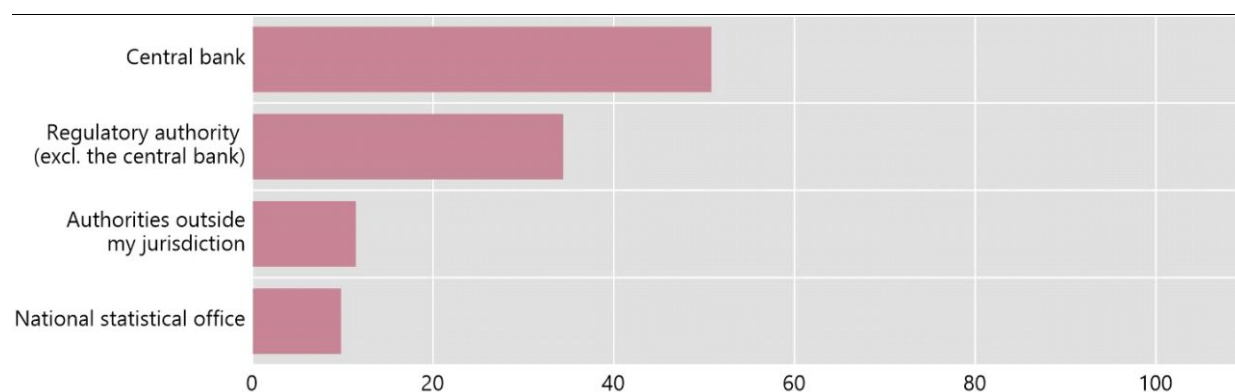
The survey provides an interesting picture of the main initiatives launched by central banks in their leading role to address fintech-related data gaps, as well as of the respective importance of these initiatives – which can reflect three main considerations: their expected benefit, their cost, and the quality of the existing statistical infrastructure.

First, and logically, the initiatives set up by central banks are those that are considered to be the most effective to close fintech data gaps (described in Section 4; see Graph 12). In particular, a significant number of central banks have already embarked on updating the lists of fintech entities (representing 70% of jurisdictions in which the central banks is actually acting to close gap; Graph 15) and collecting fintechs' financial statements (in 50% of the cases). Consistent with the lower priority attached to this area, the fraction of central banks collecting data on the usage of fintech services has so far been limited.

## Which authorities are regularly gathering information on fintech?

As a percentage of jurisdictions

Graph 14



Source: IFC survey on Fintech data (2020).

Second, a certain number of relatively low-cost actions are undertaken even though they are not considered as high priority. For instance, many central banks report using web-scraping techniques and application programming interfaces (APIs) for collecting data on crypto-assets from commercial and non-commercial data sources (ECB ICTF (2019)). Such types of actions require little resources (at least, relative to other, more critical initiatives), and are therefore relatively easy to undertake even if they do not raise strong interest among central bank users. Conversely, a number of initiatives perceived as potentially important, such as adjusting reporting requirements or collecting loan-level data, are implemented in only a limited number of jurisdictions, possibly reflecting their high implementation costs.

Box 2

## Fintech data: categories and sources

The survey suggests that four types of data can be mobilised by central banks to support ongoing fintech data collections:

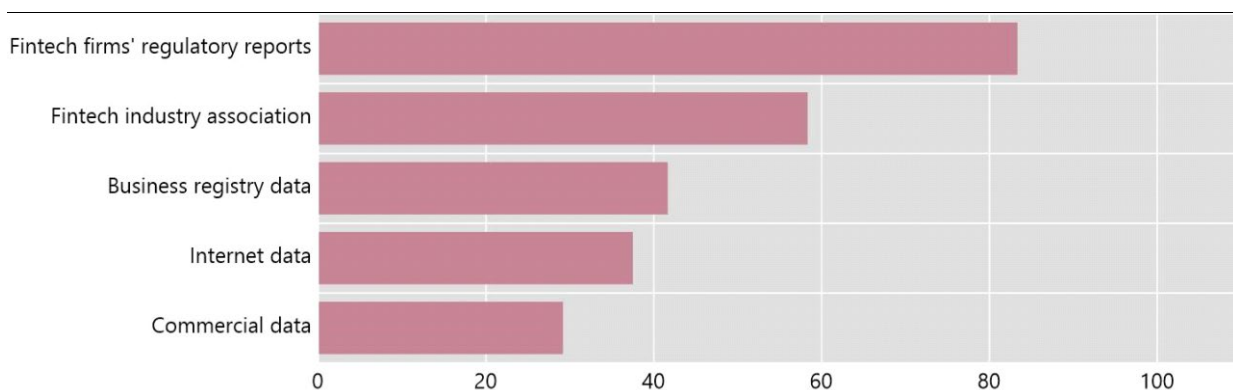
- (i) data on crypto assets; those available from the marketplace are relatively straightforward to collect
- (ii) information on the use of fintech, for instance through access surveys of households and non-financial firms that are progressively developed (see Section 3); central banks are also surveying traditional financial intermediaries to assess their degree of fintech adoption (Bank of Italy (2017), SNB (2019))
- (iii) data on big techs
- (iv) data on fintech firms, which are reported to be of the highest interest

So far, central banks are particularly engaged in the collection of data from fintech firms (Graph 15). As shown in Graph B.2., there are several types of ways to collect this information. The most preferred one (mentioned by more than 80% of the jurisdictions involved in initiatives to close fintech data gaps) is to retrieve these data from regulatory reports. A second avenue, mentioned in almost 60% of the cases, is to collect information from fintech industry associations. Yet a third way, mentioned by around one third of the relevant jurisdictions, is to rely on existing information available from the internet, commercial data providers, and business registers.

