Regulation of information flows as Central Bank functions?

Implications from the treatment of Account Aggregators by the Reserve Bank of India

Malavika Raghavan and Anubhutie Singh[1]

Abstract

This paper seeks to understand the role of the Indian Central Bank in regulating information flows through Account Aggregators. These are licensed entities exclusively dedicated to collecting, retrieving and sharing customers' financial information with other financial entities with the customers' consent. By regulating Account Aggregators as non-bank providers, the Reserve Bank of India (RBI) has opened up many foundational questions for Central Banking regulation. This paper investigates the issues that emerge for regulatory consideration, by tracing the evolution of the RBI's regulatory approach to Account Aggregators. It then considers the regulatory approach taken by the Kingdom of Bahrain and the European Union (EU) to regulate "account information services" pursuant to broader Open Banking mandates.

The analysis is used to respond to the central question driving this enquiry: *Should Central Banks regulate and enable the flow of personal information?* In doing so, the paper addresses the RBI's approach in the Master Directions on Non-Banking Financial Company - Account Aggregator, 2016. We propose specific changes to anchor the Master Directions to the Central Bank's core mandate and objectives, and to harmonise it with the broader regulatory rubric for data protection in India.

Paper for the 2020 Central Bank of the Future Conference
Future of Finance Initiative, Dvara Research
September 2020

---

[1] Malavika Raghavan and Anubhutie Singh are the Head and Policy Analyst respectively at the Future of Finance Initiative at Dvara Research. We are grateful to Ariadne Plaitakis and Stefan Staschen for their thoughtful comments, and to Srikara Prasad for his engagement and assistance on reviews. All errors and omissions remain those of the authors. Comments and feedback are welcomed at malavika.raghavan@dvara.com, anubhutie.singh@dvara.com and ffi@dvara.com.

Electronic copy available at: https://ssrn.com/abstract=3924793

Table of Contents

1. Introduction: Data-driven Finance and India's Central Bank....3
2. Account Aggregators in India....4
   2.1. Key definitions and actors in the Account Aggregator system....4
   2.2. The information flows imagined within the Account Aggregator system....6
   2.3. Key properties of the Account Aggregator system in India....7
3. The RBI's legal basis and approach to classification of NBFCs....8
   3.1. RBI's Approach to the classification of NBFCs by activities....8
4. The evolution of the RBI's approach to regulating NBFC-AAs: Shifting goal posts....10
   4.1. Change in the definition of "business of an account aggregator"....10
   4.2. Extension of the purposes for which Account Aggregators may access and transmit customer information....11
   4.3. Unpacking the RBI's classification of Account Aggregators as NBFCs....12
5. Rationale for regulation of financial information flows in other jurisdictions: Parallels from the Kingdom of Bahrain and UK's Open Banking regime....15
   5.1. Bahrain....16
   5.2. European Union....19
6. Conclusion: Should Central Banks regulate and enable the flow of personal information?....24
   6.1. Central Banks should not regulate the processing and sharing of personal information unless it is directly related to the provision of a financial service....25
   6.2. The change in the nature of activities NBFC-AAs perform calls into question the appropriateness of their regulatory form....26
   6.3. Policy proposals to align the Master Directions with Central Banking objectives and the wider regulatory landscape....27

Electronic copy available at: https://ssrn.com/abstract=3924793

1. Introduction: Data-driven Finance and India's Central Bank

India's Central Bank, the Reserve Bank of India (RBI), has enabled the creation of several new digital infrastructures since 2015. These data infrastructures are different from the largescale digitisation of Indian Central Banking systems that took place in the 1990s and early 2000s, as they do not merely seek to improve the effectiveness of analogue processes through digitisation. Instead, these infrastructures are aimed at harnessing customer data from financial transactions to provide insights to a range of actors and to meet a range of Central Banking objectives.

Some of these architectures are being built by the RBI itself, such as the proposed Public Credit Registry which will consolidate various types of financial and non-financial data about individuals and entities currently held across different databases (Raghavan, Chugh, & Singh, 2019). Others are created by agencies of the Government of India (such as the e-KYC API launched by the Unique Identification Authority of India, and used with India's Aadhaar database) or private players and recognised through financial sector regulation—like Account Aggregators.

Account Aggregators are of particular interest as they create specific regulatory and technical infrastructure purely for data aggregation and sharing. They are entities that are exclusively dedicated to collecting, retrieving and sharing users' financial information with other financial entities with the users' consent (Raghavan, Chugh, & Singh, 2019, p. 3).

The first official public indication of the RBI's intention to put in place a regulatory framework for Account Aggregators came in July 2015, in a press release following a meeting of the RBI's Central Board (The 2015 Press Release) (Reserve Bank of India, 2015). This is an important document from which to begin the analysis of the regulatory evolution of Account Aggregators in India, despite only two sentences being dedicated to the idea. The 2015 Press Release reveals that the RBI:

- saw the role of Account Aggregators as enabling "*the common man to see all his accounts across financial institutions in a common format*"; and
- intended to cast Account Aggregators as a new kind of Non-Banking Financial Company (NBFC) (Reserve Bank of India, 2015).

This pronouncement was significant for two reasons. First, it indicated that the RBI intends to treat Account Aggregators as NBFCs—a regulatory form that until recently was used by the RBI to identify, licence and regulate companies which specialise in delivering credit to a variety of niche segments (Reserve Bank of India, 2019b, p. 99). Second, it showed that the initial idea of Account Aggregators as understood by the RBI was as providers of "*account information services*" i.e. of consolidated views to a person of all their accounts across financial institutions.

The final form regulations that emerged from the RBI in 2016, however, revealed a shift in the regulatory conceptualisation of Account Aggregators. Rather than merely providing account information in a consolidated view to consumers, Account Aggregators were cast as information transfer utilities that enable flows of customers' personal financial information between financial sector entities (while being data "blind" themselves) with the consent of customers.

In this context, this paper seeks to understand the role of the Indian Central Bank in regulating information flows through Account Aggregators. By regulating Account Aggregators as non-bank providers, the RBI has opened up many foundational questions for Central Banking regulation. This paper investigates the issues that emerge for regulatory consideration, by tracing the evolution of the RBI's regulatory approach to Account Aggregators. It then considers the regulatory approach taken the Kingdom of Bahrain and the European Union (EU) to regulate "account information services", pursuant to broader Open Banking mandates.

The analysis is used to respond to the central question driving this enquiry: *Should Central Banks regulate and enable the flow of personal information?* In doing so, the paper addresses the RBI's approach in the Master Directions on Non-Banking Financial Company - Account Aggregator, 2016. We propose specific changes to anchor the Master Directions to the Central Bank's core mandate and objectives, and to harmonise it with the broader regulatory rubric for data protection in India.

Electronic copy available at: https://ssrn.com/abstract=3924793

2. Account Aggregators in India

Four key documents help trace the evolution of the regulatory conceptualisation of Account Aggregators in India. These are:

- the 2015 Press Release (Reserve Bank of India, 2015);
- the RBI's 2016 draft Directions regarding Registration and Operations of NBFC–Account Aggregators under section 45-IA of the Reserve Bank of India Act, 1934 (draft Directions) (Reserve Bank of India, 2016a);
- the RBI's final Master Direction- Non-Banking Financial Company - Account Aggregator (Reserve Bank) Directions, 2016 (Master Directions) (Reserve Bank of India, 2016c), and
- the Technical Specifications for Application Programming Interfaces (APIs) to be used by all participants of the Account Aggregator ecosystem (Technical Specifications) (Reserve Bank of India, 2019a).

From a review of these documents present in the public domain, we understand that the purpose of Account Aggregators as it presently stands is to act as data intermediaries that will collect and share consumers' financial information securely from a range of entities who hold the consumers' data (defined as Financial Information Providers) to a range of entities requesting their data (defined as Financial Information Users) with the relevant consumer's consent.

Following the release of the Master Directions, the RBI invited applications from entities seeking to be licensed as Non-Banking Financial Company- Account Aggregators (NBFC-AAs). Licences for India's first NBFC-AAs were issued in 2018 (Lakshmanan, 2018). In 2019, DigiSahamati Foundation was founded as a "collective" for Account Aggregators. This Foundation aims to work with Account Aggregator entities and assist them in operationalising and implementing their technical infrastructures in line with the RBI Master Directions (DigiSahamati Foundation, 2019a).

In 2018, seven entities were given in-principle Account Aggregator licences from the RBI. At the time of writing, some of these entities have been granted an operating licence. These entities are CAMS FinServ, Cookiejar Technologies Pvt. Ltd. (AA product name: Finvu), FinSec AA Solutions Private Limited (AA product name: OneMoney) and NESL Asset Data Limited (DigiSahamati Foundation, 2020).

2.1. Key definitions and actors in the Account Aggregator system

The types of customer financial information that can be shared, as well as the entities that can provide and request this information, are very widely defined in the Master Directions.

The financial information pertaining to customers that can be shared by Account Aggregators is defined in Direction 3(1)(ix) of the Master Directions as,

"…*information in respect of the following with financial information providers:*

a) bank deposits including fixed deposit accounts, savings deposit accounts, recurring deposit accounts and current deposit accounts,
b) Deposits with NBFCs
c) structured Investment Product (SIP)
d) Commercial Paper (CP)
e) Certificates of Deposit (CD)
f) Government Securities (Tradable)
g) Equity Shares
h) Bonds

Electronic copy available at: https://ssrn.com/abstract=3924793

i) *Debentures*
j) *Mutual Fund Units*
k) *Exchange Traded Funds*
l) *Indian Depository Receipts*
m) *CIS (Collective Investment Schemes) units*
n) *Alternate Investment Funds (AIF) units*
o) *Insurance Policies*
p) *Balances under the National Pension System (NPS)*
q) *Units of Infrastructure Investment Trusts*
r) *Units of Real Estate Investment Trusts*
s) *Any other information as may be specified by the Bank for the purposes of these directions, from time to time*".

Such financial information pertaining to a customer is envisioned to be shared from institutions that currently hold them i.e. the Financial Information Providers (FIPs).

A vast swathe of institutions will be FIPs for the purposes of the Account Aggregator System. As per Direction 3(1)(xi) of the Master Directions:

> *""Financial information provider" means bank, banking company, non-banking financial company, asset management company, depository, depository participant, insurance company, insurance repository, pension fund and such other entity as may be identified by the Bank for the purposes of these directions, from time to time"*.

FIPs will share customers financial information through Account Aggregators to any entity that is a Financial Information User (FIU). Direction 3(1)(xiii) of the Master Directions states:

> "*"Financial information user" means an entity registered with and regulated by any financial sector regulator."*

As can be seen from these definitions, Account Aggregators will be conduits for a vast amount of customers' financial information obtained from countless entities that can be identified by the RBI from time to time. The types of information they can carry can also be expanded by the RBI. This information can be delivered through the technical architecture of the Account Aggregator's APIs to any regulated financial sector entity or entity registered with any of India's financial sector regulators.

This is a vast system created for largescale sharing of customers' information. It is interesting to note that no clear purpose for the creation of this infrastructure is set out in the text of the Master Directions. No accompanying press release or Guidance document has been released by the RBI stating the central purposes for which FIUs may access the infrastructure. The text of the Master Directions also do not set out any restrictions or mandatory requirements around the manner and timing for which customer financial data procured through the system may be used.

The regulatory vision for the Account Aggregator system therefore remains to be clearly articulated in formal regulatory documents.

When seeking to piece together the regulatory vision and objectives guiding the creation of NBFC-AAs, some proposed activities of Account Aggregators themselves were discovered in the Technical Specifications for APIs. The Technical Specifications were released to all participants in the Account Aggregator system (as described in section 4.2 of this paper). These Technical Specifications set out potential activities of NBFC-AAs such as providing users with consolidated views of their financial information, allowing users to manage previously given consents etc. (NESL Asset Data Limited, 2018; Reserve Bank of India, 2018). However, they do not set out any requirements, restrictions or obligations for FIUs as users of customers' data obtained through NBFC-AAs. In any event, the Technical Specifications are not formal regulatory instruments with binding, legal value so cannot be relied upon solely to construct the regulatory vision for the Account Aggregator system.

