Impact measurement in open finance:

Initial review of global experiences and thematic priorities for measurement

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This brief considers the emerging practices for impact measurement of open banking and open finance across policy-led markets,[1] highlighting the sampling approaches, methods of analysis, and most relevant findings and conclusions. **Based on this review of emerging practices, five thematic areas are recommended as priorities for the first phase of a monitoring-learning-evaluation (MLE) strategy for open finance:**

1. **Market Innovation**. Open finance seeks to increase choice between competing firms and enable new products through expanded data exchanges and improved payment systems. An MLE strategy should begin then with measurement of how open finance is impacting the number and types of firms participating in the market, and the general state of competition.
2. **Quality and availability of open finance information and transactions**. The quality and consistency of information exchange and payment transactions will in large part determine how much open finance improves on the current financial ecosystem. Measuring the quality and availability of information exchange and payments is already an explicit supervisory priority in most open finance regimes. Aligning these reporting requirements with analysis of the impact of data quality on things like credit risk and product diversity should be part of the supervisory strategy.
3. **Consumer use and benefit**. Impact evaluations have measured how open banking and open finance improves access to and the terms of credit products, including large effects for underserved populations. Using a combination of market level data on products on offer, terms, and firm-level data, authorities can measure how product innovation occurs in open finance, and conduct regression analysis to see how different consumer segments benefit from improved product offerings in credit and other priority product segments.
4. **Market conduct and consumer risks**. Open finance raises several market conduct risks, in particular data protection, fraud, and debt stress. Comfort with sharing financial information and trust in open finance can be measured to understand their impact on usage—and how to increase trust and usage, taking advantage of

[1] We do not consider voluntary, private models in much detail as it seems key to benchmark the open finance's impact against its rules and implementation model, which are policy measures

consent requirements in regulations. Administrative data on fraud incidences can identify how open finance shifts fraud risks, and lead to more timely responses to emerging fraud issues, with built in impact evaluation of the effect of those protective measures for continuous refinement and improvement of fraud prevention solutions. Consumer surveys and account/transactional data can be used to measure whether there are any risks of debt stress arising from increased credit access in open finance.

5. **Costs and pricing of open finance implementation**. The funding and financial sustainability of open finance remains a hotly debated and complicated policy topic in leading open finance markets. It could be useful to measure how costs of open finance implementation shift over time, and put these in the context of the benefits for firms and consumers referenced in thematic areas 1 and 3 above. This would also help to determine pricing rules for participants to achieve a fair, if only partial, cost recovery and to sustain shared infrastructure costs of the open finance.

The analysis of impact measurement first **reviews the different data sources and sampling approaches that are being experimented with for impact measurement in open banking and open finance** across the globe; and then **summarizes four methods of analysis observed in the current literature on open finance impact**: 1. Qualitative descriptive; 2. Quantitative descriptive; 3. Difference-in-difference; and 4. Regression analysis; before concluding by proposing **five thematic priorities suggested for measuring the impact of open finance**.

I. Data sources and sampling for an MLE framework in open finance

The first aspect of the MLE strategy should be determining the data collection and sampling approach. The several broad policy objectives in open finance (competition, inclusion, innovation), the combination of data exchange and payments initiation, and the diversity of participating entities calls for a consolidated data strategy, versus different strategies for specific MLE objectives. This MLE strategy also needs to be intertwined with the supervision requirements within the open finance regime. There are several regulatory obligations that form the core aspects of open finance supervision: 1. Registration and authorization; 2. Participant oversight; 3. Data exchange; 4. Consent; 5. Risk management; and 6. Pricing and cost reimbursement. The indicative MLE sampling framework presented here is based on these activities and their related functions. Initial ideas for the sampling approach and methodologies are discussed below, informed by a review of some of the emerging MLE practices in open finance markets globally. The sources for MLE data are discussed first, followed by the segmentation approach to open finance data.

A. Sourcing of MLE data

To measure the growth and performance open finance, an approach to pulling data such as transaction volumes, types, and uptake needs to be determined. In looking at models from other open finance regimes, a few guiding ideas have emerged.