### From which data sources are you collecting data on fintech firms?

As a percentage of jurisdictions taking initiatives

Graph B.2



Source: IFC survey on Fintech data (2020).

Third, the launch of initiatives perceived as important may be delayed because they necessitate as a prerequisite the introduction of significant changes in the

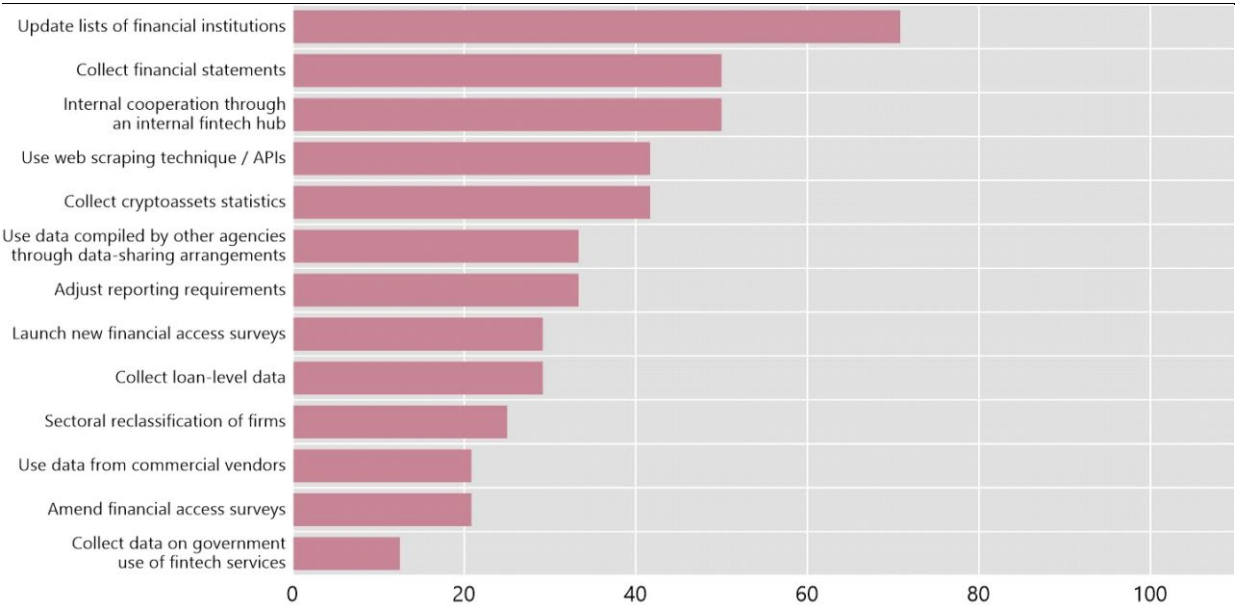
statistical infrastructure, which can take some time. For instance, before deciding to embark on collecting loan-level data, a central bank may want to set up a list of financial institutions; but this will require the correct identification of fintech firms and also the consultation of external stakeholders (eg other domestic regulatory authorities, fintech industry associations). Hence, a number of initiatives to close fintech-related data gaps can only be progressively implemented.

One additional interesting insight underscored by Graph 15 is the reported importance of strong internal cooperation (ie within central bank units) for closing data gaps. For example, some jurisdictions are relying on a dedicated hub to assess the emergence of fintech in a structured manner. In addition, such internal central bank hubs appear to facilitate cooperation with external stakeholders, including the financial industry and the large range of domestic authorities interested in fintech issues (eg ministries of finance, NSOs).

Which of the following initiatives are you implementing to close fintech data gaps?

As a percentage of jurisdictions taking initiatives

Graph 15



Source: IFC survey on Fintech data (2020).

Lastly, the survey also suggests that central bank statisticians can use fintech to enhance the production of their statistics. First, it may be easier to collect data from fintech firms: these are typically fresh and agile companies with high-quality information systems, so they can easily comply with reporting requirements by leveraging on technology (eg regtech reporting). Second, fintech firms play an important role in some market segments, such as trade finance, where data are particularly scarce (Van Wersch, 2019)); collecting details on fintech firms’ operations can thus indirectly help to shed light on other, still opaque parts of the financial system. Additionally, IT innovation enables authorities to better gathering the information they need to support their policies, for example in financial supervision (eg suptech; see Broeders and Prenio (2018) and di Castri et al (2019)).

## 6. The way forward: benefiting from cooperation at all levels

Looking forward, what is the best way to address the various and complex data issues posed by fintech? An interesting message from the survey is to focus on promoting statistical cooperation at all levels, eg within central banks, among domestic stakeholders, and internationally.

First, central banks' view is that cooperation between their internal units is instrumental to address the various and multiform statistical challenges raised by the development of fintech (Graph 16, panel A). One reason is that involving different business areas can provide complementary perspectives, allowing for more comprehensive assessments. For example, technological innovations in the provision of credit can have multiple consequences across central bank policy areas, as they raise specific issues in terms of risks, monetary transmission mechanisms, or access to financial services – areas that are of interest to the different units in charge of financial stability, monetary policy or financial inclusion.