Electronic copy available at: https://ssrn.com/abstract=3924793

It is likely that broader mandates of the RBI were driving the creation of NBFC-AAs, such as the development of the financial services market and expanding the access and quality of financial services for consumers in India. The intention could be to drive FIUs to provide better products and services to consumers, as a result of the information that such entities can now access about the consumers' circumstances. However, there is no clearly articulated requirement for FIUs to link their accessing of consumer financial data to the immediate provision of suitable financial services.

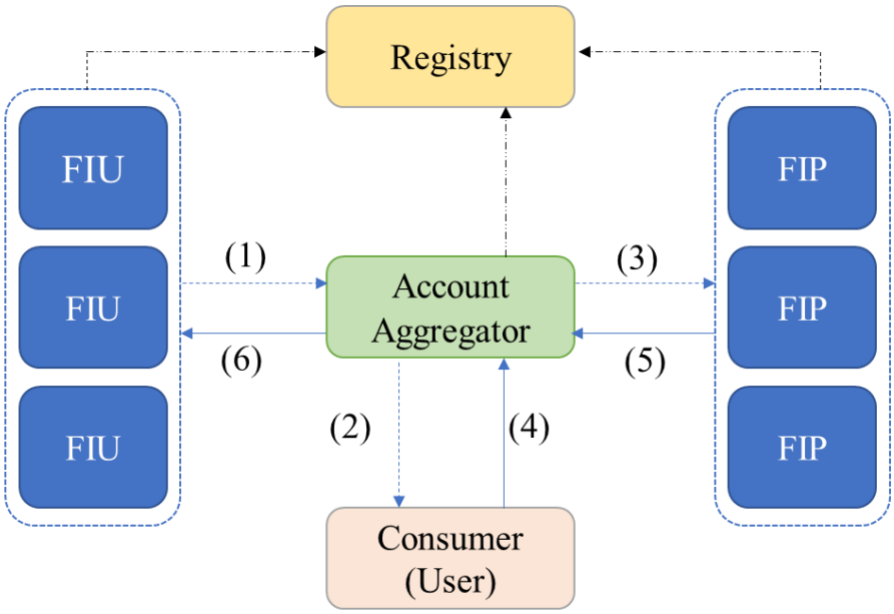
Despite the regulatory ambiguity, sufficient information is available regarding the technical vision for the operationalisation of Account Aggregators. An overview is provided in the next section.

2.2. The information flows imagined within the Account Aggregator system

The following schematic represents the flows that occur between different entities of the Account Aggregator ecosystem in a simplified form, based on a review of the Technical Specifications and Master Directions, together with other publications released by Sahamati (DigiSahamati Foundation, 2019b).

The schematic in Figure 1 represents the most simple use-case imagined in the operation of an Account Aggregator i.e. an FIU seeking the financial information of a consumer from FIPs holding the consumers' financial information. It shows our representation of three sets of queries and three sets of data flows that are necessary to fulfil this use-case in the Account Aggregator system.

Figure 1: Queries and data flows in the Account Aggregator system
(authors' representation)



Each query and data flow numbered in the schematic of Figure 1, is described in Table 1 below. In the Account Aggregator system,

- **Queries** are initiated as shown in the order presented in Column 1 of the Table 1 **within** the Account Aggregator ecosystem. A query is a request for data or information that one entity may place to another entity that carries a database. For instance, query flow (1) in Figure 1 represents an FIU querying the Account Aggregator for the desired Financial Information.
- **Data flows** occur in response to these queries. Column 2 of Table 1 lists the data flows that occur in response to query flows (1) to (3) respectively. In response to the relevant query, the relevant data will be encrypted and flow to the entities identified in the Column 2.

Electronic copy available at: https://ssrn.com/abstract=3924793

Table 1: Query flows and data flows in the Account Aggregator ecosystem

Column 1: Query Flows		Column 2: Data Flows	
1	**FIU** queries the **Account Aggregator** for **Financial Information**	4	**User** provides **Account Aggregator** with **Consent**
2	**Account Aggregator** queries the **User** for **Consent**	5	**FIP** transfers information to the **Account Aggregator**
3	**Account Aggregator** queries the **FIP** for **Financial Information**	6	**Account Aggregator** transfers **information** to **FIU**

2.3. Key properties of the Account Aggregator system in India

From a review of the regulatory documentation, technical specifications and related information, we arrive at some high-level properties that summarise the key features of the Account Aggregators system. They help envision how NBFC-AAs will work in practice once they are operational in the coming months in India, and also to assess the appropriateness of the RBI's regulatory approach. These key features of the Account Aggregator system are summarised below.

(i) **An Account Aggregator is a data-transferring intermediary**: The Account Aggregator is an intermediary that connects the user or the customer with the FIPs that she has existing relationships with, to allow discovery of her financial information. The Account Aggregator also connects the FIUs with the FIPs to transfer queried financial information of required customers.

(ii) **Data transfers take place only after explicit consent of the customer:** No transmission of financial information takes place without the explicit consent of the customer or the user. The FIP must verify the validity of the consent artefact[2] it receives along with the query for financial information before accepting such a query.

(iii) **Account Aggregators interact with customers using either a web or mobile-based client:** The Account Aggregator must interact with the customer using either a web-based or a mobile app-based client. One-time onboarding of the customer on the Account Aggregator platform and consequent requests of consent for the transfer of financial information is taken using the web-based or mobile app-based client (Reserve Bank of India, 2019a).

(iv) **All flows of financial information between entities of the Account Aggregator ecosystem are encrypted:** After validation of the consent artefact, the information that is transmitted from the FIP to the Account Aggregator and then to the FIU is encrypted (Reserve Bank of India, 2016c).

(v) **Account Aggregators cannot support financial transactions:** Account Aggregators must limit their function to account data aggregation only. If a company previously engaged with financial service provision wishes to become an Account Aggregator, they must form and register a separate entity to do so.

(vi) **Financial information transferred by an Account Aggregator cannot reside with it:** Account Aggregator must only transfer financial information between the FIPs and FIUs and not store it in any form (Reserve Bank of India, 2016c; NeSL Asset Data Limited, 2018).

[2] The consent artefact is a standardised artefact obtained by the Account Aggregator and carries the following details: (i) identity of the customer and optional contact information, (ii) the nature of the financial information requested, (iii) purpose of collecting such information, (iv) the identity of the recipients of the information, if any, (v) URL or other address to which notification needs to be sent every time the consent artefact is used to access information, (vi) consent creation date, expiry date, identity and signature/ digital signature of the Account Aggregator, and (vii) any other attribute as may be prescribed by the RBI (Reserve Bank of India, 2018).

Electronic copy available at: https://ssrn.com/abstract=3924793

Given this understanding of features and characteristics of the Account Aggregator system, it is important to understand the legal basis, motivation and rationale on the basis of which the Central Bank chose to classify Account Aggregators as NBFCs.

3. The RBI's legal basis and approach to classification of NBFCs

Non-Banking Financial Companies or NBFCs are an important, niche segment of financial institutions that have become significant complements to the banking sector in India. Although NBFCs are companies registered under India's Companies Act, they are regulated and licensed by the RBI. NBFCs play an important role in filling financing needs and gaps in the country that traditional banks have not been able to meet, and are especially important when it comes to delivery of credit to harder-to-serve segments. This category of institution was introduced in 1964 with an amendment to the Reserve Bank of India Act, 1934 (the RBI Act), and since then the RBI has developed various types of categorisations and NBFC licenses based on a range of factors. The power of the RBI to classify entities as NBFCs is derived from Chapter IIIB (*Provisions relating to Non-Banking Institutions Receiving Deposits and Financial Institutions)* of the RBI Act.

Section 45I(f)(iii) of the RBI Act defines an NBFC to mean (Reserve Bank of India, 1934, pp. 70-71):

> "*i. a financial institution which is a company;*
>
> *ii. a non-banking institution which is a company, and which has as its principal business the receiving of deposits, under any scheme or arrangement or in any other manner, or lending in any manner;*
>
> *iii. such other non-banking institution or class of such institutions, as the Bank may, with the previous approval of the Central Government and by notification in the Official Gazette, specify*."

Though the size of the NBFC sector is smaller than that of banks in terms of assets, they often have majority market share in segments such as microfinance, durable consumer loans, construction equipment finance and auto finance (Kumar, 2019, p. 6). It is important to distinguish NBFCs from "shadow bank" intermediaries seen in other countries (a common misunderstanding)—NBFCs have been regulated for more than 50 years in India and play an important complementary and supplementary role to mainstream banks and in furthering financial inclusion in the country (Kumar, 2019, p. 6).

As NBFCs evolved to become significant participants of the financial sector, the RBI has sought to regulate and address the risks they pose in a manner that does not impede their functions. The RBI's actions and regulation of NBFCs have been motivated by objectives of *"financial stability, financial inclusion and harnessing of specialised domain expertise*" (Neelima & Kumar, 2017).

3.1. RBI's Approach to the classification of NBFCs by activities

Classification based on deposit mobilisation: Broadly, the first level of distinction made by the RBI when classifying NBFCs is on the basis of deposit mobilisation. NBFCs are classified (i) deposit-taking NBFCs (NBFCs-D) or (ii) non-deposit taking NBFCs of two types:

- non-deposit taking NBFCs with assets less than INR 500 crore (NBFCs-ND) and
- non-deposit taking NBFCs with assets of INR 500 crore or more and are considered systemically important (NBFCs-ND-SI).

As Account Aggregators are not envisioned to deal with customers funds or accepting deposits, that would be non-deposit-taking NBFCs. In addition, since they are just starting operations in India it is unlikely that they will be systemically important based on the value of their assets in the short term (Reserve Bank of India, 2014).

Electronic copy available at: https://ssrn.com/abstract=3924793

Classification based on RBI's framework of factors: The next level of classification of NBFCs undertaken by the RBI is on the basis of a framework that takes into account the following factors (Reserve Bank of India, 2019b):

- their asset/liability structures (i.e. primarily to categorise them as deposit-taking or non-deposit taking),
- their systemic importance (i.e. if their assets exceed Rs. 500 crore / Rs. 5 billion) and
- the types activities they undertake.

The regulation of NBFCs by the RBI seeks to take account of these factors and address any related risks through (i) prudential norms and (ii) conduct regulations (depending on the degree of customer interface of the NBFC) (Reserve Bank of India, 2014).

To guide the RBI's regulatory posture, the RBI's Revised Regulatory Framework for NBFCs sets out certain criteria for appropriate regulations for prudential and conduct considerations (Reserve Bank of India, 2014). This framework notes that NBFCs:

> *"(i) …shall not be subjected to any regulation either prudential or conduct of business regulations viz., Fair Practices Code (FPC), KYC, etc., if they have not accessed any public funds and do not have a customer interface.*
>
> *(ii) Those having customer interface will be subjected only to conduct of business regulations including FPC, KYC etc., if they are not accessing public funds.*
>
> *(iii) Those accepting public funds will be subjected to limited prudential regulations but not conduct of business regulations if they have no customer interface.*
>
> *(iv) Where both public funds are accepted and customer interface exist, such companies will be subjected both to limited prudential regulations and conduct of business regulations".*

This is a useful framework to understand the RBI's approach to designating entities as NBFCs. It also drives the creation of categories of NBFCs by the RBI. There are currently eleven types of NBFCs in India, with each licence type corresponding to activities undertaken. These are seen in Table 2.

Table 2: Classification of NBFCs by Activity

	Type of NBFC	Activity
1.	Investment and Credit Company (ICC)	Lending and investment.
2.	NBFC-Infrastructure Finance Company (NBFC-IFC)	Provision of infrastructure loans.
3.	NBFC-Systemically Important Core Investment Company (CIC-ND-SI)	Investment in equity shares, preference shares, debt or loans of group companies.
4.	Infrastructure Debt Fund-NBFC (IDF-NBFC)	Facilitation of flow of long-term debt into infrastructure projects.
5.	NBFC-Micro Finance Institution (NBFC-MFI)	Credit to economically disadvantaged groups.
6.	NBFC-Factor	Acquisition of receivables of an assignor or extending loans against the security interest of the receivables at a discount.
7.	NBFC-Non-Operative Financial Holding Company (NOFHC)	Facilitation of promoters/ promoter groups in setting up new banks.
8.	Mortgage Guarantee Company (MGC)	Undertaking of mortgage guarantee business.
9.	NBFC-Account Aggregator (NBFC-AA)	Collecting and providing information about a customer's financial assets in a consolidated, organised and retrievable manner to the customer or others as specified by the customer.
10.	NBFC–Peer to Peer Lending Platform (NBFC-P2P)	Providing an online platform to bring lenders and borrowers together to help mobilise funds.
11.	Housing Finance Companies (HFC)	Financing for housing.