First, the presence or absence of a centralized dashboard impacts the complexity of the data collection and its coverage for measuring impacts of open finance. Markets like Brazil[2] and India have developed centralized systems where the full volume of API call and activities can be measured. This has led to sophisticated analysis on uptake, usage, quality and other MLE metrics. In Brazil, the technological infrastructure outlined in the regulations includes "a central directory, which served as a repository for the information of the participating institutions; a service platform; a channel for forwarding the demands of the users and institutions (service desk); a dispute resolution platform, set up for structured discussions of problems between institutions; an information portal for the general public; security requirements for the developers; and a self-reporting indicator panel (dashboard)."[3] In India, Sahamati, the implementing entity for India's largest Account Aggregator network, publishes a range of dashboards covering uptake and usage, API health, service status, grievances, connectivity between participants, and account types activated by participants. In other markets like Australia, the government has not invested much in external reporting dashboards, which has limited the volume of data that can be used to track progress and performance (although Australia does do periodic monitoring activities such as data quality audits.)[4]

Where there is no central entity with a performance monitoring solution like in Brazil and India, participant-level reports may need to be separately collected and then aggregated and analyzed to produce this type of analysis. There will be trade-offs between detail, timing, and comprehensivity of the data with the costs and effort to produce such analysis. This doesn't mean that robust data can't be collected though. In the United Kingdom (UK), Open Banking Limited's "Open Banking Impact Report" (currently in its seventh edition[5]) primarily collects data from the "CMA 9", the nine banks required to comply with the initial open banking remedies from the Competition and Markets Authority,

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[2] https://dashboard.openfinancebrasil.org.br/open-data/api-requests/evolution

[3] file:///C:/Users/Rafe/Documents/Consulting/Open%20Finance%20Research%202025/Impact%20Evaluation/Readings/Read/Brazil%20Open-Finance-Brazil-%E2%80%93-Annual-Report-2024.pdf

[4] See, for example, this critique of the limited performance data shared in Australia's Consumer Data Right system by Heidi Richards, a local expert and author of the review of the costs of the CDR in Australia: https://www.linkedin.com/feed/update/urn:li:activity:7343161765985177600/

[5] https://www.openbanking.org.uk/insights/obl-impact-report-7-open-banking-delivers-real-world-impact-as-adoption-accelerates-year-on-year/

although this still represents an estimated 85% of payments volume.[6] **Using a sample of the larger entities, which cover a certain percentage of total accounts (e.g. 90% of banking customers), authorities could begin monitoring high-level market growth and performance in the absence of a central dashboard.**

There is also the option of using other administrative data to supplement the data collected through official open finance sources. The study "Does open banking expand credit access?" in India utilized several additional sources for their analysis of how open banking increased loan access and reduced costs: Transunion's database of retail loans from 2016-2019; payment service providers' digital transactions volume; bank branch deposit data and number of JDY accounts opened (a government-mandated "no frills" deposit product); telecom tower location data; and fintech lending firm data at loan and borrower level.[7] Even Sahamati, which has the central dashboard as noted above, has used extrapolation, including in their "Credit Reimagined: AA Impact Report H2 FY25", where they used data from 12 financial information users (similar to the Proveedor de Servicios Basado en Información category in Chile), which covers 67% of lending consents fulfilled in their open finance ecosystem, and extrapolated this to estimate the use of open finance for credit provision.[8]

Where bank reporting is insufficient, authorities can also use data from account information and payment initiation service providers, since they facilitate these transactions, although this data can lack some of the granular data bank data will have (such as customer demographics.) This can also be done for data on redress or fraud, where banks or other providers may resist reporting, or to check and ensure they are not underreporting this kind of data. However, if third party data is used, a risk of double counting needs to be controlled for, such as by only collecting data from the sending side of payment service provider transactions.[9]

Another source used to supplement participant reporting is government or other official data. The Central Bank of Spain collects balance sheet data on various entities, including fintechs, which was used to evaluate the effect of the Payment Service Directive 2 (PSD2) on market entry and performance of fintechs.[10] The Bank of England similarly

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[6] https://openbanking.foleon.com/live-publications/the-obl-impactreport-7/adoption-analysis
[7] https://thedocs.worldbank.org/en/doc/224ef95415948656163953f97acbeffe-0050062024/original/Open-Banking-Latest-PPT.pdf
[8] https://sahamati.org.in/the-credit-reimagined-account-aggregator-aa-impact-report-h2-fy25/
[9] https://www.openbanking.org.uk/wp-content/uploads/Framework-for-data-collection-on-financial-crime.pdf
[10] https://www.bde.es/f/webbe/SES/Secciones/Publicaciones/PublicacionesSeriadas/DocumentosTrabajo/25/Files/dt2514e.pdf

used data on venture capital investments and mandatory reporting of debt obligations by SMEs to measure open banking's impact on market entry and credit access in their report "Customer data access and fintech entry: Early evidence from open banking."[11]

Authorities should also consider what data they already collecs on the regulated participants in open finance, and how this may provide useful data to measure the impact of open finance. **There are some prudential, conduct, and other reporting requirements which may be useful to support more complicated impact evaluation methods and metrics (e.g. market entry, improvements in performance.)** Authorites can also look beyond these sources to review criminal data (e.g. financial crimes data), data protection incidences, and government business registries or tax databases. (In the UK, Open Banking Limited uses the data from the companies providing tax payment services to the tax authority to monitor open finance usage.)