One potential avenue for enhancing internal cooperation on fintech data issues relates to central balance-sheet offices (CBSOs), which in many countries are the bodies tasked with collecting the financial statements of non-financial corporations (including SMEs) and are mostly located within central banks (IFC (2017b)). Experience shows that CBSO information can usefully support the identification of fintech lists, although there are some challenges especially as regards the classification of fintechs between financial and non-financial corporations.

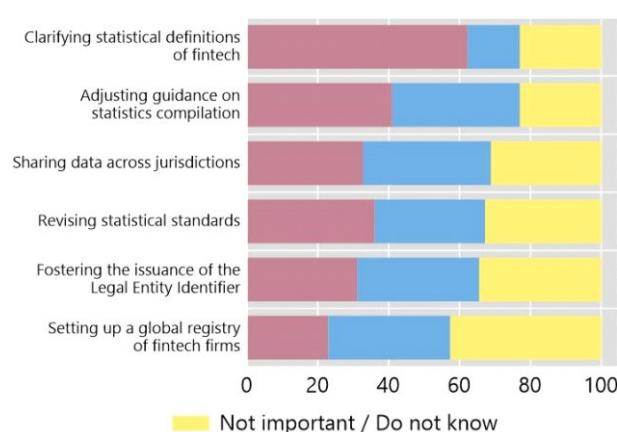
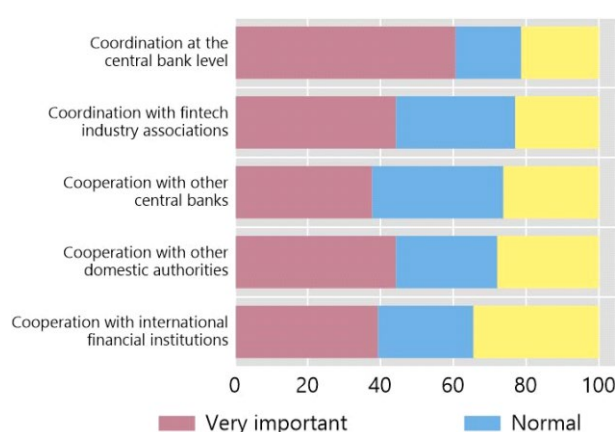
### Coordination

In per cent

Graph 16

Panel A: How important is coordination in closing fintech data gaps?

Panel B: How important are the following international initiatives in closing fintech data gaps?



Source: IFC survey on Fintech data (2020).

Second, cooperation is clearly in demand at the national level. Indeed, a considerable number of central banks emphasise the need for regular statistical coordination with other domestic stakeholders (Graph 16, panel A), with more than 40% considering this as "very important". A clear example of this need for national



cooperation is when banking supervision is located outside central banks: since fintech credit can develop within traditional banking institutions as well as through new non-bank financial intermediaries, it has to be monitored by both microprudential supervisors and the central banks that are usually involved in macro prudential/financial stability exercises. Coordination is also essential to enhance the quality of the statistics collected from various sources, for instance when defining a list of fintech firms that is consistent between the central banks compiling financial accounts and the NSOs in charge of real accounts in most countries (IFC (2020)). In addition, a number of central banks also attach significant value to coordination with the fintech industry, for example to identify the emergence of new fintechs and understand their business models.

Third, international cooperation is key, reflecting both the global nature of the financial system and the fact that digital innovation is spanning across national borders (Carstens (2018)).<sup>13</sup> Two issues deserve specific consideration from a statistical perspective: data sharing across jurisdictions and the revision of internationally-agreed statistical standards.

As regards data-sharing, many respondents have pointed to its potential effective contribution to close fintech-related data gaps (Graph 16, panel B). This looks particularly important in low-fintech jurisdictions (Box 3), where domestic customers are usually served by foreign fintech firms operating from regional hubs. There are, however, important limitations that constrain the actual exchange of confidential information across borders (IFC (2015)), despite significant progress observed since the GFC in data governance and dissemination (IFC (2019a) IMF-Eurostat-Deutsche Bundesbank (2020)).

The revision of internationally agreed statistical standards can be instrumental to ensure that statistics remain globally harmonised, which constitutes a pre-condition for performing comparative country analyses and computing meaningful regional and/or international aggregates. Furthermore, statistical harmonisation would also facilitate the monitoring of cross-border fintech activities as well as of the interactions between domestic affiliates and their parent groups (a particularly relevant issue for large big techs that are concentrated in a few locations).

International agreement is key, for example, to define the statistical classification of new financial instruments. On the one hand, fintech is leading to the emergence of new credit and equity instruments, which need to be properly accounted for in statistical frameworks. A case in point are peer-to-peer transactions, or debt and equity crowdfunding instruments. On the other hand, important steps have to be taken concerning the statistical treatment of crypto-assets, for example in the SNA, ie to decide whether they constitute financial or non-financial assets (OECD (2018), IMF (2018)). To ensure a harmonised treatment in firm-level statistics, accounting standard-setters are also refining the treatment of crypto-assets, which shall for instance be treated as intangible assets under the IFRS standards (IFRS IC (2019)).

Lastly, there are ongoing international initiatives to change business classifications, with two objectives. The first is to enhance their granularity, so as to allow the compilation of more detailed subsectors (for example in the financial accounts) and counterparty exposures. The second is to ensure that statistical

<sup>13</sup> Consistent with this need, regulatory responses to fintech exhibit a remarkable coordination, and are being supported by the work of global standard-setting bodies and other international organisations (Ehrentraud et al (2020)).