Source: (Reserve Bank of India, 2019b, p. 100)

It is noted that ten of the eleven types of NBFCs in the table above undertake activities directly related to the provision or facilitation of clearly identified financial services for lending, investment, provision of guarantees or as holding companies for promoters of new banks. The NBFC-AA appears to be the only NBFC that mainly exists to facilitate flows of personal financial information, rather than to directly facilitate financial activity.

Electronic copy available at: https://ssrn.com/abstract=3924793

While NBFC-AAs activities—such as the provision of consolidated views of financial assets, and transmission of personal information about them—could result in some financial activity, NBFC-AAs appear to be the only type of NBFC where the activities are not directly tied to clearly identified credit-provision or other financial services. The move by the RBI to designate them as NBFCs therefore has important implications for the overall regulatory space that the RBI is claiming.

4. The evolution of the RBI's approach to regulating NBFC-AAs: Shifting goal posts

Although there are several indicators of the basis for the RBI's decision to licence Account Aggregators as NBFCs, they have not been clearly set out in any one formal public document. This becomes a concern especially given that entities now appear to be performing activities that are wider than initially envisioned.

An analysis of the regulatory documents relating to NBFC-AAs reveals a progression in their conceptualisation from being providers of a consolidated view of financial records to a customer, into becoming data-transferring intermediaries creating information-sharing architectures for the Indian financial sector. Analysing the changes across the formal regulatory and technical documents released regarding Account Aggregators, two significant shifts emerge: changes to the scope of business that an Account Aggregator may undertake, and the purposes for which they may transmit information.

These changes mark the widening of the scope of activities contemplated to be undertaken by Account Aggregators, and are revealed from (i) specific changes made in the draft and final text of the Master Directions and (ii) the Technical Specifications. This shift has implications for the appropriateness of the regulatory choice by the RBI to class Account Aggregators as NBFCs. Some of the challenges that arise with the current approach given the widening of the activities of Account Aggregators are analysed in the sections below.

4.1. Change in the definition of "business of an account aggregator"

In March 2016, the RBI's draft Directions defined the "*business of an account aggregator*" as follows (Reserve Bank of India, 2016a, p. Direction 3(1)(iv)):

> *"…the business of providing under a contract, the service of,*
>
> - *retrieving or collecting information of its customer pertaining to such financial assets, as may be specified by the Bank from time to time; and*
> - *consolidating, organizing and presenting such information to the customer or* ***any other person as per the instructions of the customer****;*
>
> *Provided that, the* ***consolidated statement/ report of the financial assets of the customers****, shall not be the property of the Account Aggregator, for any further use.* ***The consolidated statement/ report will be only for use of the customer****".* (emphasis added)

According to this definition, the function of the Account Aggregator was to bring together financial information about a customer in one place and present it back to the customer or any other person as instructed by the customer.

In September 2016, when the RBI released the final form Master Directions. Although the Master Directions followed from the draft Directions in many ways, the key definition of the *"business of an account aggregators"* was modified.

Electronic copy available at: https://ssrn.com/abstract=3924793

The modifications widened the scope of the activities of Account Aggregators. The new definition for "*business of an account aggregator"* is (Reserve Bank of India, 2016c):

> *"…the business of providing under a contract, the service of,*
>
> - *retrieving or collecting such financial information pertaining to its customer, as may be specified by the Bank from time to time; and*
>
> - *consolidating, organizing and presenting such information to the customer or* ***any other financial information user as may be specified by the Bank****;*
>
> *Provided that, the* ***financial information pertaining to the customer*** *shall not be the property of the Account Aggregator, and not be used in any other manner".* (emphasis added)

This shows two key modifications in the Master Directions. First, it removes the reference in the proviso to "consolidated statement" created by the Account Aggregator. Instead, it refers to "financial information" pertaining to the customer. This indicates recognition that NBFC-AAs no longer merely present consolidated statements but primarily aim to share a wide variety of financial information about customers to FIUs.

Second, the information being consolidated and retrieved by the Account Aggregator is no longer shared based on the customer's direction. The RBI will be specifying the FIU to which an individual's personal financial information is to be shared. This is a major change to the arrangements and diminishes the user's ability to direct graded disclosure according to her preferences. The system does include a requirement to receive user's explicit consent (through consent artefacts) *after* an FIU has sought to access a user's data. However, this does not address the shift in the power away from the user when it comes to instructing the NBFC-AA to share or not share their financial information. Instead, it will be the Central Bank making this determination. This has clear impacts on consumer agency and protection which will need to be investigated in future research.

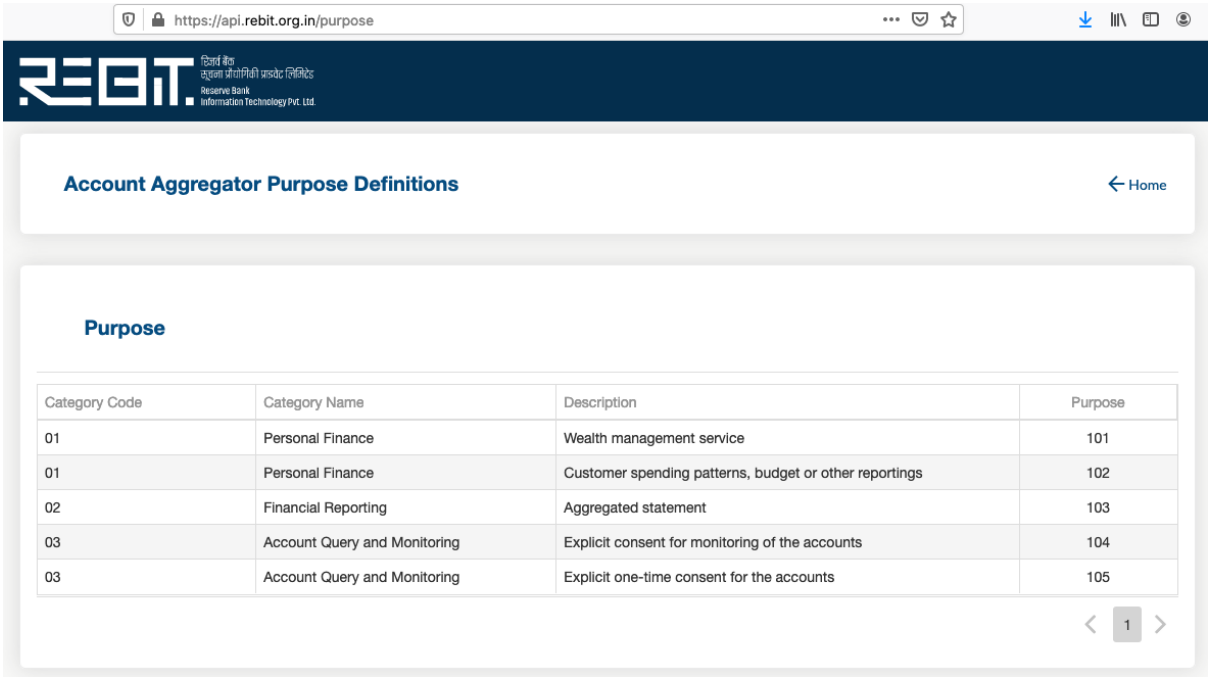
4.2. Extension of the purposes for which Account Aggregators may access and transmit customer information

The Technical Specifications for APIs to be used in the Account Aggregator system were released by the Reserve Bank Information Technology Pvt Ltd (ReBIT), following which the RBI notified all regulated entities participating in the Account Aggregator system in November 2019 of the expectation that they adopt these specifications. ReBIT is a private company, wholly-owned by the RBI and established in 2016 to deliver and manage the RBI's IT projects.

The Technical Specifications shed light on the operationalisation of the processes and functions in the Account Aggregator system. One particular component of the Technical Specifications relevant to the current enquiry is the API's purpose definitions, as seen in Figure 2 (below). They highlight five categories of purposes for which NBFC-AAs can be queried.

Electronic copy available at: https://ssrn.com/abstract=3924793

Figure 2: Account Aggregator Purpose Definitions



Source: https://api.rebit.org.in/purpose

Only one of the five defined purposes relate to the initial idea of the NBFC-AA providing a consolidated view of accounts, namely category 2 "*Financial Reporting*" which produces an aggregated statement.

The four other categories are (i) wealth management service (ii) customer spending patterns, budget or other reports (ii) explicit consent-taking for monitoring of accounts and (ii) one-time consent-taking for accessing account information of the customer. These are additional activities for which FIUs can seek financial information. In particular, it is not clear what the "wealth management service" entails and how this will be executed.

Overall, this documentation confirms the broadening of the conceptualisation of the NBFC-AA system as going beyond being mere provision of consolidated views and aggregation of financial information to customers (ReBIT, 2019).

4.3. Unpacking the RBI's classification of Account Aggregators as NBFCs

At the highest level, the classification of Account Aggregators as NBFCs appears to arise from the RBI's objective of regulating entities that are niche but provide or facilitate financial functions. These regulatory objectives trace back to broader Central Banking objectives of playing a developmental role to improve financial inclusion, and consumers access to a wider suite of financial services which may become available once personal financial information is widely available to consumers and providers. This could imply that the Central Bank sees the provision of consolidated financial records to consumers as a facilitation of a financial activity.

However, as seen in the analysis presented in this section 2 of this paper, the function of Account Aggregators is now no longer limited to provision of consolidated financial information records to customers. It has expanded to being data-transferring intermediaries between different entities of the financial sector. In this context, seeking to understand the approach of the RBI in designating Account Aggregators as NBFCs raises certain questions and presents certain challenges. These challenges arise when looking more closely at the activities of NBFC-AAs.

Electronic copy available at: https://ssrn.com/abstract=3924793

4.3.1. The appropriateness of the NBFC-AA classification for pure account aggregation activities (i.e. provision of consolidated views of financial assets) is uncertain

It is possible that core account aggregation services (i.e. providing consolidated view of financial assets to customers) are the type of activity that eventually facilitate financial services including lending. Fragmented user interfaces by retail financial services providers can create large search costs for an individual to obtain and compare financial services and products. This can be especially the cases for lower-income users, or those not adept at using financial services.

Account Aggregators as envisioned would solve for this problem and make data retrieval more convenient. Consolidated statements of financial information can be useful for users when seeking for new financial services and encourage financial inclusion. Consequently, there could potentially be a role for the RBI to regulate or enable this customer-facing service that facilitates access to finance.

However, the question of whether NBFCs are the appropriate form is still debatable. The general understanding in the Indian context is that all non-deposit taking NBFCs types are companies that undertake financing activities–with recommendations made in the past to subsume them under two categories of (i) loan companies or (ii) core-investment companies (Kumar, 2019, p. 23).

The move to designate these entities as NBFCs therefore marks a major departure for the RBI. It raises the question of whether the RBI is seeing the provision of consolidated views itself as some kind of financial activity, relevant to the context of lending (which is the traditional remit of NBFCs). This appears a difficult view to align with. Other regulators seem to have chosen to accommodate "account information services" that provide consolidated financial information views as "payment services". This accommodates them within payments services regulation, classifying providers within licensee or authorisation categories as payment services providers. This approach has been taken by the EU and in Bahrain, as detailed in section 5 below.

4.3.2. The appropriateness of treating all technology service providers (not interfacing with consumer funds or dealing in own funds) as NBFCs is uncertain

The closest parallel for a different approach to NBFC designation by the RBI, lies in the recent creation of a category of NBFC-P2P in 2016 (Reserve Bank of India, 2016d). This created a category of licence for peer-to-peer online platforms that allow borrower and lenders to be matched for loans.

