IMF Committee on Balance of Payments Statistics

BPM6/2008 SNA Update
Joint Financial and Payments Systems Task Team (FITT)

Inter-secretariat Working Group on National Accounts

FOR GLOBAL CONSULTATION

F.7 Impact of Fintech on Macroeconomic Statistics

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This guidance note (GN) discusses the implications, from a statistical point of view, of new financial products, services, technologies, players, and access modes introduced by fintech. It puts forward recommendations to ensure that fintech-induced transactions and positions are adequately covered in the next edition of the Balance of Payments and International Investment Position Manual and the System of National Accounts.

SECTION I: THE ISSUE

BACKGROUND

1. Fintech is defined by the Financial Stability Board (FSB) as "technology-enabled innovation in financial services that could result in new business models, applications, processes, or products with an associated material effect on the provision of financial services."[2] This guidance note (GN) discusses the impact of fintech on macroeconomic statistics based on the FSB definition.[3] The conceptual frameworks of the *System of National Accounts 2008 (2008 SNA)* and the sixth edition of the *Balance of Payments and International Investment Position Manual (BPM6)* implicitly cover and provide classification principles for many of the financial innovations such as new entities (e.g., fintech firms), instruments, and technological processes introduced through fintech during the last decade. However, since the current versions of the manuals were finalized, they have not provided explicit guidance for compilers to sectorize fintech companies and record fintech-related transactions and positions in spite of the rise of fintech. For instance, neither the term "fintech" nor the relevant products and technologies are referenced in the *2008 SNA* or the *BPM6*.

2. The international statistical framework needs to take into account these developments to properly capture them in financial and macroeconomic statistics.[4] At this important juncture of the update of the international statistical standards, in particular the *2008 SNA* and the *BPM6*, this GN aims to take a holistic overview of the fintech implications on macroeconomic statistics. The GN also acknowledges that any methodological guidance should allow for flexibility given the rapid changing nature of the fintech landscape.

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[2] FSB (2019). While there are a number of fintech definitions introduced by international and national organizations, this definition links the technological aspect of fintech with financial services. This definition could also be used to discuss fintech-related issues in the updated manuals and compilation guides.

[3] However, this definition cannot be directly applied to statistical standard as technologies are rapidly evolving in time. Innovation today would not be such in the future, so statistical classifications could not be determined based on the concept of innovation today.

[4] Fintech is also one of the key data gaps that would be addressed as part of the planned new G-20 Data Gaps Initiative.

3. With other workstreams looking into certain topics related to fintech,[5] it is important to ensure consistency and coordination in the recommendations of the various GNs in the update of the *2008 SNA* and the *BPM6*. These topics include the broader discussion on digitalization and are reflected in GN B.14 "Treatment of Digital Economy" (see the Compendium of Research Issues for the *BPM6* update), which mainly focuses on the valuation of data and free products. The Financial and Payments Systems Task Team (FITT) works on more disaggregated definitions of the financial corporations sector and financial instruments (FITT GN F.1) and on non-bank financial intermediation (FITT GN F.6). These other GNs are also relevant for the fintech discussion given that they look into the subsectors of the financial corporations sector. In addition, the Advisory Expert Group (AEG) on National Accounts Task Team on Digitalization (DZTT) is working on the development of digital supply and use tables, artificial intelligence, and the recording and valuation of data and free products in the context of national accounts.[6] Finally, the treatment of crypto assets (covering both Bitcoin-like crypto assets and digital tokens) and central bank digital currencies (CBDCs) is covered in a separate joint FITT/ DZTT GN F.18 "The Recording of Crypto Assets in Macroeconomic Statistics".[7, 8]

ISSUES FOR DISCUSSION

4. From a statistical point of view, it is important to consider how fintech could affect the building blocks of statistical methodology, in particular, the institutional units, sectors, the application of the concept of residence, instrument classification, and the international statistical classification standards. To this end, there is a need to identify fintech services, products, and companies that are involved in fintech activities.

Institutional Units and Sectors

5. Fintech companies provide financial services/products enabled by technological innovations and by those that provide the underlying digital technology supporting the provision of financial services. These institutions are a diverse group of entities ranging from small start-ups to large technology firms (i.e., big techs). Traditional depository corporations (incumbents) may also offer financial services and products deploying new technological solutions but generally would not be considered "fintech companies."

6. Fintech companies are a diverse group of entities whose activities cut across the different sectors/subsectors of the economy, and they should be classified within the institutional sectors/subsectors corresponding to the nature of their activities. For example, the *2008 SNA*, the

[5] The Irving Fisher Committee on Central Bank Statistics (IFC)'s survey on fintech & financial inclusion data issues at central banks also found that it is key that fintech entities be adequately covered in the statistical reporting perimeter (See IFC, 2020).