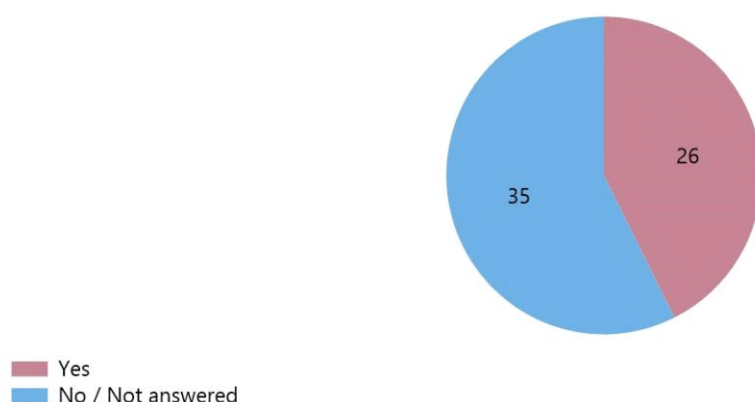
reporting is truly activity-based, by classifying financial service providers according to the economic activities they perform, independently of the embedded technological intensity in their methods of operation. To this end, sufficient concrete guidance should be developed on how to identify specific types of fintech entities. So far, central banks have mainly relied on case by case classifications (Graph 17) in the context of the high-level guidance provided for instance by the Financial Stability Board (FSB (2017)).<sup>14</sup>

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### Does your jurisdiction have a (working) definition of fintech firms?

Number

Graph 17



Source: IFC survey on Fintech data (2020).

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The global consultations on the International Standard Classification of All Economic Activities (ISIC) launched under the aegis of the United Nations constitute an opportunity to address these issues. ISIC constitutes the backbone of national statistical schemes, and its revision would allow the development of new subcategories in the so-called group K of “Financial and insurance activities”. The ultimate objective should be to ensure that rapidly developing fintech firms such as neobanks, entities engaged in crowdfunding, robo-advisers or payment service providers are adequately monitored and correctly classified as a type of financial service provider. This will guarantee that fintech activities are integrated with the core of statistics that cover the financial economy.

<sup>14</sup> Some European Union countries also follow the European Banking Authority guidelines: *Glossary for Financial Innovation* ([www.eba.europa.eu](http://www.eba.europa.eu)). As for the FSB (2017) proposal, it suggests classifying fintech firms into five categories based on their main economic activity (payments, clearing and settlement; credit; insurance; investment management; and market support). In practice, however, statisticians need more granular classifications to produce meaningful sub-sectoral breakdowns, for instance to distinguish credit institutions according to their use of leverage or to their type of liabilities.

## The expansion of fintech: implications for statistical cooperation

The rate of adoption of fintech differs across jurisdictions, and there is a risk these divergences may slow down collective efforts to deal with its statistical consequences. This risk is particularly evident given the role played by international agreements in setting up comprehensive domestic statistical frameworks. This box explores the issue.

Domestic authorities may put a premium on international cooperation when fintech is not developing domestically, as foreign providers can play a bigger role in providing financial services. But this puts a premium on international data sharing, as underlined by the survey results.

In low-fintech countries, as classified according to the CCAF (2018) index (see Section 1), central banks particularly value cooperation with other central banks, for example to assess the scope of cross-border fintech services. Insights from fintech industry associations is also rated as useful, as it can provide expert judgement and help to evaluate the impact of foreign-based fintech providers (say for example to identify those willing to acquire/develop domestic start-ups).

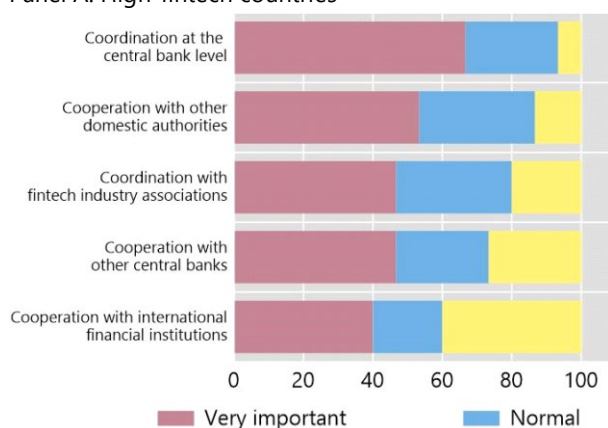
Central banks in high-fintech jurisdictions seem to focus more on internal coordination (ie within their institutions) as well as on cooperation with other national public authorities. Nevertheless, and despite a somewhat lower relative priority, cooperation with other central banks and industry associations is deemed as important as in low-fintech jurisdictions.

### How important is coordination in closing fintech data gaps?<sup>1</sup>

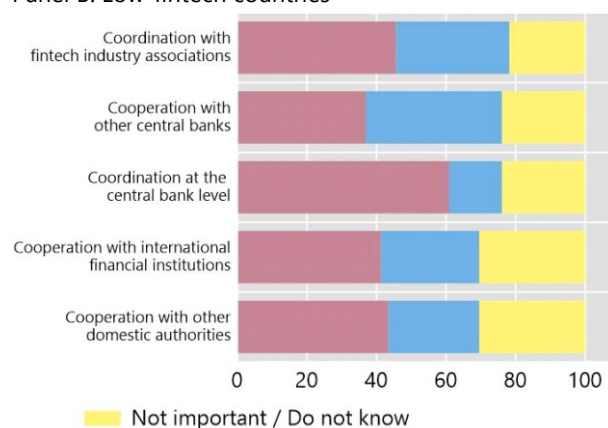
In per cent

Graph B.3

Panel A: High-fintech countries



Panel B: Low-fintech countries



<sup>1</sup> Countries are classified as high or low-fintech following the CCAF index (CCAF (2018)). High-fintech countries = Australia, Brazil, Canada, France, Germany, Ireland, Israel, India, Japan, Korea, Singapore, Switzerland, the United Kingdom, and the United States. The remaining countries are in the low-fintech group.