Many of these online platforms are technology service providers, rather than financial institutions as they often do not themselves provide any financial services or even mediate any flow of funds. When regulating the NBFC-P2P form, the RBI noted that it was seeking to validate alternate forms of finance but prevent adverse of "deleterious" consequences for the sector and any unprecedented impacts on the financial sector (Reserve Bank of India, 2016b). This regulatory choice has been critiqued by some as inappropriate or over-regulation given that peer-to-peer platforms do not lend out their own funds, accept deposits or issue loans (Minupuri, 2019).

However, even this comparison reveals a major difference in the kind of activity undertaken by a P2P platform and Account Aggregators (acting as data-transferring intermediaries). NBFC-P2Ps are more directly tied into the ***facilitation*** of financial services than NBFC-AAs (even if their classification as NBFCs is under critique). Their primary objective is to facilitate lending activity on their platform. Any facilitation of information flows that they take on when users of their platforms interact online is a *consequence of* financial activities on their platforms, and directly tied to lending activity.

4.3.3. The regulation of personal information flows, and information intermediaries is the subject of data protection regulation

The regulation of the flow of personal information is primarily the mandate of data protection laws, in most jurisdictions. India is in the process of creating a Personal Data Protection Bill (PDP Bill), to set

Electronic copy available at: https://ssrn.com/abstract=3924793

up India's first omnibus data protection law with more robust obligations and rules to regulate personal information flows. The PDP Bill was introduced into Parliament in December 2019 and is currently under consideration by a Joint Committee of Members of Parliament.

Under the new PDP Bill regime, it is likely that Account Aggregators could be classed as "data fiduciaries" given their handling of personal data of individuals. Financial data is currently included within the definition of sensitive personal data under the PDP Bill (see s.2 (36) of the PDP Bill) (Government of India, 2019). Further, the PDP Bill includes a specific regulatory concept that is closely aligned to the function of the Account Aggregator. It enables data principals (or individuals) to give or withdraw their consent to data-sharing through a "consent manager"(see s.23(3) of the PDP Bill). A consent manager is defined as (in the explanatory clause to s. 23 of the draft PDP Bill):

> "*…a data fiduciary which enables a data principal to gain, withdraw, review and manage his consent through an accessible, transparent and interoperable platform.*"

Most curiously, a draft discussion document titled "*Data Empowerment and Protection Architecture"* released by the NITI Aayog[3] in September 2020 specifically made the connection between Account Aggregators and consent managers under the PDP Bill. The document notes (NITI Aayog, 2020, p.5):

> *"RBI issued a Master Directive creating Consent Managers in the financial sector to be known as Account Aggregators (AAs), and seven AAs have already received in-principle regulatory licenes." (sic)*

The PDP Bill requires consent managers to be registered with the future Data Protection Authority (in s. 23(5) of the PDP Bill). Consent managers will also need to operate in line with future regulation produced under the PDP Bill, to flesh out the requirements already included in the text of the legislation.

Overall, it would appear that the future PDP Bill (and the Data Protection Authority created by it) would have better competence to regulate the information-sharing aspects of the Account Aggregator system. The setting up of dual-regulation or parallel regulations from the RBI and from a future Data Protection Authority to govern the same types of entity or activity is not a very desirable regulatory design. This creates many dissonances and sets up clashes in regulatory perimeter between the RBI's regulatory mandate and those under a future data protection regime, which will need to be addressed by policy makers.

Even in the absence of the PDP Bill, some skeletal data protection regulation does exist in India under the existing Information Technology Act, 2000 (the IT Act). The IT Act seeks to "*provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication*" (Government of India, 2008).

Under this law, entities who merely receive and transmit electronic records are considered "intermediaries" who may claim safe harbours from certain types of liability and adhere to any guidelines released for this class of entities (Kapoor, 2020). Although the application of this regime to Account Aggregators has not been publicly debated to date, if these entities were to act as purely data-blind "dumb pipe" intermediaries there is potential for them to fall within the rubric of the intermediary regime[4]. In any event, a regime of intermediary requirements has been built out under the IT Act to apply whenever sensitive personal data or information (including financial information) is shared

---

[3] The National Institution for Transforming India, or the NITI Aayog, was formed via a resolution of the Union Cabinet on January 1, 2015 and is the policy think tank of the Government of India, providing both directional and policy inputs.

[4] Within the IT Act, section 2(1)(w) defines an intermediary as follows:

> *""**intermediary**", with respect to any **particular electronic records, means any person who on behalf of another person receives, stores or transmits that record or provides any service with respect to that record** and includes telecom service providers, network service providers, internet service providers, web-hosting service providers, search engines, online payment sites, online-auction sites, online-market places and cyber cafes." (emphasis added)*

Electronic copy available at: https://ssrn.com/abstract=3924793

received or otherwise handled. These requirements are set out under subordinate regulation under the IT Act, namely the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011.

Given all these factors, it does appear that the regulation Account Aggregators as data intermediaries needs to be intentionally addressed and aligned with India's data protection regime. Failure to do so, could create ambiguities around the exact set of regimes that apply to these entities and their regulatory obligations especially vis a vis the consumers' whose data they will be handling.

4.3.4. Consumer protection and systemic risk (from information flows) as legitimate basis for financial sector regulation of Account Aggregators

NBFC-AAs are already an established regulatory form in India, with several companies receiving these licenses. This extension of the NBFC form by the RBI could therefore be a signal of a new direction that the regulator is taking with regard to the development of non-bank activity.

If there is a deliberate and acknowledged departure from types of NBFCs being limited to lending and investment functions, it is important to consider the regulatory imperatives that guide the substantive aspects of NBFC-AA regulation. Reflecting on the approach set out in section 3.1 (on RBI's criteria for prudential and conduct regulation), non-deposit taking NBFCs (like NBFC-AAs), consumer protection and systemic risk (as a consequence of data protection or security failures) should guide current and future NBFC-AA regulation. While the Master Directions do deal with generic high-level data security requirements, these must be fleshed out in greater details and according to the use-cases of NBFC-AAs.

There is a need to place strong conduct regulations on all participants in the Account Aggregator system, especially NBFC-AAs interfacing with consumers. There is also a need to specifically link data protection mandates into the Master Directions to align, harmonise and reduce the risk of abuse of the system. Failure to do so could create harms for customers, and concerns relating competition, data quality and cyber security contributing to systemic risk and financial stability concerns. It could also create competing regulatory mandates as outlined in section 4.3.3 of this paper, above.

If the RBI is deliberately moving to regulate non-banks providing data aggregation and transfer services in the financial space, this has deeper implications. In effect, it means the RBI is staking the claim to regulate all information flows in the financial sector, irrespective of their connection to a financial activity. **This, however, would be a difficult position to maintain given that it has not traditionally been the competence or the authority of a Central Bank to regulate a non-financial activity with cross-sectoral impacts as data sharing does.**

Having understood the contours of the Account Aggregator system in India and related regulation, it is relevant to consider other global regulatory experience that may be useful to address some of the questions that have arisen in the Indian context.

5. Rationale for regulation of financial information flows in other jurisdictions: Parallels from the Kingdom of Bahrain and UK's Open Banking regime

Globally, there has also been a move in some countries towards the opening up of access to customers account information. This regulatory movement—often termed Open Banking—is motivated by the need to increase competition in the provision of financial services, by enabling third-party providers to access customers' personal information. Such information has traditionally been monopolised by the banks with whom such customers have bank accounts.

Two important points of reference relevant to the Account Aggregator experience in India are the regulatory experience of the Kingdom of Bahrain and the EU. In both jurisdictions, policymakers have attempted to open up access to customers' financial information to facilitate wider provision of financial services by a broader range of institutions. The regulatory approach these jurisdictions took – broadly

Electronic copy available at: https://ssrn.com/abstract=3924793

understood within the rubric of the term "*Open Banking*" – including treatment of the providers of these services and the role that the regulator seeks for itself when seeking to regulate are a useful regulatory counterpoint to India's experience.

5.1. Kingdom of Bahrain

The Kingdom of Bahrain has been at the forefront of regulatory approaches to enable Fintech in the Middle East. The Fintech & Innovation Unit of the Central Bank of Bahrain (CBB) had issued a study on Open Banking in June 2018 and in December 2018, following public consultation released Open Banking regulations—making it the first country in the Middle East to adopt open banking-style regulations (Central Bank of Bahrain, 2019).

These regulations enable third-party providers to develop Application Programming Interfaces (APIs) which can directly interface with banks' and financial institutions' systems to access the customer's bank account information and financial accounts (Central Bank of Bahrain, 2019, p. 108). They enable the provision of two broad types of new services by these third-party providers which are (i) account information services and (ii) payment initiation services.

The CBB's approach and regulations in this regard are a strong parallel to consider when analysing the RBI's approach to regulating Account Aggregators. The treatment of the providers of these services and the role that the regulator seeks for itself when seeking to regulate, are a strong parallel to understand how a different Central Bank is operationalising efforts to open up access to customers' personal financial information to facilitate financial services.

5.1.1. Rationale for regulation to enable account information and payment initiation services

The CBB's articulation of the fundamental rationale to introduce these Open Banking regulations can be gleaned from the CBB's Financial Stability Report of September 2019 where it is noted that these regulations are aimed at eliminating the search costs faced by customers seeking financial services who are spread across different institutions (Central Bank of Bahrain, 2019, p. 108). The additional rationale appears to be to introduce competitiveness in the banking system as banks compete to digitise their services (Central Bank of Bahrain, 2019, p. 108).

5.1.2. Legal basis for Bahrain's Open Banking regime

No person can undertake "*Regulated Services*" i.e. financial services provided by financial institutions unless licensed by the CBB, according to Article 40 of the Central Bank of Bahrain and Financial Institutions Law 2006 (CBB Law). The CBB Law also empowers the CBB to issue various secondary regulations to specify and organise the provision of financial services. The CBB has accordingly created a number of regulations over time, which are organised and presented within the CBB Rulebook (Central Bank of Bahrain, 2019a). The CBB Rulebook comprises seven volumes addressing regulatory requirements relating to licensing, regulation and supervision of licensees, and covering areas such as licensing requirements, capital adequacy, risk management, business conduct, reporting and disclosure requirements for conventional and Islamic banks, insurance licensees, investment businesses, specialised licensees, capital markets and collective investment undertakings (Committee on Payments and Market Infrastructures, 2017).

Volume 5 of the CBB Rulebook contains rules relating to *Specialised Licensees* who are authorised by the CBB to undertake regulated specialised activities. This is the volume that is of specific interest, since they have been widened to enable open banking-style services related to the provision of consolidated views of customer accounts and payment service initiation.

Electronic copy available at: https://ssrn.com/abstract=3924793

There are seven types of specialised licensees mentioned in Volume 5 of the CBB Rulebook, with Type 7 being Ancillary Service Providers (Central Bank of Bahrain, 2019d). Pursuant to AU-1.1 (*Licensing)* of the CBB Rulebook, an entity must be licensed if it seeks to perform one of the defined regulated ancillary services. As part of the CBB's Open Banking module of regulations in December 2018, the definition of regulated ancillary services (in Volume 5, AU-1.2.1) was amended to include "account information services", and "payment initiation services" (Central Bank of Bahrain, 2019b).

In simple terms, the regulations enable (Central Bank of Bahrain, 2019, p. 108):

- account information services that permit customer access to aggregated bank account information through a single platform;
- payment initiation services that allow licensed third parties to initiate payments on behalf of customers and permit seamless transfers between different accounts through a mobile-based application.

The regulations also created two new categories of licensees—Account Information Service Provider (AISP) and Payment Initiation Services Provider (PISP)—corresponding to each kind of new regulated ancillary service that was envisioned (Central Bank of Bahrain, 2019c).

5.1.3. Approach to regulating AISPs and PISPs

Account Information Services are the closest parallel to the provision of Account Aggregation services in India. Account Information Services are defined in the CBB Rulebook as:

> "*an online service which provides consolidated information to a customer on one or more accounts held by that customer with licensees maintaining customer accounts."*

A deeper analysis of the basis on which entities can become specialised licensees in Bahrain reveals some of the underlying regulatory thinking driving this approach. Any person licensed under Volume 5 of the CBB Rulebook to undertake regulated ancillary services are granted these licenses on the basis that they are financial sector support institutions as defined under Article (1) of the CBB Law (see AU-A.1.3) (Central Bank of Bahrain, 2019d).