[6] Moreover, the GNs C.4 "Merchanting and Factoryless Producers, Clarifying Negative Exports in Merchanting, and Merchanting of Services" and C.6 "Trade in Services Classification" also discuss the recording of cross-border flows related to digital intermediation platforms and the impact of digitalization.

[7] This joint FITT/DZTT GN builds on the already existing work that was outlined in the BOPCOM 18/11 and an interim AEG paper.

[8] The IMF Paper "Measuring the Digital Economy" (IMF, April 2018) discusses the measurement of digital economy in GDP and in productivity statistics. It also raises measurement issues and new data needs for national accounts, external sector statistics, and monetary and financial statistics.

BPM6, and *the Monetary and Financial Statistics Manual and Compilation Guide (MFSMCG)* classify financial institutions other than deposit-taking institutions (or depository corporations as defined in the *MFSMCG*) in the broad category of "other financial corporations" into which many fintech companies will fall. Some institutions that provide fintech related services may be classified outside the financial sector (as nonfinancial corporations) if the provision of financial services is not their main function.

7. This GN considers that introducing an additional subsector for "fintech companies" in the updated manuals would not be feasible. An "of which" category could be introduced as subsector classifications from an institutional perspective. However, the separation of fintech institutions may prove challenging as they are sometimes intertwined with traditional financial services/products. In addition, as fintech becomes more mainstream, it would be even more embedded into the traditional financial services making it irrelevant to separate from the traditional ones.

8. The Task Team on International Standard Industrial Classification (TT-ISIC) is considering a proposal to classify fintech related activities in Section K – Financial Services. Depending on the results of the discussion, institutional sector breakdowns for fintech companies in the BPM and SNA could be revisited.

Residence

9. In principle, the concept of residence is unaffected by fintech in the sense that fintech entities are residents of the economy where they have their center of predominant economic interest; however, new technologies may bring additional compilation challenges, especially in the cross-border context. For example, the use of electronic-money (e-money) for cross-border payments at a significant scale can challenge the residency-based compilation of macroeconomic statistics as compilers may have limited access to financial service providers (issuers of private currencies or e-money) located in other jurisdictions. In addition, the smart contracts in decentralized finance (DeFi) transactions[9] or crypto assets without a legal issuer could further complicate the identification of residency of the entities involved in fintech. The statistical concept of residency of corporations with little or no physical presence could apply in those cases where the DeFi arrangement allows for the identification of the economic territory under whose laws the entity is incorporated or registered. If there is no incorporation or registration, legal domicile is used as a criterion. However, in those cases where even the legal domicile is unknown or where no legal issuer exists, it would be challenging to attribute residency. These compilations issues should also be discussed in the compilation guides for the next edition of BPM and SNA.[10]

[9] DeFi is a blockchain-based financial ecosystem which uses smart contracts instead of relying on intermediaries (e.g., Ethereum).

[10] The DZTT work on price and volume measurement of goods and services affected by digitalization and on digital intermediation platforms is assessing options to capture the activities of platforms and providers of new digital products which tend to be located in specific territories.

Examples of Fintech Services

Payments Services Enabled by Fintech

10. The key fintech-enabled products that contribute to payment services are electronic money (e-money), digital currencies (e.g., CBDCs), and other crypto assets.[11]

11. E-money is defined in the *MFSMCG* (paragraphs 4.38–4.41) as a payment instrument whereby monetary value is electronically stored on a physical device or remotely at a server and represents a claim on the issuer.[12] To be classified as e-money, the payment instrument must represent general purchasing power (i.e., it may be used for making direct payments to a variety of other entities). E-money that can be used for direct payments to third parties, from a statistical perspective, is no different from bank deposits and is to be classified as transferable deposits, as per the recommendation of the *MFSMCG* (paragraph 4.38). Other examples of e-money include prepaid cards that are sometimes referred to as stored value facilities (except those designed to address specific needs and that can be used only in a limited way); and web-based e-money (such as PayPal if monetary value is electronically stored).