Source: IFC survey on Fintech data (2020); CCAF (2018).

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## Annex 1: Glossary

| Concept  | Definition   |
|--|--|
| <b>Application programming interface (API)</b> | Set of rules and specifications followed by software products to communicate with each other, and an interface between different software products that facilitates their interaction.   |
| <b>Big data analytics</b>                      | Analytical uses of massive volumes of data generated by the use of digital tools and information systems   |
| <b>Big techs</b>                               | Large, globally active technology firms with a relative advantage in digital technology.   |
| <b>Blockchain indicators</b>                   | Indicators covering on-chain transactions, ie those cleared and settled directly on the respective blockchain. For example, for the Bitcoin blockchain include the number of transactions and addresses used over time, transaction values and transaction fees.                           |
| <b>Blockchain technology</b>                   | A form of distributed ledger in which details of transactions are held in the ledger in the form of blocks of information. A block of new information is attached into the chain of pre-existing blocks via a computerised process by which transactions are validated.                    |
| <b>Business classification</b>                 | Comprehensive taxonomy of entities according to the activities they perform (eg UN ISIC). Also known as sectoral or industry classification.   |
| <b>Contactless payments</b>                    | Transmission of payment information from a physical device to the terminals at the point of sale or ATM without the need for physical contact between the physical device and the terminal. Source: CPMI Red Book Statistics.  |
| <b>Crypto-assets</b>                           | A type of private asset that depends primarily on cryptography and distributed ledger or similar technology as part of its perceived or inherent value.  |
| <b>Crowdfunding</b>                            | A practice of raising funds, equity or donation from a large number of people via an internet-based platform.  |
| <b>Demand-side statistics</b>                  | Statistics on use of basic financial services obtained from customers of financial services.   |
| <b>Distributed ledger technology (DLT)</b>     | A means of recording information through a distributed ledger. These technologies enable nodes in a network to propose, validate, and record state changes (or updates) consistently across the network's nodes - with no need to rely on a central trusted party to obtain reliable data. |
| <b>Exchanges</b>                               | Platform on which crypto-assets are traded.  |
| <b>Fintech</b>                                 | Technological innovation used to support or provide financial services.  |
| <b>Fintech credit</b>                          | Credit activity facilitated by electronic platforms whereby borrowers are matched directly with lenders.(It does not include credit by neobanks).  |
| <b>Fintech credit platforms</b>                | Platforms that facilitate various forms of credit, including consumer and business lending, lending against real estate, and non-loan debt funding such as invoice financing.  |

|  |  |
|--|--|
| <b>Fintech data gaps</b>                               | Data gaps emerging as a by-product of fintech. They encompass measurement problems in the current statistical infrastructure, and lack of data on new items.   |
| <b>Fintech firms / Fintechs</b>                        | Recently incorporated institutions that use technology-enabled innovation to provide financial services. In this survey they are classified as neobanks, and fintech credit institutions (notably fintech credit platforms), fintech insurance companies, fintech asset managers, and fintech providers of payment, settlements and clearing services. |
| <b>Fintech services</b>                                | Financial services provided using technology-enabled innovation. Examples include online lending platforms, which can be operated by traditional banks.  |
| <b>Internal fintech hub (central bank)</b>             | Hub set up by central banks to coordinate initiatives concerning fintech across business areas and departments.  |
| <b>Jurisdiction</b>                                    | In the context of this survey equivalent to country. EU countries belong to different jurisdictions.   |
| <b>International financial institutions</b>            | Supranational financial institutions, owned by governments and other public authorities. Examples include the BIS, the IMF, and the World Bank.  |
| <b>ISIC</b>  | International Standard Industrial Classification of All Economic Activities.   |
| <b>Neobanks</b>  | Newly created banks that offer mobile-only banking products and services using smartphone applications that serve as an alternative to traditional banking with bricks-and-mortar branch networks.   |
| <b>Peer-to-peer lending</b>                            | A type of fintech credit platform, where individuals or businesses are usually matched directly for lending purposes.  |
| <b>Robo-advice</b>                                     | The provision of financial advice by automated, money management providers, thereby disintermediating human financial advisers and reducing costs.   |
| <b>Smart contracts</b>                                 | Computer protocols that can execute, verify and constrain the performance of a contract.   |
| <b>Statistical definition (internationally-agreed)</b> | Definition endorsed at the international level, including the ISIC (entity-level) or the CPC (activity-level); and their mappings to regional standards.   |
| <b>Suptech</b>   | Use of fintech applications by supervisory authorities.  |
| <b>Supply-side statistics</b>                          | Statistics on use of basic financial services by customers, obtained from financial corporations.  |
| <b>Traditional financial institutions</b>              | Institutions incorporated before the advent of recent technology-enabled innovation, and engaged in financial services provision. They may be providing fintech services. Types: credit institutions, insurance companies, asset managers, and providers of payments, clearing and settlement services.  |
| <b>Web scraping</b>                                    | Technique to extract information from internet websites.   |
| <b>Working definition</b>                              | A tentative definition, without official endorsement (eg internationally agreed definition).   |

## Annex 2: IFC survey questionnaire on central banks and fintech data

Fintech, briefly described as technologically enabled financial innovation, is modifying the provision of financial services: lending; payments, clearing and settlements; asset management; and insurance provision.