This means all AISPs and PISPs have been granted Ancillary Service Providers (Type 7 Specialised Licensees) on the basis that they are "*financial sector support institutions*". The CBB law defines financial sector support institutions as follows (The Central Bank of Bahrain and Financial Institutions Law 2006):

> *"These include institutions licenced for operating clearance houses, settlement of payments, cheques and financial papers, and institutions which are wholly or partly set up by financial institutions in cooperation with the Central Bank* ***in order to provide services of pure financial nature*** *to the financial services industry." (emphasis added)*

It therefore appears that the CBB understands **AISPs and PISPs** to be **financial sector support institutions** the provide services of a **"pure financial nature"**. It has licensed AISPs and PISPs undertake on the basis that their activities are directly related to the provision of services of pure financial nature to the financial services industry.

This is also confirmed by the CBB's articulation of the fundamental rationale for Open Banking regulations, as noted previously being:

(i) the elimination of search costs faced by customers seeking financial services spread across different institutions, who are often tied into interfaces and products at their own bank (Central Bank of Bahrain, 2019, p. 108). Instead, AISPs could ensure all relevant financial information can be aggregated on a single application platform;

Electronic copy available at: https://ssrn.com/abstract=3924793

(ii) the additional rationale of introducing competitiveness in the banking system as banks compete to digitise their services (Central Bank of Bahrain, 2019, p. 108). This would appear especially relevant when considering the role of PISPs in expanding the options for payments that customers have in their everyday transactions and lives.

5.1.4. Understanding the Bahrain Central Bank's approach with regard to regulation of consumer information flows

The foregoing analysis reveals the CBB's approach to navigating the regulatory space relating to technology-driven innovations that are changing the provision of financial services. This approach also has implications for the CBB's wider mandate, and raises the question: how much authority does the CBB see itself as having, when it comes to rules relating to the processing of customers' personal information? The response to these questions can be gleaned by the CBB's approach to regulation-making for AISPs.

Some broad principles for the Central Bank's approach to the regulation of customer information emerge.

- **Substantive aspects of the CBB's regulation are guided by underlying objectives of consumer protection, financial stability and development of the financial sector**: Rules in the Open Banking Module of the CBB Rulebook focus on consumer protection and systemic security requirements (Central Bank of Bahrain, 2018). OB-B.1.1 states that strict regulatory standards are being released for AISPs and PISPs to ensure

  > "*the integrity and safety of customer data, the APIs, customer on boarding process, authentication process, communication sessions, process for tracking of security incidents and associated standards of dealing with the customers while undertaking this activity*."

  This reflects the thrust of the remaining granular regulations to protect consumers and prevent systemic risk or instability, which generally relate to conduct regulations and data protection requirements for customer protection, data security, authentication and communications security measures. This is well aligned to the CBB's objectives for regulation and its role as a Central Bank in maintaining financial stability, consumer protection and enabling wider, secure access to finance.

- **The regulation of ancillary services providers is restricted by the Central Bank's regulatory ambit** (under the CBB Law): The licence provided to AISPs enables activities only to the extent that they are **directly related to a service of pure financial nature**. In this case, customer account information can only be accessed and processed to provide aggregated account information and views. Any further sharing or on-sharing of this information would arguably not be a service of a pure financial nature. This could mean that there is no scope for the CBB to regulate processing or handling of customer information which are not connected to financial services provision.

- **The regulation of customer information must be in line with broader data protection law**: Where the CBB regulates the use and access of customer information by AISPs, it is seen that these are in line with broader requirements of Bahrain's data protection law. Specifically, OB-1.1.13 of the CBB Rulebook require AISPs to establish account information procedures to ensure the explicit consent of customers is availed for service provision, no further information other than specific information from designated accounts of the customer are accessed and the AISP cannot use, access or store any information for any purpose except for the provision of the account information service. This is in line with purpose limitations, use limitations and retention limitation principles found in data protection law. There are also provisions to notify

Electronic copy available at: https://ssrn.com/abstract=3924793

in case of loss of confidentiality of security credentials (OB-2.2.18) and apportion liability of parties in case of a loss of sensitive data. Further, OB-1.1.4(e) specifically states that measures and processes to safeguard personal data must be followed in accordance with Bahrain's Personal Data Protection Law 2018. This clearly shows that a Data Protection Authority would have regulatory oversight over AISPs as well, and links to data protection laws must be made clear in financial regulation relating to customer data processing.

AISPs and PISPs also must put in place framework agreements with customer setting out all details of the arrangements to access their account information, including about safeguards and corrective measures (for e.g. to deal with unauthorised use of customers payment instrument and related data) (See OB-2.1). The regulations have comprehensive procedures to handle security and fraud incidents, customer complaints, and the safety of customer data.

From this analysis, some useful insights emerge for other Central Banks seeking to set the regulatory perimeter in a data-driven world. It could also signal the reason that the Bahraini regulation limits itself to enabling secure and regulated customer account access for limited purposes, rather than move into the creation of infrastructures to create "data pipes" to share information between financial sector entities.

5.2. European Union

The core of the EU's new payments framework is the Payment Services Directive (PSD2) (Directive (EU) 2015/2366, 2015). The Directive was framed with a clear acknowledgement that the retail payments market had experienced "*significant technical innovation, with rapid growth in the number of electronic and mobile payments and the emergence of new types of payment services in the market place, which challenges the current framework*." (Directive (EU) 2015/2366, 2015, p. Recital 3).

The recitals of PSD2 paint a clear picture of the questions and challenges that these developments raised, especially in relation to certain payments-related activities that were inadequately contemplated in the previous legal rubric. This began to be seen as a barrier for providers seeking to offer new innovative types of digital payment services. Equally, there was growing recognition of the security and data protection risks faced by systems and consumers, to which Member States in the EU were taking divergent approaches to the detriment of consumers.

These factors lead to the creation of the new PSD2 framework. PSD2 widens the scope of the first EU Payment Services Directive (PSD1) by covering new services and players, extending the scope of existing services, enabling third parties (so-called Third Party Providers) to be able to initiate payments and access payment account data based on explicit consent a customer (so-called payment service users) (European Banking Federation, 2019, p. 6).

In practice this means new obligations for existing financial institutions to provide access to their customers' account data securely to third parties. This enables third parties as diverse as telecom companies, social media or shopping platforms to offer aggregated views of user accounts and facilitate transfers even while customers' money was safely stored on their own bank accounts (Zetzsche, Ross, Douglas, & Janos, 2017).

Given the close parallels to the Indian Central Bank's motivations to enable the existence of Account Aggregators, the rationale, legal basis and approach to enable the EU Open Banking system provide a useful regulatory counterpoint from which the assess the RBI's approach in India.

5.2.1. Rationale for regulation to enable account information and payment initiation services

The overarching thrust of PSD2's provisions is to help create a more integrated and efficient European payments market, as well as protecting consumers by making payments safer and more secure (HM

Electronic copy available at: https://ssrn.com/abstract=3924793

Treasury, 2017, p. 3). By creating a new regulatory regime for third parties seeking to access bank account information and make payments on behalf of clients, it seeks to expand access for consumers to a range of new services in order to manage finances and increase competition across financial services (HM Treasury, 2017, p. 3). Consumer protection and competition imperatives therefore stand out once again as driving regulations to enable account information services.

5.2.2. Legal basis of European regulation of account information service

The European Union consists of 27 Member States, who work together to create an integrated and effective single market for goods and services. For an effective and well-functioning market for payment services, the EU creates common rules relating to payment services and to assist the development of a single payment area where cross-border payments are safe, easy and have the same charges across EU Member States (European Commission, 2020).

As part of this vision, common rules for payments were set up at the EU level with PSD1 in 2007. It introduced a new category of payment service providers *other than* banks for payment services (European Commission, 2020). PSD2 as an EU Directive requires transposition into the national law of Member States, which is currently progressing across all Member States (European Commission, 2020). "Payment service providers" has always been recognised under PSD1 to cover a range of institutions who are authorised or receive an exemption to provide payment services (which are defined in the Annex to the Directive).

One of the big changes in PSD2 was the inclusion of new categories of "payment services" and payment service providers who had traditionally been outside the regulatory perimeter. These changes were aimed at taking note of new and complementary payment services were being offered to consumers due to technological innovations, which were not previously contemplated by the regime.

Account information service is defined in Article 4(16) (*Definitions*), as:

> *"an online service to* ***provide consolidated information*** *on one or more payment accounts held by the payment service user with either another payment service provider or with more than one payment service provider."* (emphasis added)

Accordingly, account information service providers (AISPs) were recognised as a new category of payment service providers providing account information services. PSD2 also recognises payment initiation services providers (PISPs) as a payment service provider providing payment initiation services in Article (15), as

> *"a service to initiate a payment order at the request of the payment service user with respect to a payment account held at another payment service provider".*

The treatment of PISPs is fairly different from the AISPs in PSD2. Accordingly, the focus of the remaining analysis in this section will therefore remain on AISPs given their relevance in understanding the RBI's regulatory approach to Account Aggregators in India.

As a general rule, legal persons who have been granted authorisation under in Article 11 (*Granting of authorisation)* to provide and execute payment services in the EU by relevant competent authorities of Member States as referred to a**s "payment institutions".** In the case of AISPs, Article 33 (*Account information service providers*) of PSD2 exempts them from requiring such authorisation.

Instead, they must register with the competent authority in an EU Member State and can passport this registration to operate in other EEA States (UK Financial Conduct Authority, 2019, p. 15). AISPs will then be treated as payment institutions but exempt from many of the requirements applicable to other payment institutions. In practice, this means the relevant financial regulatory authority supervising payment institutions will be the regulator of AISPs. In the UK (where PSD2 still applies at the time of writing, as the UK is in a transitional period following its withdrawal as an EU Member State), AISPs are required to be registered with the Financial Conduct Authority (FCA).

Electronic copy available at: https://ssrn.com/abstract=3924793

This approach has been taken by the EU on the basis that even though AISPs interface with consumers, they do not access client funds. Accordingly, a tailored regime to address the particular role they play of providing consolidated views of information about the customer (without accessing their funds or bank accounts) has been evolved.

5.2.3. Approach to regulating AISPs and PISPs

From this analysis, it becomes clear that entities seeking to access customer information to provide account information and payment initiation services are authorised as new types of payment services providers in the EU system. As noted above, given that AISPs are a closer parallel to Account Aggregators the analysis in this section will be focused on understanding the approach to regulating these providers, touching on PISPs where relevant.

The recitals, definitions and other guidance on PSD2 clearly reveal that account information services (AIS) mainly relate to giving consumers an overall view of their financial situation based on their accounts held at various institutions. They also reveal that although such services were not previously considered to be "payment services", EU authorities widened the term to include AISPs and PISPs as payment services providers. This was in recognition of the fact that technological developments have resulted in the rise and use of a range of "*complementary services"* to financial service provision, such as account information services which were previously unregulated (see Recital 28, PSD2).

This understanding that is also reflected in Article 3 (*Exclusions)* of PSD2. The provision in Article 3(j) excludes "**technical service providers**" from the application of PSD2. However, it specifically states that this exclusion does not apply to AISPs and PISPs—indicating that though they may be considered TSPs, they are being brought into the regulatory realm.

The reason for bringing account information services into the realm of "payment services" is articulated (in Recital 15) as a step to bring legal certainty for AISPs and their customers. The choice of authorisation procedure and requirements also reflects the recognition that AISPs are providing a service complementary to core financial transactions, but not directly dealing in clients' funds themselves.

The recitals of PSD2 once again provide clear rationale for a tailored regime being created for new regulatory forms of AISPs and PISPs, aligned to underlying regulatory objectives.

- Recital 48 notes that other types of prudential rules need to be in place through a specific prudential regime for account information service providers to ensure controls and processes to mitigate the risks that arise from their activities.