12. The *MFSMCG* (paragraph 4.93) considers mobile money as a form of e-money accessible via a mobile phone or a mobile device to make direct payments to third parties. The IMF's Financial Access Survey (FAS)[13] defines mobile money as a pay-as-you-go digital medium of exchange and store of value using mobile money accounts, facilitated by a network of mobile money agents.[14] It is a financial service offered to its clients by a mobile network operator (MNO) or another entity that partners with MNOs. A recent IMF Working Paper (Shirono, et al. 2021) elaborates the statistical treatment of mobile money in monetary statistics, including its implications for broad money under different mobile money business models, using the guidance provided in the *MFSMCG.*

13. This GN recommends that the next edition of the SNA and BPM include explicit guidance on the treatment of "e-money" including "mobile money" consistent with the *MFSMCG*. According to the *MFSMCG,* e-money, including when used for cross-border payments, is classified as "deposits" rather than currency. E-money that meets the definition of broad money should be included in broad money within transferable deposits.

Deposits and Lending

14. Peer-to-Peer (P2P) lending companies, marketplace lending platforms (including DeFi) are facilitating lending of money from individuals and other lenders, often unsecured[15] to unrelated

[11] As mentioned above, the issue on crypto assets and central bank digital currencies will be dealt with in a separate GN.

[12] Not all electronic payments involve e-money. For instance, credit cards, debit cards or store cards are not e-money because no monetary value is stored on them that can be used to make direct payments to third parties.

[13] See Espinosa et. al (2020)

[14] See IMF's Financial Access Survey Guidelines at (https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&sId=1460040555909). See also Espinosa-Vega, et al. 2020.

[15] DeFi is generally collateralized by crypto assets.

individuals or small businesses, circumventing traditional financial intermediaries (IMF 2018). Within the *2008 SNA* and the *BPM6*, all sectors can be potential providers of loans, including households. Platforms that facilitate P2P lending, but do not take ownership, would, a priori, appear to be financial auxiliaries (*BPM6*, paragraph 4.79). As with other fintech functions, an explicit reference to this activity in the updated SNA and BPM would be useful, like it is done in the *MFSMCG* (paragraph 3.179).

Insurance

15. InsurTech is an abbreviated term for insurance technology and refers to innovative technologies and new digital tools developed to optimize the performance of insurance companies (International Association of Insurance Supervisors 2017). Similar to the other areas of fintech innovations, fintech improves the efficiency of (re)insurance business, helps deliver better customer experience and unlocks the potential of advanced analytics without significantly altering the nature of the financial service. For instance, reinsurance companies which are more active in the cross-border insurance market, and heavily rely on artificial intelligence are better equipped to predict certain disasters (e.g., climate change related natural disasters) or longevity using big-data. Another example for fintech related innovation in the insurance sector is "smart contracts" which refer to the possibility of representing a legal contract in a programming code that gets automatically executed on a blockchain or other distributed ledgers (Marano and Noussia 2019). This highlights the complexity of measuring efficiency gains through technology.

16. InsurTech activities are already implicitly covered by the existing conceptual statistical framework, but it could be useful to include a brief section on "insurance-related fintech activities" in the updated SNA and BPM. Considering that InsurTech relates to the insurance business itself, it does not require a new sectoral classification beyond insurance companies which are currently classified under the other financial corporations' sector.

Other Financial Services

17. Other financial services that are being enabled by fintech (i.e., capital raising, investment management, and market provisioning) do not require amendments in the statistical methodology. Capital raising through crowdfunding can take the form of equity-based funding and funding for sponsorship/philanthropic reasons (under *BPM6* and *2008 SNA* methodology, the former would be recorded as investment in equity and the latter as current transfers). The platforms that facilitate this activity again would, a priori, appear to be financial auxiliaries but as always classification decisions would depend on individual circumstances. Asset management is covered as part of the financial services in *BPM6* and *2008 SNA* without specific references to the fintech enabled services. Fintech will also improve the flow of information between the market players through new market connection platforms.

18. In addition, big tech companies may also be providing financial services enabled by technologies. In these cases, they are classified as NFCs, according to their main business characteristics. Companies that do not provide insurance services but provide the underlying technology are also classified as NFCs. In cases where NFCs establish subsidiaries that are engaged in the provision of financial services, these subsidiaries are classified according to their main characteristics (e.g., OFCs) while the parents remain as NFCs.

SECTION II: OUTCOMES

19. This GN finds that existing international statistical standards allow for proper treatment and recording of fintech companies and fintech related activities in most cases. Therefore, the GN does not recommend introducing separate sectors or financial instruments for fintech, but rather proposes to consider introducing an "of which" category for fintech companies within the subsector classification if a country has a strong need to separately identify them. Such an "of which" category may also be considered for instruments or services classifications where necessary (e.g., for CBDCs or crypto assets, or financial services provided by fintech platforms) to separate out fintech-related instruments and services. Targeted data collection including through surveys should be conducted to meet data needs for specific fintech-related activities (e.g., credit extended by fintech companies, asset management by fintech), which can be designed to meet specific policy and user needs and be modified more flexibly to accommodate ongoing developments in fintech activities.[16] However, this GN recognizes the need to elaborate on the concepts to guide the data compilers and users for their appropriate classification. Also, in very specific cases (e.g., crypto assets), additional methodological guidance is required. Such methodological guidance is discussed in specific GNs such as F.18 on the recording of crypto assets.