Surveys are important for building a data foundation for MLE in open finance, including both firm surveys and consumer surveys. Firm surveys are a common and simple tool used in open finance markets. In this model, authorities will send out questionnaires or reports for participating firms to complete, with a mix of qualitative and quantitative data. In Australia, the ACCC collects bi-annual reports from Data Holders and CDR Representative Principals, covering consumer complaints (volumes, type, resolution), data request volumes and performance, and any new goods or services offered to consumer data rights customers.[12] In Brazil, the central bank conducts use case surveys of participating firms on topics such as spikes in consents for data requests, what data sources have proven most useful to develop use cases, which products they are using open finance data for, and use cases developed for payment initiation services. These types of surveys can also be done as one-off for a specific policy purpose, such as in India, where a survey was done of data users in the account aggregator ecosystem who have personal financial management services as a primary use case.[13]

The other type of survey used for MLE in open finance is a consumer or user survey. This can be an open-finance specific survey, embedding open finance questions in existing financial consumer surveys, or using existing surveys to provide data to support MLE analysis in open finance. In Brazil and India, CGAP has funded surveys which measured which consumers types were and were note using open finance, their reasons, and the

[11] https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2024/customer-data-access-and-fintech-entry-early-evidence-from-open-banking.pdf
[12] https://www.accc.gov.au/by-industry/banking-and-finance/the-consumer-data-right/consumer-data-right-cdr/reporting-forms-rule-94
[13] https://sahamati.org.in/wp-content/uploads/2024/07/Report-on-PFM-in-the-AA-Ecosystem.pdf

leading use cases.[14] In India, the survey was run in 2023 and 2024, which allowed for measurement of the substantial progress over 12 months in adoption and usage. Where primary survey data is not possible or too expensive, existing survey data can be used. In the previously noted analysis of open banking by the Bank of England, they used two additional data sets, the Financial Conduct Authority's household survey (to measure data sharing for 1. Borrowing and 2. Financial planning and management) and the Global Findex survey (to standardize usage and access metrics). These unrelated surveys provided data on financial behavior and usage that supported the Bank of England's analysis of fintech entry in open banking. (They also used datasets such as the EY Global Fintech Adoption Index, which appears to have data on trust in and data sharing with fintechs that the CMF could utilize for similar analysis.)

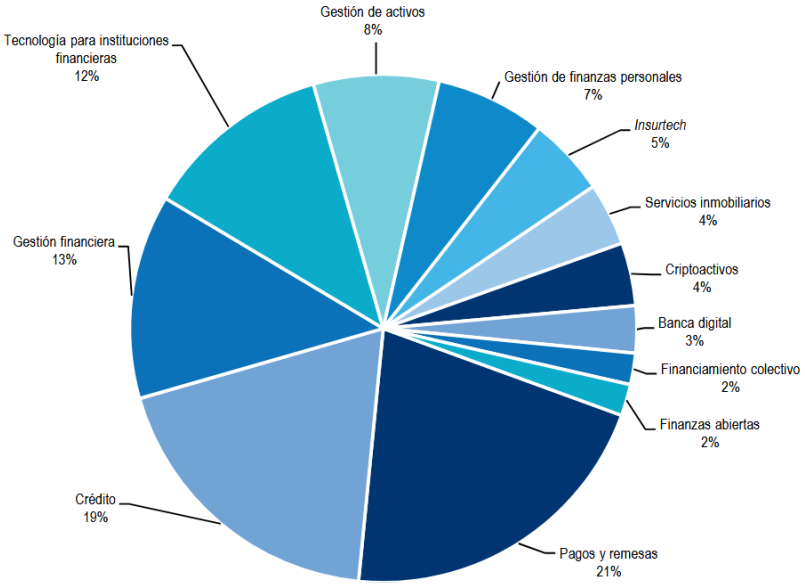
B. Segmentation of open finance data

The data sources and sampling approaches chosen for the MLE framework will need to also consider what types of segmentation are desired and feasible. Looking at global experiences to date, **several segmentation are used in open finance MLE: 1. Participating entity types; 2. Customer types (e.g. individual or business); 3. Data request use cases; 4. Product types (e.g. types of loans originated or payment categories); 5. Types of transactions/payments.** Brief examples of these segmentation approaches are shared below.

1. Participating entity types. Requirements to document the sending and receiving entities for all transactions and data exchanges makes segmentation by entity (firm level) or entity category (e.g. bank, payment service provider, third party provider) possible in open finance MLE. As noted in the India example above, this can be focused on a specific type of participant—in that case registered investment advisors; by sector—such as in the various studies which have evaluated the impact of open banking on growth of different parts of the fintech market; or by activity type of the providers, as has been done to document use cases of fintech in Latin America.[15] (See Figure below)

[14] https://www.cgap.org/blog/success-in-open-finance-requires-trust-lessons-brazil ; https://www.cgap.org/blog/convenience-drives-rapid-adoption-of-account-aggregators-in-india
[15] https://www.oecd.org/es/publications/competencia-fintechs-y-open-banking_f150ac77-es.html

Gráfico 2.3. Distribución de las actividades de las empresas *fintech* en ALC, por segmentos



Fuente: Finnovista, 2024.