Financial markets are being transformed due to the emergence of new financial service providers which leverage on technology (fintechs and big techs), and of new type of assets (eg crypto-assets). The provision or use of fintech services by traditional financial institutions constitutes a second engine of change.

Monitoring fintech requires harmonised statistical definitions and new datasets. Even more, the statistical frameworks (eg national accounts and balance of payments) need to be adjusted in order to take into account new phenomena (eg crypto-asset prices or transactions).

The endeavour is challenging, and addressing fintech data gaps may require launching various statistical initiatives. Their scale will likely differ across jurisdictions, as a result of divergences in the footprint of fintech, or in the existing statistical infrastructures.

The aim of this survey is to take stock on central banks' experiences in dealing with fintech from a statistical perspective. Questions should be answered on the basis of developments in each jurisdiction. The main terms used in this questionnaire are defined in a glossary in the Appendix.

The questionnaire is structured in seven sections. Sections 1 to 5 cover, respectively, the current statistical infrastructure; fintech gaps in statistics; users' fintech data demands; ongoing initiatives to measure fintech; and the role of international coordination. Section 6 asks for background information. Section 7 asks for links to statistical publications on fintech.

## I. Statistical infrastructure

### 1. Please describe the statistical infrastructure in your central bank by ticking the statistics that you are currently producing:

|   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| Monetary aggregates   | <input type="checkbox"/> | <input type="checkbox"/> |
| Monetary and financial institutions statistics (eg on credit) | <input type="checkbox"/> | <input type="checkbox"/> |
| List of financial firms                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| Banking supervision statistics (eg consolidated data)         | <input type="checkbox"/> | <input type="checkbox"/> |
| Balance of payments statistics                                | <input type="checkbox"/> | <input type="checkbox"/> |
| Trade statistics  | <input type="checkbox"/> | <input type="checkbox"/> |
| External debt statistics                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-financial accounts statistics                             | <input type="checkbox"/> | <input type="checkbox"/> |
| Financial accounts statistics                                 |                          |                          |
| Payment statistics  | <input type="checkbox"/> | <input type="checkbox"/> |
| Household financial access survey                             | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-financial corporations financial access survey            | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-financial corporations balance sheet statistics           | <input type="checkbox"/> | <input type="checkbox"/> |
| List of non-financial firms                                   | <input type="checkbox"/> | <input type="checkbox"/> |

#### Comments:

### 2. Please describe the statistical infrastructure on credit institutions in your central bank, ticking on the data you are currently collecting:

|                | Yes                      | No                       |
|----------------|--------------------------|--------------------------|
| Balance-sheets | <input type="checkbox"/> | <input type="checkbox"/> |
| Interest rates | <input type="checkbox"/> | <input type="checkbox"/> |
| Loans granted  | <input type="checkbox"/> | <input type="checkbox"/> |
| Default rates  | <input type="checkbox"/> | <input type="checkbox"/> |

#### Comments:

### 3. What authorities are gathering information on fintech on a regular basis?

Please mark all that apply

- ☐ Statistical office
- ☐ Central bank
- ☐ Regulatory authority (other than the central bank)
- ☐ Authorities outside my jurisdiction
- ☐ Other. Please specify:
- ☐ None
- ☐ Do not know

#### Comments:



## II. Fintech and new data gaps in statistics

### 4. Does your jurisdiction have a (working) definition of fintech firms?

- ☐ No  
☐ Yes. Please specify:

### 5. Does your jurisdiction have a (working) definition of fintech services?

- ☐ No  
☐ Yes. Please specify (and mention sub-categories, if available):

### 6. Do you think that fintech is creating gaps in central bank statistics?

- ☐ No  
☐ Yes  
☐ Do not know

#### Comments:

If you answered Yes to question 6, please answer questions 7-11

### 7. Please detail the statistics in which fintech is creating gaps, and rate the importance of these gaps:

Please indicate the severity of gaps on a scale of 1 to 5

|   | Important gaps           |                          |                          | Not important            |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Monetary aggregates                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Monetary and financial institutions (eg credit)     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| List of financial firms                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Banking supervision (eg consolidated data)          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Balance of payments statistics                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Trade statistics                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| External debt statistics                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-financial accounts statistics                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Financial accounts statistics                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Payment statistics                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Household financial access survey                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-financial corporations financial access survey  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-financial corporations balance sheet statistics | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| List of non-financial firms                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

#### Comments:

### 8. Why is fintech creating data gaps?

Please mark all that apply

- ☐ Fintech is leading to the emergence of new firms (eg entities engaged in crowdfunding), that are not or only partially covered by the regulatory perimeter

- ☐ Fintech is leading to the emergence of new firms (eg entities engaged in crowdfunding) within the regulatory perimeter, but they cannot be distinguished
- ☐ Fintech is leading to the emergence of new assets (eg crypto-assets), that are not or only partially covered by the regulatory perimeter
- ☐ Fintech is leading to the emergence of new types of services (eg crowdfunding), that are not or only partially covered by the regulatory perimeter
- ☐ Traditional financial service providers are using fintech services
- ☐ Traditional financial service providers are providing fintech services
- ☐ Other. Please specify