20. While the existing statistical methodology allows for capturing most fintech related concepts, there are challenges associated with compilation. Whereas technology could improve the transparency of transactions and improve the availability of data, there are a number of compilation challenges that will need to be addressed including source data availability. Two such examples are the decomposition of spending on fintech technologies between intermediate consumption, final consumption, and gross fixed capital formation and the treatment of applications (i.e., smart phone apps) with multiple uses that include fintech services. Thus, data compilers may need practical guidance on collecting data related to fintech services/products. The practical compilation issues should be addressed by compilation guides. The compilation guides could be prepared using outcomes of the relevant GNs (e.g., F.18 on the recording of crypto assets and the DZTT GNs that deals with digital products/services).

21. Based on the discussions above, this GN proposes the below recommendations for addressing fintech related concepts in the updated SNA and BPM:

> ***Recommendation 1:*** *Fintech companies should be classified within the existing institutional sectors/subsectors depending on the economic objectives, functions, and behavior (see* BPM6*, paragraph 4.57 and subsection 3 in Chapter 4 of the* 2008 SNA*) without introducing a new sector "Fintech". Depending on the results of the discussion by the TT-ISIC, institutional sector breakdowns for fintech companies in the BPM and SNA could be revisited.*
>
> ***Recommendation 2:*** *Depending on their statistical and analytical needs, countries with significant fintech activities could consider introducing an "of which" category from an institutional perspective (i.e., which institutions may be considered as fintech companies). "Of which" categories could be introduced at the sector level (e.g., other sectors in ESS) or the sub-sector level (e.g., other financial corporations) reflecting specific needs of the country. However, the compilers should be aware that*

[16] For example, the FSB's annual monitoring exercise on non-bank financial intermediation aims to collect data on Fintech lending through additional questions if they are reported separately by the relevant jurisdictions (See FSB 2020c).

such "of which" categories could become irrelevant in some years, given the fast developments in technologies (e.g., fintech today could become a traditional way to provide services tomorrow).

Recommendation 3: *Financial instruments and services provided by fintech should be classified in the existing categories of the macroeconomic statistics (e.g., deposits, financial services) without introducing new financial instruments or services categories. New manuals and guides should elaborate on the description and the statistical recording of items that require clarification (e.g., insurance-related fintech activities, peer-to-peer lending, other fintech enabled activities such as capital raising though crowdfunding).*

Recommendation 4: *The new edition of BPM and SNA should include explicit guidance on "e-money" including "mobile money" consistent with the* MFSMCG *to indicate that e-money that can be used for direct payments to third parties, including when used for cross-border payments, is to be classified as transferable deposits.*

Recommendation 5: *Compilation guides for the next edition of BPM and SNA should address compilation issues related to fintech. Compilation guides can also use the recommendations of other GNs (e.g., the GNs by the DZTT on digital products/services) to provide guidance to compilers.*

22. FITT members showed strong support to the recommendations of this GN, including classifying fintech companies within the existing institutional sectors without introducing a new "fintech sector". Members also supported the separate identification of fintech companies within supplementary "of which" categories for countries that have a strong need to identify them separately in the SNA and the BPM. However, some members indicated the risk of fragmented data, particularly if "of which" categories are introduced at the subsector level, and underlined the challenges in defining fintech in the statistical context because fintech today could become a traditional way of providing financial services tomorrow. Members also indicated compilation challenges because the traditional surveys might not be able to capture some fintech activities (e.g., those by households). These compilation challenges should be continuously discussed reflecting the latest developments in fintech. One author of this GN suggested an international initiative to explore source data from commercial data providers. These issues could be further discussed and included in the updated compilation guides.

Questions for Discussion:

1) *Do you agree with the recommendations provided above?*
2) *Are you aware of other fintech or financial innovations that may be relevant from the perspective of macroeconomic statistics including any other payment services by fintech?*
3) *Do you have any other recommendations related to fintech?*

References

Adachi M, Cominetta M., Kaufmann C. and Anton van der Kraaij, 2020. "A Regulatory and Financial Stability Perspective on Global Stablecoins", Macroprudential Bulletin, Issue 10, ECB, Frankfurt am Main, March.