COMPETENCIA, FINTECHS Y OPEN BANKING © OCDE 2024

Source: OECD, 2024. Competencia, fintechs, y open banking.

2. Customer types. Customers in open finance can be segmented in numerous ways, such as demographics, legal status, or product uses. One of the common segmentations used in open finance is individual versus business account. In looking at existing open finance MLE efforts, the biggest limiting factor to customer type segmentation is what data is tracked, and how consistently this is tracked. Third parties like payment initiation or account information service providers will often lack deep demographic visibility on the consumers whose transactions they facilitate. As much as possible, customer data should be harmonized across participants for the actual activities in open finance (consent/consent archives, KYC, payments, data transfers), but there will probably be cases where the personal data a bank tracks on a customer for prudential or other purposes is not required of other entities in open finance, and making them add in additional data in onboarding just to support market monitoring could be excessive. Workarounds to these limitations are being tested in some markets. For example, where products have certain requirements related to who can quality, such as business loans, data and transactions linked to that type of account can signal the type of customer with

near certainty. Additional data sources like credit scores or location can also create segments that approximate socio-economic categories, as has been done in India.[16]

Another way that customer segments can be used is to create pseudo control groups. For example, in the United Kingdom student loans and pawnbroker loans were used as control groups to compare to consumer lending in open banking, as those sectors were not covered by open banking.[17] Identifying similar but excluded sectors or firms for could help to create similar samples for impact evaluation studies where large consumer groups can be compared.

3. Data request use cases. Good practice in informed consent for data usage requires "specification of purpose", where the party requesting data access informs the customer what they plan to collect and how they will use this data. Such a requirement can create a trail of information on why firms request data in open finance, which can be used to approximate the types of products and services that are going to be provided through open finance.

4. Product types. Product type categories should be relatively easy to compile, given the regulatory definitions of payments, deposit, and lending products. It is probably worth further segmenting by sub-products, such as consumer versus SME loans, single and variable payments, or different types of checking accounts. Individual lenders may also have different types of products which are similar but are or are not linked to open finance, and asking them to share these lists would be useful to identify any similar products that are included/excluded from open finance, to see if any comparative analysis of the change in portfolios and features post-open finance launch is possible.

5. Types of transactions/payments. Multiple open finance ecosystems are disaggregating payments transactions into various types of payments, such as single versus recurring payments. Where transaction-level data is available with details on the payments themselves, segmentation of consumer experiences and outcomes becomes possible. In the United Kingdom, researchers analyzed 90,5232 anonymised transactions of 1,817 UK payday customers in 2017 and 2018 across 70 financial institutions, categorizing the transactions into eight categories: basic, discretionary, and luxury expenses; basic, discretionary, and non recurrent transfers; and recurrent and non-recurrent income. They were able to then identify which segments of consumers were experiencing increased financial vulnerabilities such as debt stress due to increased borrowing from open banking,

[16] https://thedocs.worldbank.org/en/doc/224ef95415948656163953f97acbeffe-0050062024/original/Open-Banking-Latest-PPT.pdf
[17] https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2024/customer-data-access-and-fintech-entry-early-evidence-from-open-banking.pdf

and which were able to mange these new debts adequately.[18] In Brazil, the central bank's Use Case Table asks participants to report which types of transactional data were used for different use cases and benefits provided to consumers due to open banking. Categories include balance checks, credit limit checks, records of deposit and payment transactions, and investments.

II. Impact analysis methods

From a review of the existing literature, four methodologies for MLE in open finance appear to be commonly used. The first two methodologies are qualitative and quantitative descriptive data. Qualitative data can take the form of surveys or interviews of firms and consumers. This can include questions on use cases and benefits for product innovation derived from open finance, or questions on general experiences or issues with different aspects of open finance policy and implementation. In Australia, the "Consumer Data Right Compliance Costs Review" was conducted to better understand the costs industry was facing in implementing the CDR. A primary method of data collection was interviews with firms participating in the CDR. In these interviews, firms provided information such as estimated compliance costs—shedding light on how widely these costs varied between banks and fintechs, and what aspects of building the required API connectivity were most challenging or costly, and how this could be improved (such as exemptions for products with low numbers of accounts and/or corporate customer segments.)[19] Qualitative data from consumers can also support the MLE framework for open finance. Consumer qualitative data is particularly useful to identify possible issues and deepen understanding of these issues before investing in quantitative descriptive data tools like consumer surveys. In the UK qualitative interviews were used to identify the primary types of frauds in the payments and open banking space, which informed the categories of financial crimes that are reported by financial institutions.[20] In this way, qualitative data can guide more informed collection of quantitative descriptive data such as volumes and usage data, performance and quality data, or representative consumer survey data.