**9. Which of the following initiatives can be helpful to close fintech data gaps?**

| Please indicate the importance on a scale of 1 to 5   | Helpful                  |                          |                          | Not helpful              |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| <i>Amend statistical frameworks</i>   |                          |                          |                          |                          |                          |                          |
| Update lists of financial firms   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Reclassify firms across business sectors (eg technological firms as financial intermediaries) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Amend financial access surveys (households, non-financial corporations)                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Adapt the system of national accounts and related manuals (eg Balance of Payments)            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Use new techniques / sources</i>   |                          |                          |                          |                          |                          |                          |
| Use web scraping techniques / APIs  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Use data from commercial vendors  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Adjust reporting requirements   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Launch new data collections</i>  |                          |                          |                          |                          |                          |                          |
| Financial statements of new firms   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Loan-level data (eg peer-to-peer loans)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| New financial access surveys (households, firms)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Please specify other initiatives:**

**10. Are fintech data gaps related to the lack of (internationally-agreed) statistical definitions?**

Please mark all that apply

- ☐ No
- ☐ Yes, the lack of a definition of fintech firms
- ☐ Yes, the lack of a definition of fintech services
- ☐ Don't know

**11. What kind of classificatory work is needed to better understand and capture the activities of fintech?**

☐ Not yet clarified

**Other comments:**

### III. Users' data demands

If possible, this section should be answered on the basis of information from fintech data users in your central bank.

☐ I cannot answer this section (there are no fintech data users, I cannot obtain their feedback, and / or I prefer not to answer).

[The section is skipped if respondents tick on the above box]

**12. Are there fintech data needs in the following business areas?**

| Please indicate your interest on a scale of 1 to 5 | Yes, strong needs        |                          |                          |                          | No                       |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Financial stability                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Monetary policy                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Payment systems                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Banking supervision                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Research   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**13. Are there data demands on bigtechs in the following business areas?**

| Please indicate your interest on a scale of 1 to 5 | Yes, strong needs        |                          |                          |                          | No                       |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Financial stability                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Monetary policy                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Payment systems                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Banking supervision                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Research   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Please specify other data needs / demands:**

#### 14. Are the following items demanded by users in your central bank?

| Please indicate the importance on a scale of 1 to 5   | Yes, strong demand       |                          |                          |                          |                          | No                       |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|   | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| <i>Lists of fintech firms</i>   |                          |                          |                          |                          |                          |                          |
| Neobanks  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Insurance companies   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Asset managers  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Providers of payments, clearing of settlement services                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Credit platforms (peer-to-peer lenders)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Fintech credit</i>   | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Stocks  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flows   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Interest rates  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Model (eg notarised matching)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Counterparties features (location, SMEs, private)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Crypto-assets</i>  | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Prices and trading  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Market capitalisation   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Holdings  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exchanges   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Blockchain based indicators   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Supply-side information on fintech services</i>  | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Banks' in-house use of fintech (eg big data analytics)                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Banks' external use of fintech (eg outsourcing big data analytics)                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Retail fintech payments (eg digital wallets)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wholesale fintech payments (eg wholesale DLT)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Demand-side information on the use of fintech services (eg financial access surveys)</i> | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Non-financial corporations  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Households  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Government and/or states  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Direct Exposures to crypto-assets</i>  | 5                        | 4                        | 3                        | 2                        | 1                        | n/a                      |
| Banks   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Financial service providers, other than banks   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Households  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-financial corporations  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Government and/or states  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Comments:**

## IV. Ongoing statistical initiatives

### 15. Are you launching statistical initiatives to close fintech data gaps?

- ☐ No
- ☐ Yes

#### Comments:

If you are launching statistical initiatives, please answer question 16-18

### 16. Which of the following initiatives are you implementing to close fintech data gaps?

Please mark all that apply

- ☐ Updating lists of fintech firms
- ☐ Reclassifying firms across sectors
- ☐ Adjusting reporting requirements to cover fintech firms (eg neobanks)
- ☐ Amending financial access surveys (households / non-financial corporations)
- ☐ Collecting loan (transaction)-level data from fintech credit institutions (eg fintech credit platforms)
- ☐ Collecting crypto-assets statistics
- ☐ Collecting financial statements from fintech firms
- ☐ Designing financial access surveys (households / non-financial corporations)
- ☐ Collecting data on government use of fintech services
- ☐ Internal cooperation through an internal fintech hub
- ☐ Other. Please detail

#### Comments:

### 17. From which data sources are you collecting data on fintech firms?

Please mark all that apply

- ☐ Fintech firms regulatory reports (eg they are within the perimeter of regulated entities)
- ☐ Commercial data
- ☐ Business registry data
- ☐ Internet data (eg APIs / web scraping)
- ☐ Fintech industry association
- ☐ None
- ☐ Other. Please specify:
- ☐ Do not know

### 18. Has fintech (ie technologically enabled financial innovation) helped your central bank to close data gaps of your statistical infrastructure?