Basel Committee for Banking Supervision (BCBS), 2018. "Sound Practices on the Implications of Fintech Developments for Banks and Bank Supervisors", February.

Cambridge Centre for Alternative Finance, 2018. "2018 Global FinTech Hub Report"

Codruta Boar, Henry Holden and Amber Wadsworth, 2020. "Impending arrival – A Sequel to the Survey on Central Bank Digital Currency", BIS Papers No: 107, January.

Committee on Payments and Market Infrastructures (CPMI), 2018, "Cross-border Retail Payments", February.

CPMI and the World Bank Group, 2020. "Payment Aspects of Financial Inclusion in the Fintech Era", CPMI Papers No:191, April.

CPMI, 2020, Stage 2 Report: Enhancing cross-border payments: building blocks of a global roadmap, July.

Dong He, Ross B Leckow, Vikram Haksar, Tommaso Mancini Griffoli, Nigel Jenkinson, Mikari Kashima, Tanai Khiaonarong, Celine Rochon & Hervé Tourpe, 2017. "Fintech and Financial Services Initial Considerations" IMF Staff Discussion Note, June.

Espinosa-Vega, Marco, Kazuko Shirono, Hector Carcel Villanova, Esha Chhabra, Bidisha Das, Yingjie Fan, 2020. "Measuring Financial Access: 10 Years of the IMF Financial Access Survey," IMF Departmental Paper No.20/08, May.

Financial Stability Board (FSB). 2020a, "Enhancing Cross-border Payments, Stage 1 Report to the G-20: Technical Background Report", April.

Financial Stability Board (FSB). 2020b, "Enhancing Cross-border Payments: Stage 3 Roadmap", October.

FSB. 2020c, "Global Monitoring Report on Non-Bank Financial Intermediation 2020", December.

FSB. 2019, "FinTech and Market Structure in Financial Services: Market Developments and Potential Financial Stability Implications", February.

FSB, 2017. "Financial Stability Implications from FinTech: Supervisory and Regulatory Issues that Merit Authorities' Attention", June.

Financial Stability Institute (FSI), 2020. "Policy responses to fintech: a cross-country overview", FSI Insights No:23, January.

G20 Finance Ministers and Central Bank Governors Meeting in Riyadh, 2020, "Communiqué: Realizing Opportunities of the 21st Century for All", February.

Global System for Mobile Communications (GSMA), 2017. "Guidelines on International Remittances through Mobile Money", September.

IMF, Financial Access Survey (FAS) Guidelines,

IMF 2018. Marshall Reinsdorf, Gabriel Quirós, and STA Group, 2018. “Measuring the Digital Economy”. IMF Staff Report, April.

IMF Committee on Balance of Payments Statistics, Thirtieth meeting, 2017. “Compiling Data on International Mobile Money Transfer Services”, BOPCOM 17/11, October.

IMF Committee on Balance of Payments Statistics, Thirty-first meeting, 2018. “Treatment of Crypto Assets in Macroeconomic Statistics”, BOPCOM 18/11, October.

International Association of Insurance Supervisors (IAIS), 2017. “FinTech Developments in the Insurance Industry”, February.

Irving Fisher Committee on Central Bank Statistics, 2020, “Central Banks and Fintech Data Issues”, February.

Kazuko Shirono, Bidisha Das, Yingjie Fan, Esha Chhabra, and Hector Carcel-Villanova, 2021, IMF Working Paper, WP/21/177, “Is Mobile Money Part of Money? Understanding the Trends and Measurement”, July.

Mancini-Griffoli, Tommaso, Maria Soledad Martinez Peria, Itai Agur, Anil Ari, John Kiff, Adina Popescu, and Celine Rochon. 2018. "Casting Light on Central Bank Digital Currency," IMF Staff Discussion Note, November.

OECD, WTO, IMF, 2019. “Handbook on Measuring Digital Trade”, October.

Pierpaolo Marano, Kyriaki Noussia, 2019, InsurTech: A Legal and Regulatory View, pp 101-125, “Smart Contracts in Insurance: A Law and Futurology Perspective”, December

Ratecka, Patrycja, 2020. “FinTech—Definition, Taxonomy and Historical Approach”.

Ratna Sahay; Ulric Eriksson von Allmen; Amina Lahreche; Purva Khera; Sumiko Ogawa; Majid Bazarbash; Kimberly Beaton, 2020, “The Promise of Fintech: Financial Inclusion in the Post COVID-19 Era”, IMF Departmental Papers, July.

US Department of Treasury, 2018. “A Financial System that Creates Opportunities: Nonbank Financials, Fintech and Innovation”, July.