The third and fourth approaches to impact measurement commonly used in open finance are difference-in-difference analysis and regression analysis of sub-segments

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[18] https://www.researchgate.net/publication/371311395_Detecting_Consumers'_Financial_Vulnerability_using_Open_Banking_Data_Evidence_from_UK_Payday_Loans

[19] https://treasury.gov.au/publication/p2024-512569

[20] https://www.openbanking.org.uk/wp-content/uploads/OBLs-Financial-Crime-Report-Dec-2024.pdf

of consumers or participants within open finance. Difference in difference analysis includes comparing firms who were or were not covered by open finance reforms, consumer segments below/above cut-offs for open finance, or consumers who opt into or out of activities such as data sharing. Regression analysis of sub-samples of firms or consumers typically uses granular account and transaction-level data to measure how different consumers experience open finance or how open finance impacts the delivery and features of financial products. To date much of the difference-in-difference analysis has looked at how open finance impacts fintech firms, or included versus excluded consumer segments, and the regression analysis of sub-samples has in large part focused on access and quality of credit products.

Difference in difference analysis. In Spain, an analysis of PSD2's impact on fintech entrance and performance utilized a difference-in-difference method that separated fintechs impacted by the payments and data sharing elements of PSD2 from those types of fintechs not impacted. Market entry/exit and balance sheet data was compared across these samples. The analysis found that impacted fintech firms have higher return on assets, reduced bank debt and debt overall, reduced cost of debt, and shifted their debt towards alternative funding mechanisms.[21] The Bank of England utilized a policy cut-off where SMEs with annual turnover above 25M GBP were not included in open banking, comparing SMEs below and above the cutoff amount, concluding that "being eligible to share data makes SMEs more likely to form new lending relationships with non-bank lenders, consistent with increased fintech entry following open banking policies." To assess fintech entry, the study utilizes data on venture capital investment in fintech startups, comparing the UK with other markets.

Two studies looking at the impact of PSD2 at the EU level, "The impact of PSD2 on the paytech sector development in Europe" and "Has PSD2 Favoured Investments in the European PayTech Companies?", offer further examples of how policy cutoffs and industry data can be used to measure difference in difference regarding open banking implementation. The first study utilized payment licensing data across EU countries, but interestingly also measures market dynamics, such as market size, presence of sandboxes and innovation hubs, and primary means of payments. These variables are factored into the regression analysis conducted, and are worth reviewing, so are shown below (see Figure.) The analysis finds that the three main drivers of paytech licenses are: Potential of

21 https://www.bde.es/f/webbe/SES/Secciones/Publicaciones/PublicacionesSeriadas/DocumentosTrabajo/25/Files/dt2514e.pdf

the economy, authorities' involvement in supporting paytech development (especially sandbox), and consumer habits of using payment cards for cashless transactions.[22]

Table 3
Variable definitions.

	variable name	definition
Dependant variables	*paytechs before psd2*	number of entities granted payment licence established before approval of psd2 at the ue level (european Banking Authority, 2020)
	PayTechs Before National Law	Number of PayTech entities established after PSD2 approval but before the transposition of PSD2 to the national laws in individual countries (European Banking Authority, 2020)
	PayTechs After PSD2 Transposition	Number of new PayTech entities established after the transposition of PSD2 to the national law in individual countries (European Banking Authority, 2020)
	E	Number of incorporated companies (market entries) by Orbis database (Bureau van Dijk, 2020)
Time-variant indicator variables	*PAYTECH*	Indicator variable for companies licensed under PSD2 by the end of 2019 (European Banking Authority, 2020)
	EUPSD2	Indicator variable for the period after the approval of PSD2 at EU level (EUR-Lex, 2019)
	NPSD2	Indicator variable for the period after publication of last law implementing PSD2 at national level (EUR-Lex, 2019)
Market potential	*Population*	Total Population of a country in 2018 (Eurostat, 2019)
	GDP (in million EUR)	Gross domestic product of a country in euros in 2018 (Eurostat, 2019)
	Internet purchase	Share of the population using the internet for ordering goods or services in 2018 (Eurostat, 2019)
Public Environ-ment for FinTech start-ups	*Innovation Hubs*	Dedicated point of contact for firms to raise enquiries with competent authorities on FinTech-related issues (European Supervisory Authorities, 2018)
	Sandbox	The number of regulatory sandboxes operational in a country (European Supervisory Authorities, 2018)
	Starting a business	Score awarded to a country for ease of starting a business; an indicator of procedures, time, cost and paid-in minimum capital to start a limited liability company asseset in 'Doing bussienss' report (World Bank, 2018)
Payment system		
	Card payments per capita	Number of card transactions per capita in a country in 2017 (European Central Bank, 2020)
	Credit transfer per capita	Number of credit transfer transactions per capita in a country in 2017 (European Central Bank, 2020)
	Direct debit per capita	Number of direct debits transactions per capita in a country in 2017 (European Central Bank, 2020)
	Cards issued per capita	Number of payment cards issued per capita in a country in 2017 (European Central Bank, 2020)
	Instant payments	Domestic instant payment system operating in a country [dummy variable 0–1] (Hartmann et al., 2019)