- Recital 93 discusses the need for a clear legal framework that addresses the data protection and security requirements needed, and notes that regulatory technical standards will be critical to drive secure communication solutions between financial institutions interfacing with AISPs and PISPs. The European Banking Association is tasked with creating the common, open standards of communication for implementation for all financial institutions opening themselves up to AISPs. It notes that such standards should allow for use of all common devices (including mobile phones and tablets).

- Recital 96 specifically dwells on the need for robust security measures for use, integrity and confidentiality of personalised security credentials, as well as encryption and authentication systems.

The EU's approach to regulating AISPs foresees the use of prudential regulation controls to mitigate risks (especially arising from the online nature of the service), conduct regulations for customer protection, as well as data protection and data security requirements.

Electronic copy available at: https://ssrn.com/abstract=3924793

This treatment of AISPs as payment services providers with specific prudential and conduct obligations, and separate data protection & security obligations is aligned to the fundamental regulatory rationale of PSD2. These are fleshed out below.

(i) **Expanding access for consumers to a range of new services in order to manage finances, and protecting consumers by making payments safer and more secure.** AISPs' ability to provide consolidated account information could reduce search costs and information asymmetries currently facing users. AISPs can share customers' consolidated information with other payment services providers to improve their ability to access different providers and services. This could enable them to improve the quality of their financial access overall.

(ii) **Increase competition in financial services provision.** One of the important fall-outs of authorising AISPs to be payment institutions under PSD2 is that third party providers who may not have previously been financial institutions can now access customer information from incumbent institutions to provide their services. This creates the opportunity for increased competition for better user experiences of accessing financial information. Further, consumers ability to compare and access different products once they are able to have consolidated views of their financial assets and liabilities could also immediately drive competition in retail financial services provision.

(iii) **To help create a more integrated and efficient European payments market**. This EU objective is made possible by the ability for AISPs to passport their authorisations across Member States of the EU.

Consumer protection and competition imperatives therefore stand out once again as the objectives that drive regulations to enable account information services in the EU. These services are seen as complementary to financial services, and the reason for the extension of the regulatory perimeter to include them. This also naturally limits the extent of their activities and regulation by financial sector authorities.

5.2.4. Understanding the EU PSD2's approach with regard to regulation of consumer information flows

The foregoing analysis reveals a tailored approach for AISP regulation in EU Member States, created to accommodate technology-driven services complementary to core financial services provision. Regulators overseeing the authorisation and supervision of payment services take on the mantle of regulating these new entities. These regulators (or National Competent Authorities) who implement and oversee PSD2 are either Central Banks or other regulators who have jurisdiction over payments regulation, depending on the Member State or country (Preta S.A.S - Open Banking Europe, 2017, p. 12).

Given that the regime for AISPs is mainly aimed at opening up customer account information to new types of authorised entities, it raises important questions for the extent to which financial sector authorities can create these rules. Responding to this question will have wider implications for Central Bank functions around supervision of payment systems, as well as any related regulation of information flows.

Analysing the approach in PSD2 against these wider questions provides some insights. They also provide broader principles which are consistent with the approach taken by the CBB in the Kingdom of Bahrain in this regard, as noted below.

- **The EU's approach to the regulation of AISPs is guided by underlying objectives of payments regulation, being consumer protection, financial stability, development of the financial sector and maintaining public confidence payment systems**: Many of the regulatory objectives driving the Bahrain CBB's approach to AISPs are common to those of

Electronic copy available at: https://ssrn.com/abstract=3924793

the EU authorities. As seen in the analysis in section 5.2.3 above, the recitals and provisions of PSD2 show the creation of a regime with elements of prudential regulation and conduct regulations, which include data protection and security requirements. In addition, classifying AISPs as payment institutions also ensures that they live up to some of the robust requirements that other payment institutions follow when accessing account information and communicating with financial sector institutions. As AISPs are complementary to financial services (like payments) they could also help drive the development and use of payment systems.

- **The regulation of AISPs has been guided by regulatory objectives, and restricted to the activity of account information service provision:** AISPs may only undertake the creation and sharing of consolidated information using their authorisation. The relaxation in authorisation procedure and related prudential capital requirements is because of the limited nature of the activity that can be undertaken under this type of authorisation. Should a third party provider seek to provide other services, they need to go back to their competent authorities and receive complete authorisations to do so (Preta S.A.S - Open Banking Europe, 2017, p. 10). As it stands therefore, the key activity for AISPs would be to present the customer's consolidated information back to the consumer with features (to help track spending, provide budget visualisations etc.) or to another payment service provider to execute a payment transaction. It does not contemplate the sharing of the entire underlying information of the customer (only the consolidated information) with any financial sector entity, as the RBI's Master Directions do.

- **The regulation of customer information must be in line with broader data protection law:** Given the well-developed culture of data protection in Europe, the PSD2 regime has had to necessarily engage in detail on rules relating to customer account data access and use. Where AISPs (and provision of any payment service pursuant to PSD2) require access and processing of personal data, such processing must be in compliance with the EU's General Data Protection Regulation and all its requirements. PSD2 calls out the need to access data based on legitimate legal basis, and with compliance to security requirements as well as principles of necessity, proportionality, purpose limitation and proportionate data retention periods (see Recital 89). Interestingly, Article 67 exactly reproduces the requirements mentioned OB-1.1.13 of the CBB Rulebook (mentioned in section 5.1.4 above) that restrict access and use of payment account information by AISPs. The substantive rules related to AIS provision in Article 67 (2) (*Rules on access to and use of payment account information in the case of account information services*) note that AIS can be provided:
    - only on a user's explicit consent;
    - without the potential for the personalized security credentials of the user being accessible to any other party (including the AIS provider);
    - with access only to the limited information of the relevant payment account and the associated transactions, and without requesting any sensitive payment data linked to the payment account, and
    - any of the user's data cannot be stored or accessed for reasons other than the AIS itself and in accordance with data protection rules.

  Article 67 and related Guidance has clarified that AISPs can only access information relating to the specific payment account of the user, and associated payment transactions. They **cannot** access personalised security credentials which could be used to commit fraud, since these are classed as "sensitive personal data" that cannot be accessed by AISPs.

  It is important to be clear on the data that can be accessed by AISPs. This may include account balances of the payment accounts and payment account debit / credit entries related to the payment transactions as within the scope in the Directive (only if the payment account is accessible on line, i.e. online banking) (European Banking Federation, 2019, p. 27). Other features and information around a payment account (personal data of the holder, terms,

Electronic copy available at: https://ssrn.com/abstract=3924793

conditions, fees) and non-payment services like mortgages, loans, deposit accounts are outside the scope of what AISPs or PISPs can access (European Banking Federation, 2019, p. 27).

Although the broad objective of PSD2 and GDPR are aligned, several points of friction have also arisen and continue to be resolved by European authorities. For instance, on issues relating to overlapping requirements to establish grounds to access customer's data, the consensus emerging is that **both** PSD2 and GDPR requirements must be adhered to by AISPs. Further, across PSD2 and GDPR requirements there is consensus that if a third party accesses personal data as an AISP or PISP it cannot "re-use" or "re-cycle" that data to provide other services to the individual or share it with any other party or for any other purpose (McInnes & Sampedro, 2019).

In any case, the broader principle that national Data Protection Authorities would also have regulatory oversight over AISPs is also seen in the EU regulatory approach to AISPs. Similar to Bahrain, it is clear from PSD2's approach that links to data protection laws must be made clear in financial regulation relating to customer data processing.

The experience of regulators and Central Banks in the EU is useful when considering India's approach with regard to account aggregation services. Clearly, there is a consistent effort to ensure that all aspects of consumer protection and systemic stability are addressed: both in terms of consumer's financial accounts and data, and with systemic risks arising from "opening" up personal financial information to third party providers.

6. Conclusion: Should Central Banks regulate and enable the flow of personal information?

Technology service providers offering data aggregation services exist in other parts of the world, and are not always directly the subject of financial regulation. For instance, providers like Plaid and Yodlee operate in the US to aggregate consumer financial data and share it across various financial institutions, while also providing consumers a "dashboard" of their aggregated data. They are currently unregulated by US financial sector authorities, and have developed their businesses by entering bilateral contracts with various consumers and financial institutions (Geslevich Packin, 2020). On the other hand in countries within the EU, there has been an effort to "open up" consumers financial data to third party providers for a range of specific types of authorised activities through a regulated Open Banking regime.

Across this spectrum, regulators in each jurisdiction have taken up approaches based on their mandates, imperatives and contexts. The regulatory stance taken in India emerges in contrast as a different approach, which departs in many respects both as against global approaches and as compared the RBI's own practice in the past. This could signal an intent by the Central Bank to expand its functions towards the regulation of information flows in the financial sector. This raises an important central question when considering the role of Central Banks in an increasingly data-driven financial future: *Should Central Banks regulate and enable the flow of personal information?*

Our in-depth analysis of the RBI's regulations of Account Aggregators in India, and related documents has revealed that some gaps remain in the articulation of the rationale driving the classification of these data-transferring intermediaries as NBFCs. This creates certain challenges when trying to assess the basis for RBI's regulation of these entities, and the effect it has on re-shaping the overall role of the RBI as the Central Bank.

Some of the challenges that arise from the present approach to the regulation of the Account Aggregator system and its information flows have been detailed in section 4.3 of this paper. Informed by this analysis as well as the approach seen in regimes where a choice has been made to regulate account aggregation, we now attempt to answer the central question of this analysis with respect to the RBI. In doing so we arrive at a "boundary condition" to enable a Central Bank to assess *when* it should regulate information flows. In addition, we address some of the concerns specifically arising in the Master Directions. We then make policy proposals for regulatory changes that the RBI could implement to

Electronic copy available at: https://ssrn.com/abstract=3924793

anchor the Master Directions back to the Central Bank's core mandate and objectives, and harmonise it with the broader regulatory rubric for consumer financial protection and data protection in India.

6.1. Central Banks should not regulate the processing and sharing of personal information unless it is directly related to the provision of a financial service.

All regulations of Central Banks should be anchored in their long-standing, well-recognised objectives and functions. The RBI's own objectives and functions are largely in step with those of other Central Banks. They are to act (Reserve Bank of India, 2019):

- as a **Monetary Authority**, to formulate, implement and monitor the monetary policy of the country. The objective as a monetary authority is to maintain price stability while keeping in mind the objective of growth;
- as a **Regulator and supervisor of the financial system** to prescribe broad parameters of banking operations for the country's banking and financial system. The objective as a regulator and supervisor is to maintain public confidence in the system, protect depositors' interest and provide cost-effective banking services to the public;
- as a **Manager of Foreign Exchange**, with the objective of facilitating external trade and payment, and promoting orderly development and maintenance of foreign exchange markets;
- as an **Issuer of currency**, to issue and exchange currency notes and coins. The objective in this case is to facilitate adequate quantities of currency for the public;
- with a **Developmental role**, to undertake a wide range of promotional functions that support national objectives (such as financial inclusion);
- as **Regulator and Supervisor of Payment and Settlement Systems** to maintain safe and efficient payment systems, with the objective of maintaining public confidence in the payment and settlement systems of the country.

The RBI also has related functions pertaining to be the **banker to the Government** and performing the merchant bank function for the central and state governments. It is also a **banker to the banks**, maintaining banking accounts of all the schedules banks of the country.

As the provision, regulation and supervision of financial services becomes increasingly digital and data-driven, it is inevitable that the data emerging from financial activity will also be impacted by financial sector regulation. To the extent that financial transactions and services themselves generate data which further drives the execution of financial transactions it is inevitable that the Central Bank will need to regulate such financial data flows. However, such data flows are inherently tied to the underlying financial activity that is generating or interacting with the data flows. Ultimately, the Central Bank's competence and authority is only in relation to underlying financial activity—and consequently, data flows intimately connected with the undertaking of that financial activity. This forms a principled boundary condition to assess the extent to which Central Banks can regulate financial data flows i.e.:

Central Banks may regulate flows of financial data but only to the extent that it is complementary and directly connected to the provision of financial services, or undertaking of regulated financial activities.