Please mark all that apply

- ☐ No
- ☐ Yes, to better measure cross-border payments (eg trade finance)
- ☐ Yes, since it is easing data collection (eg supotech solutions are in place)

- ☐ Yes, since it is easier to collect data from fintechs (eg credit platforms) than from traditional financial intermediaries
- ☐ Yes, other. Please specify:

**19. Do you have a special position for fintech firms in your current statistical classification system?**

- ☐ Yes
- ☐ No
- ☐ Do not know
- ☐ It depends on the statistics concerned. Please specify:

**20. If question 19 is answered with no: Do you intend to classify fintech firms separately in a new position in the future?**

- ☐ Yes
- ☐ No
- ☐ It depends on the statistics concerned. Please specify:
- ☐ Do not know

**Comments:**

## V. Coordination

### 21. Please rate the importance of coordination to close fintech data gaps:

| Please indicate the importance on a scale of 1 to 5                          | Very important           |                          |                          | Not important            |                          | n/a                      |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 5                        | 4                        | 3                        | 2                        | 1                        |                          |
| Coordination at the central bank level (eg internal fintech hub)             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cooperation with other domestic authorities (eg National Statistical Office) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cooperation with other central banks   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cooperation with international financial institutions                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coordination with fintech industry associations                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

#### Comments:

### 22. Please rate the importance of the following international initiatives to close fintech data gaps:

| Please indicate the importance on a scale of 1 to 5  | Very important           |                          |                          | Not important            |                          | n/a                      |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 5                        | 4                        | 3                        | 2                        | 1                        |                          |
| Setting up a global registry of fintech firms  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fostering the issuance of the Legal Entity Identifier  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Clarifying statistical definitions of fintech (firms and services)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Revising statistical standards / system of national accounts, balance of payments statistics (eg to better measure intangible capital) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sharing data across jurisdictions  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Adjusting guidance on statistics compilation (eg national accounts, balance-of-payments)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

#### Comments:

### 23. In which areas of measuring fintech do we need more intensive cooperation with the Statistical Offices?

☐ Not yet clarified

**24. Should international financial institutions work on centrally providing standardised information on fintech?**

- ☐ No
- ☐ Yes

**Comments:**

## VI. Background information

If possible this section should be answered by the business(es) area(s) monitoring fintech in your central bank. Questions refer to the patterns observed in your jurisdiction

- ☐ I cannot answer this section (there is no business area monitoring fintech, I cannot obtain its feedback) and / or I prefer not to answer.

[The section is skipped if respondents tick on the above box]

**25. Are there fintech firms in your jurisdiction?**

Please mark all that apply

- ☐ No
- ☐ Yes, neobanks
- ☐ Yes, fintech credit institutions
- ☐ Yes, fintech insurance companies
- ☐ Yes, fintech asset managers
- ☐ Yes, fintech providers of payments, clearing, and settlement services
- ☐ Yes, fintech firms providing other financial services. Please specify:
- ☐ Do not know

**26. Which traditional financial institutions are providing fintech services?**

Please mark all that apply

- ☐ Credit institutions
- ☐ Insurance companies
- ☐ Asset managers
- ☐ Providers of payments, clearing, and settlement services
- ☐ Other financial service providers
- ☐ None
- ☐ Do not know

**27. Which traditional financial institutions are facing competition from fintech firms?**

Please mark all that apply

- ☐ Credit institutions
- ☐ Insurance companies
- ☐ Asset managers
- ☐ Providers of payments, clearing, and settlement services



- ☐ Other financial service providers
- ☐ None
- ☐ Do not know

**28. Is fintech easing access to financial services?**

Please mark all that apply

- ☐ No, fintech is not important
- ☐ No, fintech is not easing access to financial services
- ☐ Yes, neobanks are granting credit to new segments
- ☐ Yes, fintech credit institutions (eg credit platforms) are granting credit to new segments
- ☐ Yes, traditional credit institutions are leveraging on fintech to extend credit
- ☐ Yes, fintech payment service providers are granting services to new segments
- ☐ Yes, traditional payment service providers are leveraging on fintech to provide services
- ☐ Other. Please specify:
- ☐ Do not know

**Comments:**

## VII. Catalogue of statistical publications on fintech:

Please provide link(s) to publications or research papers of your institution dealing with statistical aspects of fintech, if available in English.

## Annex 3: List of countries that responded to the survey

- |                           |  |
|---------------------------|--|
| 1. Albania                | 32. Luxembourg   |
| 2. Angola                 | 33. Macao SAR  |
| 3. Argentina              | 34. Malaysia   |
| 4. Armenia                | 35. Mauritius  |
| 5. Australia              | 36. Mexico   |
| 6. Austria                | 37. Montenegro   |
| 7. Bosnia and Herzegovina | 38. Morocco  |
| 8. Brazil                 | 39. Netherlands  |
| 9. Canada                 | 40. New Zealand  |
| 10. Chile                 | 41. Nigeria  |
| 11. Colombia              | 42. North Macedonia, Republic of                                       |
| 12. Cyprus                | 43. Norway   |
| 13. Czech Republic        | 44. Peru   |
| 14. Denmark               | 45. Philippines  |
| 15. Estonia               | 46. Poland   |
| 16. European Union        | 47. Portugal   |
| 17. Finland               | 48. Romania  |
| 18. France                | 49. Russia   |
| 19. Germany               | 50. Singapore  |
| 20. Greece                | 51. Slovakia   |
| 21. Hungary               | 52. Slovenia   |
| 22. Iceland               | 53. South Africa   |
| 23. India                 | 54. Spain  |
| 24. Ireland               | 55. Suriname   |
| 25. Israel                | 56. Switzerland  |
| 26. Italy                 | 57. Turkey   |
| 27. Japan                 | 58. Ukraine  |
| 28. Korea                 | 59. United Kingdom   |
| 29. Latvia                | 60. United States, Board of Governors<br>of the Federal Reserve System |
| 30. Lebanon               |  |
| 31. Lithuania             | 61. Uruguay  |