The second study used an interesting control group—US-based paytechs—and utilized a dealroom.co fintech database, focusing on investment amount, launch year, number of investment rounds, subindustry, number of employees, client type, services provided, along with macroeconomic data for EU countries and US states. The methodology employed was a difference-in-difference between the EU and the US before and after PSD2's announcement, and found positive impacts on fundraising for PSD2 licensed firms, and a positive effect on market entry.[23] A final difference in difference study worth noting is "Privacy regulation and fintech lending", which used this methodology to assess how this law's increase in consumer control over their data impacted loan applications, distribution of loans across firms, and interest rates on approved mortgages. They find positive impacts, in particular for fintechs, who previously had less access to consumers' financial data, noting an increase in loans originated by fintechs compared to banks, and a reduction in loan rates of 8 basis points on mortgages from fintechs, with stronger results

[22] https://www.sciencedirect.com/science/article/pii/S0167268120302328
[23] https://publications.jrc.ec.europa.eu/repository/handle/JRC141896

for “thin file” consumers with limited credit bureau data and census tracts with higher minority populations.[24] Where there are included and excluded segments, by policy or choice, authorities can take advantage of this to conduct similar difference-in-difference analysis.

Regression analysis of sub-segments of consumers and firms. There is a small but growing number of studies which have looked at how open banking and open finance impacts access and quality of credit products. In Germany, researchers partnered with a fintech which gives loan applicants the option to share bank account transaction details or not, which enabled them to compare choices and outcomes within the fintech’s borrower pool. They find that higher credit risk individuals are more likely to opt into data sharing than those with the highest credit score, and that loan approvals for similar applicants increase 11.7 percentage points and interest rates reduce by 2.2 percentage points when they share data, with benefits particularly accruing to lower credit score borrowers, all while observing lower loan default rates.[25] A similar collaboration between researchers and two fintech lenders in the US found that introduction of cash-flow data similar to what would likely be available in open finance improves access and loan terms for new borrower segments.[26] Finally, the study “Does Open Banking Expand Credit Access” in India utilizes data such as proximity to tower locations and use of India’s Unified Payments Interface to segment populations with different levels of access to open banking features, and to approximate differences in digital inclusion. These and several other variables are then evaluated against changes in credit volumes and payments transactions to determine how lenders and consumers benefit from the policy reforms, finding an increase in number of loans made overall, with particularly strong effects for fintech lenders.[27]

III. Thematic priorities for impact evaluation in open finance

1. Market innovation

The primary questions related to market innovation are how open finance is changing the composition of financial service providers and the products they offer. To date much of the analysis of market innovation has been measurement of firm entry and change in financial