This is the boundary condition that should determine whether and when a Central Bank should create rules and safeguards around the processing of customers personal financial data. Wider processing and sharing of personal financial data—not linked directly and immediately to the provision of financial services or the objectives of Central Bank regulation—cannot be regulated by Central Banks. Accordingly, any Central Bank regulation of financial data must also be aligned to Central Bank objectives that guide its approach to the underlying financial activity related to that data.

In the context of NBFC-AAs, the analysis emerging in this paper raises concerns that the approach of the RBI in the Master Directions may indicate that the Indian Central Bank has gone beyond this boundary condition. To mitigate the risk that might arise from the Central Bank is acting beyond its mandate, we make the alternative policy proposals in the next section.

Electronic copy available at: https://ssrn.com/abstract=3924793

6.2. The change in the nature of activities NBFC-AAs perform calls into question the appropriateness of their regulatory form.

The role of Account Aggregators is no longer the provision of aggregated statements of financial information to customers. With a wider scope of activities, Account Aggregators are now data-blind intermediaries.

6.2.1. Appropriateness of the NBFC-AA regulatory form vis-à-vis global Open Banking regimes

The activities of Account Aggregators in India are markedly different from AISPs in other regimes. AISPs in Bahrain provide online service of consolidated views of information on one or more accounts that a customer holds. AISPs in the EU provide online service of consolidated information to customers on one or more payment accounts held by them, with the option to share such information with other payment service providers.

In contrast, the activities of NBFC-AAs go far beyond those of account aggregator entities in global Open Banking regimes. First, they have access to unbounded amounts of customer's financial information. As noted previously, the financial information that can be transmitted across various entities is very wide in the Master Directions. In addition, the RBI has the power to specify any further information that can be shared through this system at any time. This level of access to financial information is very different from the very limited account and transaction information that is enabled to be "opened up" through APIs in the global Open Banking regimes.

Separately, Account Aggregators in India can retrieve and transfer all the customers' financial information data to a very extensive (and potentially unbounded) set of actors in the financial sector. The EU Open Banking regime restricts the sharing of consolidated account information only to a defined set of regulated payment institutions for related provision of payment services. In contrast, the Indian system is effectively enabling the harvesting and sharing of customer data without defined limits that will ensure that the original objectives of ensuring better and richer access to financial services are actually fulfilled. There does not appear to be any requirement in the Master Direction for the account aggregation service to be related directly to the provision of a purely financial service.

Finally, there is a complete lack of controls to limit the use of personal data queried for specific, immediate purposes. This is a major departure from the approach in other Open Banking regimes in Bahrain and the EU, that have undertaken strict measures to restrict the third parties enabled by their regimes to access account information and share limited information to specific providers for very specific purposes. The Master Directions on the other hand, enable large scale data sharing across a relatively undefined set of players, for no specific purpose. In addition, it is the RBI that specific the FIUs to whom financial information is transferred rather than this being done at the behest of the user. This shifts power away from consumers. It is completely unclear if any customer protection safeguards exist to guard against the risk of fraud, theft, data protection and privacy harms that could arise if such extensive information shared about a customer is misused. This could also create concerns at a systemic level for the financial system.

Given this scenario, the RBI is potentially departing from the approach of other Central Bank regulators by enabling large-scale customer data sharing across a relatively undefined set of players, for no specific purpose related to the immediate provision of financial services to a customer, through a regulation that is not strictly tied back to Central Bank objectives.

The rationale guiding the regulation of AISPs in those regimes tie back to core Central Bank objectives of consumer protection, developing and expanding access to finance and inclusion and driving competitiveness in the financial sector. It would be plausible to consider that similar objectives drove the creation of NBFC-AAs. Indeed, the original 2015 Press Release of the RBI did indicate that

Electronic copy available at: https://ssrn.com/abstract=3924793

consumer protection, enhanced access to finance and competitiveness were at the heart of the proposed regulation of Account Aggregators. However, the shift in the activities of NBFC-AAs as currently captured in the Master Directions could risk creating a disconnect between the regulation and the Open Banking style objectives that could have originally guided its creation.

6.2.2. Appropriateness vis-à-vis traditional principles of NBFC regulation

The objectives of NBFC regulation are often guided by considerations around driving financial inclusion and ensuring NBFCs take on appropriate amounts of risk without destabilising the financial system. NBFCs have also traditionally been companies focusing on lending and core-investment businesses. It is difficult to align the categorisation of Account Aggregators as NBFCs with the traditional frameworks driving the classification of NBFCs. While there may be an indirect regulatory function of a financial activity, the activities of the Account Aggregator in its present form are much wider than pure financial sector activities, calling into question whether it is appropriate for these types of entities to be classed NBFCs by the RBI.

As noted in section 4.3, if this signals a new direction in which the RBI is seeking to move by regulating in relation to technology service providers or data aggregators as NBFCs, then this has deeper implications i.e. that the RBI is staking the claim to regulate all information flows in the financial sector, irrespective of their connection to financial activity. This would be a difficult position to maintain, as information regulation is a complex subject which would realistically fall outside the competence or the legal authority of a Central Bank to regulate non-financial activity.

However, we do note that the RBI would have some competence to regulate financial information flows where these relate directly to financial activities and its overarching objectives. This limited information regulation mandate, must be in harmony with wider data regulation statutes and with its own Central Banking competence and objectives.

6.3. Policy proposals to align the Master Directions with Central Banking objectives and the wider regulatory landscape

Our assessment is that Master Directions as they stand may not be the best form to regulate data-blind intermediaries that share large tracts of information with several entities. To overcome some of the concerns and challenges that have arisen in our analysis, we propose certain revisions to the form and substance of the Master Directions as well as the activities of NBFC-AAs in order for them to be better aligned with the RBI's mandate and objectives.

- **Information-sharing to an FIU must be directly related to the provision of an identified, imminent financial service:** To begin with, the activities of NBFC-AAs relating to the consolidation, organisation and presenting of customer financial information to any FIU must be strictly related to the provision of an immediate, clear financial service that is identified in the Master Direction's text for e.g. to make a payment or provide a loan. Any information sharing must be subject to well-defined purpose and use limitations.

- **The definition of "*financial information*" in the Master Directions must be limited and amended**. The financial information that can be shared must be specific and tailored to the financial service identified in the texts of the Master Directions (such as making a payment, or provision of credit). For instance, if it is decided that NBFC-AAs will be used to enable the provision of loans, then only the information required by financial institutions to offer the specific loan should be made available.

- **The categories of FIUs and the information they can access must be limited, clearly identified and tracked:** Master Directions should set out the categories of FIUs that can access the new limited set of financial information, and the types of information that each FIU should

Electronic copy available at: https://ssrn.com/abstract=3924793

access. This should be tied to the immediate provision of a financial service to the relevant user. While doing so, it must also set out the nature of consent (required every time or one-time for a given time period) associated with the purpose and the subsequent access of financial information.

- **The Master Directions must be amended to specifically link wider data protection regulation into the regulation Master Directions**. India's Personal Data Protection regime should apply to all the entities in the Account Aggregator ecosystem, i.e., the FIUs, the FIPs, the Account Aggregator (as data fiduciaries) and the user (as a data principal). All FIUs, FIPs and NBFC-AAs would therefore be bound to well-established data protection requirements of specifying grounds of processing prior to access of data, collection limitation, purpose limitations, use limitations, retention requirements and so on. Given the imminent passage of India's omnibus Personal Data Protection Bill, the RBI must consider the boundaries of its competence to regulate customers personal financial data and areas that will require harmonisation. This is especially relevant because financial information of individuals is classed as "sensitive personal data" in the new regime and afforded a higher degree of protection and treatment (Ministry of Electronics and Information Technology, 2019).

  It is interesting to note that the RBI, in its deposition in September 2020 before the Parliamentary Joint Committee on the Personal Data Protection Bill, 2019 reportedly objected of the classification of financial data as sensitive personal data (Hindustan Times, 2020). In addition, the RBI also asserted its powers to make regulations regarding the storage of financial personal data and any restrictions on its transfer outside the country (Hindustan Times, 2020). These submissions raise questions regarding the extent of the Central Bank's mandate in the sphere of data regulation. Ideally rather than trying to set up a parallel regime the Central Bank should work alongside a future Data Protection Authority to enable sectoral "gold-plating" to enable both data protection and financial protection, as well as avoid creating conflicting requirements or competing regulatory mandates.

- **The Master Directions must place legal liability and accountability on FIUs and FIPs with respect to the personal data they receive from NBFC-AAs**: A central issue that these flows force us to ask is: how will data be protected after an FIU receives it from an AA, and it disappears into the FIU's systems? (Raghavan & Singh, 2020) If customer data is ejected out of a secure, encrypted NBFC-AA "data pipe" and taken by an FIU for use without any regulation or constraints, it could defeat the entire purpose of secure data sharing infrastructures.

- **Technical safeguards must be mandated in the Master Directions to enforce and align regulatory requirements**: The accountability of FIUs, FIPs and NBFC-AAs with respect to the personal data they receive or transmit must be enforced through strong technical solutions to address the massive risk to individuals and the financial system if that data is misused, breached or abused. The creation of a secure perimeter within which financial information is exchanged, tracked and regulated must be mandated and imagined in the Master Directions and Technical Specifications. For instance, the use of hardware components and programmes that can be executed to monitor interactions within a network of entities such as *trusted executables*[5] is currently being considered by the authors alongside experts based at an Indian academic institution.

[5] Trusted executables are executables (programs) on hardware that have no known vulnerabilities and are considered safe. They maintain a list of accessible users, actions permitted and other entities in the network that can be interacted with, amongst other rules that can be configured (Mcfee, 2018).

Electronic copy available at: https://ssrn.com/abstract=3924793

If these changes are made in the Master Directions, it could anchor the NBFC-AA system once again into initial objectives for this system to drive financial inclusion in India, by overcoming information asymmetries caused by data siloes that can limit providers' ability to engage with customers as well as improve the quality of their financial offerings.

This paper has sought to understand the nature of the Account Aggregators system in India which is emerging as a way to enable large-scale information-sharing about consumers across the financial sector. In doing so, it has arrived at a boundary condition that could guide Central Banks of the future who will have to navigate data-intensive systems. To ensure that they are truly consumer aligned, Central Banks should regulate financial information flows only where it is directly and intrinsically linked with financial services activity. In doing so, they must align their regulation with wider data protection principles to protect consumers and harmonise their regulation with the broader regulatory framework for data protection in India.