[24] https://www.bis.org/publ/work1103.htm

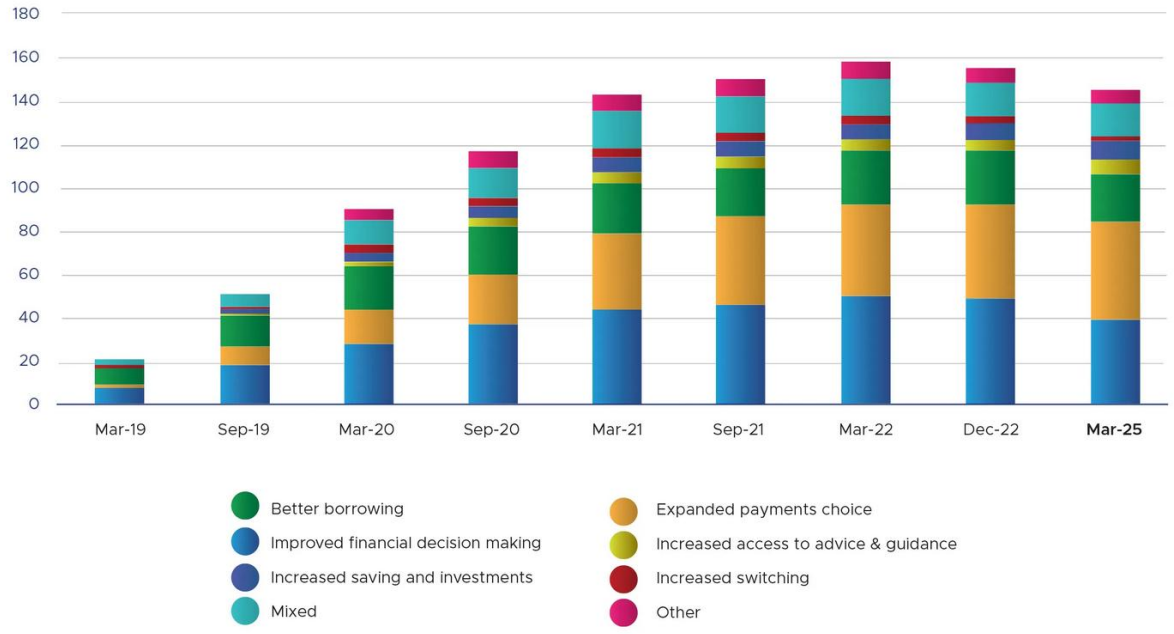
[25] https://www.ecb.europa.eu/press/conferences/ecbforum/shared/pdf/2023/EFCB_2023_Rachel_Nam_Paper.pdf

[26] https://finreglab.org/wp-content/uploads/2025/06/FinRegLab_06-03-2025_Sharpening-the-Focus.pdf

[27] https://thedocs.worldbank.org/en/doc/224ef95415948656163953f97acbeffe-0050062024/original/Open-Banking-Latest-PPT.pdf

performance (especially for fintechs), or the change in number and volume of products and transactions. Authorities can consider setting several points in time, such as the adoption of the open finance regulations, the issuance of the subsequent standards, and the piloting and go-live of the open finance and different use cases within open finance, and measure before and after these various points to see how market innovation is impacted by open finance. This could at a minimum be descriptive analysis, and possibly include some difference in difference analysis, although this would require identifying comparable firms or product types that are excluded from the open finance. It may also be worth having firms report out their products and use cases developed, so that different product segments can be compared, including similar products that are within and without the regime's coverage. An example of how providers can segment their product types is shown below from the UK's Open Banking Limited, which documents where third-party providers are focusing their product innovations.

Figure 11: Number and Type of Live to Market TPP Propositions



2. Quality and availability of open finance information and transactions

Quality in the context of open finance begins with quality of data. Beyond the KPIs of API uptime and availability, authorities can develop monitoring tools to track and assess the accuracy and completeness of the information shared. Both Australia and the European Union have conducted data quality assessments of the consumer and product information shared in their open banking/open finance ecosystems, finding inconsistencies with the

completeness and accuracy of data exchanged in open finance.[28] Australia has developed both automated monitoring tools and also performs periodic manual checks to assess accuracy of information posted on products on offer. Complaints on data accuracy or completeness from firms is another way that data quality can be monitored. However, this may miss where a consumer's financial history is incomplete, which is something only the consumer themselves may notice. This may call for mystery shopping and other activities that have consumers request data exchanges and check them against their account statements.

Monitoring and improving data quality matters for open finance impact. In fact, "The Statutory Review of the Consumer Data Right" in Australia found that data quality issues were a key limiting factor to adoption of the CDR.[29] The EU similarly found data quality issues were a challenge for PSD2's impact, and proposed three ways they could improve data quality in the market: 1. Create opportunities for reporting data quality problems; 2. Make licensing conditional upon compliance with the standards; 3. Include data standardsd and quality provisions in contracts.[30]

For impact evaluation purposes, there are two opportunities related to quality and availability of data: 1. Analysis of the relationship between data quality of participating entities and their consumers' access to new products and providers; 2. The impact of data quality checks, enforcement actions, and policies on the overall quality and completeness of data as the open finance ecosystem matures.

3. Consumer use and benefit

Measuring consumer uptake of open finance is common practice across open finance markets, including through metrics such as number of accounts connected, number of consents given, and new products acquired. Two additional sources of data that should be included are consumer surveys on how and why they are using open finance solutions, and firm surveys on use cases and the impact of open finance on their product offerings. Consumer survey data can be used to unpack the role of issues such as trust on open finance adoption. The Bank of England, for example, used global survey questions on consumer trust in sharing data with fintechs to identify a correlation with higher trust and greater investment in fintechs post open banking implementation.[31] For provider use cases,

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[28] Australia: https://www.accc.gov.au/system/files/Data-Quality-in-the-Consumer-Data-Right-Findings-from-Stakeholder-Consultation.pdf; EU: https://academic.oup.com/ijlit/article/doi/10.1093/ijlit/eaae015/7742982?login=false

[29] https://treasury.gov.au/review/statutory-review-consumer-data-right

[30] https://academic.oup.com/ijlit/article/doi/10.1093/ijlit/eaae015/7742982?login=false

[31] https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2024/customer-data-access-and-fintech-entry-early-evidence-from-open-banking.pdf

in Brazil individual providers have submitted impressive impact evidence, such as Banco do Brasil reporting expanding credit portability by $1B, and a $700M cumulative credit limit increase, or NuBank saving customers R$6.4M in interest in their first ten months of using data within open finance, and a reduction in account opening time from 32 to 2 hours.[32] These are the kinds of individual impact examples that use case surveys can provide, and should be part of Chile's analysis.

With these descriptive data sources on consumer use and benefit in place, authorities can then conduct more complex impact evaluation analysis along the lines of the several impact evaluations of lending products described in the prior section. Cost and access to credit, as well as default rates, should be a priority in early impact evaluation research projects, as well as the impact of open finance on the types of payments used for different transactions, and any reduction in costs for payment transactions. Both of these types of analysis will likely require transaction-level data that can only come from financial institutions, and authorities may want to reach out to industry before launch to gauge interest in participating in such analysis.

4. Market conduct and consumer risks

There are two market conduct and consumer risk topics that should be part of the first phase of an open finance MLE Strategy: Fraud, and debt stress.

For fraud risks, authorities can work with industry to develop a shared fraud incident database and produce periodic reports and analysis of fraud trends, as is being done in open banking in the UK. Out of this database, tools like predictive modeling software can be used to identify any characteristics that are correlated with fraud activity on open finance-linked accounts, to then implement targeted fraud prevention solutions. These solutions can be subject to randomized impact evaluation analysis, to determine the most effective fraud protection solutions and scale them.[33] The UK has developed several leading fraud types and related incident reporting templates (see figure below for an example of one of their reporting templates for app-based fraud).

[32] https://www.scribd.com/document/894719377/Fgv-implementation-and-Challenges-of-Open-Finance-in-Brazil

[33] For an example of how fraud prevention solutions in digital finance can be tested through randomized impact evaluations before scaling, see: https://poverty-action.org/how-interactive-storytelling-protecting-ugandans-mobile-money-fraud

APP FRAUD

Half-year values PISP initiated fraudulent payments	Volume Consumer		Volume Business		Value (£) Consumer	Value (£) Business
APP scams - by scam type	Total cases	No. of payments	Total cases	No. of payments	Gross loss	Gross loss
Invoice and mandate						
CEO fraud						
Impersonation: police/bank staff						
Impersonation: Other						
Purchase						
Investment						
Romance						
Advance fee						
Unknown scam type						
Total						
Single Immediate Payments						
Variable Recurring Payments						
Total						
Browser						
App						
Total						
Share of open banking fraud (volume)						
Share of open banking fraud (value)						

Source: Open Banking Limited. 2023. "Framework for data collection on financial crime."

For debt stress, consumer surveys and loan portfolio data can be used to construct market-level indicators on any risks related to increased credit access. National financial access surveys have integrated simple but robust financial health metrics, which have been used to identify and explore emerging credit risks,[34] and can be included in open finance consumer surveys. Combining survey responses with data on risk signs of different types of credit portfolios within or outside open finance could form an open finance debt stress benchmark that can be monitored over time, and can also be used for correlational analysis or possibly some difference-in-difference analysis. Studies from the US, Germany, and the UK show how transaction-level data could be used for regression analysis to measure if any product types or consumer types are disproportionately associated with debt stress. This analysis could likely be conducted alongside the transaction-level analysis of consumer benefits from credit products.

5. Costs and pricing of open finance implementation

Authorities should develop a cost and price monitoring strategy that tracks the charges and costs for connections and infrastructure development, and then consider these costs against the benefits open finance provides. In some markets industry has pushed back on costs when they do not perceive commensurate benefits, and comparing the costs against

[34] See for example the work in Kenya to measure the rising harms of digital consumer credit through the FinAccess survey: https://www.fsdkenya.org/wp-content/uploads/2022/11/The-state-of-financial-health-in-Kenya-Trends-drivers-and-implications-evidence-from-FinAccess.pdf

these benefits (covered in themes 1 and 3 above) will provide a way to move from self-interested arguments to a more empirical assessment of what charges to permit for participants to achieve a fair, if only partial, cost recovery and to sustain shared infrastructure costs of open finance. For more experimental analysis on pricing, authorities can also look at how firms change their product offerings, steer consumer transactions to different channels within or outside open banking, or increase or decrease transaction fees to consumers (i.e. do we see pass-through pricing for wholesale costs?) The literature is far less developed on this theme than others, but pricing is a key issue for the long-term sustainability of open finance, and should be a forward-looking research priority.