Electronic copy available at: https://ssrn.com/abstract=3924793

References

1. Blinder, A. S. (1998). *Central Banking in Theory and Practice*. Retrieved from Mises Institute: https://mises.org/library/central-banking-theory-and-practice-alan-s-blinder-0
2. Central Bank of Bahrain. (2018, December). *Open Banking Module*. Retrieved September 2020, from CBB Rulebook: https://cbb.complinet.com/net_file_store/new_rulebooks/v/o/Vol_5_Ancillary_OB_Dec_2018.pdf
3. Central Bank of Bahrain. (2019, September). *Financial Stability Report-September 2019*, Issue no. 27. Retrieved September 2020, from Central Bank of Bahrain: https://www.cbb.gov.bh/wp-content/uploads/2020/01/FSR-Sep-2019-V4.pdf
4. Central Bank of Bahrain. (2019a). *CBB Rulebook: Volume 1 - Conventional Banks; Part A: Introduction*. Retrieved September 2020, from Central Bank of Bahrain: https://cbb.complinet.com/cbb/display/display_viewall.html?rbid=1820&element_id=4221
5. Central Bank of Bahrain. (2019b). *CBB Rulebook Volume 5 - AU-1.2.1 Past version effective from Dec 1 2018 - Sep 30 2019*. Retrieved September 2020, from Central Bank of Bahrain: https://cbb.complinet.com/cbb/display/display.html?rbid=2175&record_id=8278&element_id=5952
6. Central Bank of Bahrain. (2019c, January). *CBB Rulebook Volume 5 Specialised Licensees (Ancillary Service Providers) - Ancillary Service Providers Authorisation Module*. Retrieved September 2020, from Central Bank of Bahrain: https://cbb.complinet.com/net_file_store/new_rulebooks/v/o/Vol_5_Ancillary_AU_Oct_2019_Updated_1.pdf
7. Central Bank of Bahrain. (2019d). *CBB Rulebook Volume 5—Specialised Licensees*. Retrieved September 2020, from Central Bank of Bahrain: https://cbb.complinet.com/cbb/display/display.html?rbid=2175&element_id=1
8. Central Banks of the Future. (2020). *Call for Papers & Proposals*. Retrieved from Central Banks of the Future: http://financelawpolicy.umich.edu/files/call-for-proposals_central-bank-of-the-future-conference-2020.pdf
9. Committee on Payments and Market Infrastructures. (2017). *Payment, clearing and settlement systems in the Kingdom of Bahrain (Red Book)*. Bank for International Settlements, Committee on Payments and Market Infrastructures. Basel: Bank for International Settlements.
10. DigiSahamati Foundation. (2019a, July 25). *AA Sahamati CUG Press Release*. Retrieved from DigiSahamati Foundation: https://sahamati.org.in/blog/aa-sahamati-cug-press-release/
11. DigiSahamati Foundation. (2019b, July 25). *Nandan Nilekani introducing the Account Aggregator at CUG on July 25, 2019*. Retrieved from DigiSahamati Foundation: https://sahamati.org.in/blog/nandan-nilekani-introducing-account-aggregator-at-cug/
12. DigiSahamati Foundation. (2020). *Account Aggregators in India*. Retrieved from DigiSahamati Foundation: https://sahamati.org.in/account-aggregators-in-india/
13. Directive (EU) 2015/2366 . (2015, December 23). *Directive (EU)2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) 1093/2010,& repealing Directive 2007/64/EC*. Retrieved September 2020, from Document 02015L2366 — EN — 23.12.2015 — 000.005 — 1: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02015L2366-20151223&from=EN
14. Directive (EU) 2015/2366. (2015, December 23). *L 337/35 - Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market*. Retrieved September 2020, from Official Journal of the European Union: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015L2366

Electronic copy available at: https://ssrn.com/abstract=3924793

15. European Banking Federation. (2019, December 20). *Guidance for implementation of the revised Payment Services Directive (PSD2 Guidance)*. Retrieved September 2020, from European Banking Federation: https://www.ebf.eu/wp-content/uploads/2020/01/EBF-PSD2-Guidance-Final-v.120.pdf
16. European Commission. (2020a, February 1). *Payment services (PSD 2) - transposition status. (E. Commission, Producer, & European Commission)* Retrieved September 2020, from European Commission: https://ec.europa.eu/info/publications/payment-services-directive-transposition-status_en
17. European Commission. (2020b). *Payment Services. Retrieved September 2020*, from European Commission: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/consumer-finance-and-payments/payment-services/payment-services_en
18. Geslevich Packin, N. (2020, January 27). *Show Me The (Data About The) Money! What You Didn't Know About Data Aggregation Can Hurt You*. Retrieved September 2020, from Forbes: https://www.forbes.com/sites/nizangpackin/2020/01/27/show-me-the-data-about-the-money-what-you-didnt-know-about-data-aggregation-can-hurt-you/#1dcb2b0ae92f
19. Government of India. (2008). *The Information Technology ACT, 2008*. Retrieved from Hyderabad police: https://hyderabadpolice.gov.in/acts/ITAct2000-2008(amendment).pdf
20. Government of India. (2019). *The Personal Data Protection Bill 2019.* Retrieved from Lok Sabha Secretariat: http://164.100.47.4/BillsTexts/LSBillTexts/Asintroduced/373_2019_LS_Eng.pdf.
21. Hindustan Times, (2020, September 10). *RBI seeks exemption from data protection law.* Retrieved September 2020, from Hindustan Times: https://www.hindustantimes.com/india-news/rbi-seeks-exemption-from-data-protection-law/story-kwQzNs614s0C56VK6HTCJP.html
22. HM Treasury. (2017, July). *Implementation of the revised EU Payment Services Directive II:response to the consultation*. Retrieved September 2020, from Gov.UK: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/629988/Implementation_of_the_revised_EU_Payment_Services_Directive_II_response.pdf
23. Kapoor, S. (2020, April). *Tracing the development of "intermediary liability" in India*. Retrieved September 2020, from Lexology: https://www.lexology.com/library/detail.aspx?g=be8df572-55b1-499a-85cf-8b44b59ee0bc
24. Kumar, N. (2019, March). *Functioning on an Uneven Keel: Capital Regulation of Credit Intermediaries in India*. Retrieved September 2020, from Dvara Research, Notes on the Indian Financial System - Note 6: https://www.dvara.com/research/wp-content/uploads/2019/03/Capital-Regulation-of-Credit-Intermediaries-in-India.pdf
25. Lakshmanan, S. (2018, November 19). *Exclusive: RBI issues in-principle licenses to 5 Account Aggregators*. Retrieved September 2020, from Medianama: https://www.medianama.com/2018/11/223-exclusive-rbi-issues-in-principle-licenses-to-5-account-aggregators/
26. McInnes, S., & Sampedro, L. (2019, February). *EU:The interplay of PSD2 and GDPR - some select issues*. Retrieved September 2020, from Dentons: https://www.twobirds.com/~/media/pdfs/eu-the-interplay-of-psd2-and-gdpr--some-select-issues.pdf?la=en&hash=0B33F1956F81822A8444AF77516CB1A5E2119121
27. Ministry of Electronics and Information Technology. (2019, December). *The Personal Data Protection Bill, 2019*. Retrieved from PRS India: https://prsindia.org/sites/default/files/bill_files/Personal%20Data%20Protection%20Bill%2C%202019.pdf
28. Minupuri, N. (2019, May 23). *Rushing to Regulate: Rethinking the RBI's Directives on Peer-to-Peer Regulations in India*. Retrieved September 2020, from Emory International Law Review:

Electronic copy available at: https://ssrn.com/abstract=3924793

http://law.emory.edu/eilr/content/volume-33/issue-3/comments/rethinking-rbi-directives-peer-regulations-india.html
29. Neelima, K. M., & Kumar, A. (2017). *Non-Banking Financial Companies in India's Financial Landscape*. Retrieved from Reserve Bank of India: https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/01AR101017F2969F6115EB4B5992BD73976F9A905D.PDF
30. NeSL Asset Data Limited. (2018, June 28). *Request for Proposal for Selection of Vendor for Design, Development, Installation, Integration, Configuration, Support.* Retrieved from National e-Governance Services Limited (NeSL): https://www.nesl.co.in/wp-content/uploads/2018/06/NADL_RFP_26062018-update.pdf
31. NITI Aayog. (2020, August). *Data Empowerment And Protection Architecture*. Retrieved from NITI Aayog: https://niti.gov.in/sites/default/files/2020-09/DEPA-Book_0.pdf
32. Piechocki, M. (2016, September*). Data as a critical factor for central banks*. Retrieved from Bank of International Settlements.
33. Preta S.A.S - Open Banking Europe. (2017). *Registration & Passporting - PRETA Open Banking Europe PSD2 Guide*. Retrieved September 2020, from Open Banking Europe: https://www.openbankingeurope.eu/media/1175/preta-obe-mg-001-002-psd2-xs2a-registration-passporting-guide.pdf
34. Raghavan, M., & Singh, A. (2020, January 7). *Building safe consumer data infrastructure in India: Account Aggregators in the financial sector (Part–2).* Retrieved September 2020, from Nalsar Tech Law Forum Blog / Dvara Research Blog: https://www.dvara.com/blog/2020/01/07/building-safe-consumer-data-infrastructure-in-india-account-aggregators-in-the-financial-sector-part-2/
35. Raghavan, M., Chugh, B., & Singh, A. (2019, April). *Primer on Consumer Data Infrastructure*. Retrieved September 2020, from 4th Dvara Research Conference - Regulating Data-Driven Finance: https://www.dvara.com/research/conference2019/wp-content/uploads/2019/04/Primer-on-Consumer-Data-Infrastructure.pdf
36. ReBIT. (2019). *Account Aggregator Purpose Definitions*. Retrieved from ReBIT: https://api.rebit.org.in/purpose
37. Reserve Bank of India. (1934, March 6). *Reserve Bank of India Act, 1934*. Retrieved from Reserve Bank of India: https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/RBIA1934170510.PDF
38. Reserve Bank of India. (2013, February 22). *Guidelines for Licensing of New Banks in the Private Sector*. Retrieved from Reserve Bank of India: https://www.rbi.org.in/scripts/bs_viewcontent.aspx?Id=2651
39. Reserve Bank of India. (2014, November 10). *Revised Regulatory Framework for NBFC*. Retrieved from Reserve Bank of India: https://www.rbi.org.in/scripts/NotificationUser.aspx?Id=9327&Mode=0
40. Reserve Bank of India. (2015, July 02). Press Release 2015-2016/27: *RBI Central Board meets at Chennai: RBI to allow Account Aggregator NBFCs; to set up Financial Inclusion Advisory Committee*. Retrieved September 2020, from Reserve Bank of India: https://www.rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=34345
41. Reserve Bank of India. (2016a, March 3*). Directions regarding Registration and Operations of NBFC - Account Aggregators under section 45-IA of the Reserve Bank of India Act, 1934*. Retrieved from Reserve Bank of India: https://rbidocs.rbi.org.in/rdocs/content/pdfs/DNBFCA030316.pdf
42. Reserve Bank of India. (2016b, April). *Consultation Paper on Peer to Peer Lending*. Retrieved from Reserve Bank of India: https://rbidocs.rbi.org.in/rdocs/content/pdfs/CPERR280416.pdf
43. Reserve Bank of India. (2016c, September 02). *Master Direction- Non-Banking Financial Company - Account Aggregator (Reserve Bank) Directions, 2016 (Updated as on November 22,*

Electronic copy available at: https://ssrn.com/abstract=3924793

2019). Retrieved from Reserve Bank of India: https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=10598

44. Reserve Bank of India. (2016d). *Annual Report of the RBI*. Retrieved from Reserve Bank of India: https://www.rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1179#B64
45. Reserve Bank of India. (2018, April). *Report of the High Level Task Force on the Public Credit Registry for India*. Retrieved from Reserve Bank of India: https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/PCRRR09CF7539AC3E48C9B69112AF2A498EFD.PDF
46. Reserve Bank of India. (2019a, November 08). *Technical Specifications for all participants of the Account Aggregator (AA) ecosystem*. Retrieved from Reserve Bank of India: https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11729&Mode=0
47. Reserve Bank of India. (2019b, December 24). *Report on Trend and Progress of Banking in India 2018-19*. Retrieved September 2020, from Reserve Bank of India: https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP241219FL760D9F69321B47988DE44D68D9217A7E.PDF
48. Reserve Bank of India. (n.a.). *About Us*. Retrieved from Reserve Bank of India: https://www.rbi.org.in/Scripts/AboutusDisplay.aspx#MF
49. Shashidhar, K. L. (2015, July). *RBI proposes new NBFCs to act as account aggregator across financial institutions*. Retrieved from Medianama: https://www.medianama.com/2015/07/223-rbi-account-aggregator/
50. The Central Bank of Bahrain and Financial Institutions Law 2006. (2019). *The Central Bank of Bahrain and Financial Institutions Law*. Retrieved September 2020, from Central Bank of Bahrain: https://cbb.complinet.com/cbb/display/display.html?rbid=1886&element_id=12
51. UK Financial Conduct Authority. (2019, June). *Payment Services and Electronic Money - Our Approach, June 2019 (version 3)*. Retrieved September 2020, from Financial Conduct Authority : https://www.fca.org.uk/publication/finalised-guidance/fca-approach-payment-services-electronic-money-june-2019-track-changes.pdf
52. Walshe, O. T. (1991). *Managing a Central Bank: Goals, Strategies, and Techniques. In I. M. Fund, The Evolving Role of Central Banks* (pp. 93-120). Washington, D.C.: International Monetary Fund.
53. Zetzsche, D. A., Ross, B. P., Douglas, A. W., & Janos , B. N. (2017). *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*. Fordham Journal of Corporate and Financial Law, 23 (European Banking Institute Working Paper Series 2017 - No. 11), 31-103.

Electronic copy available at: https://ssrn.com/abstract=3924793