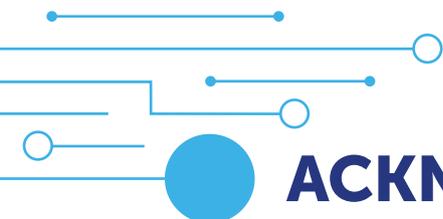




Unlocking Public and Private
Finance for the Poor

POLICYMAKER SUMMARY:

A MODEL FOR THE SYSTEMATIC
CAPTURE, MANAGEMENT AND
ANALYSIS OF REMITTANCES DATA
BY CENTRAL BANKS

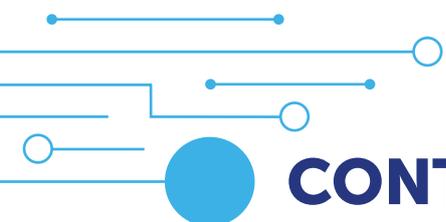


ACKNOWLEDGEMENTS

Especially on behalf of the migrant women and men customers originating and receiving remittances, and their wider communities in least developed countries, the United Nations Capital Development Fund (UNCDF) Migrant Money programme team would like to thank the many partners and collaborators who are contributing to our efforts in the development of practical tools and guides to improve the collection, monitoring and analysis of remittance flows, which is critical for making informed remittance-related policy decisions. This appreciation is extended to the contributors and reviewers of the Remittances Reporting and Analysis toolkit, including the Central Bank of Brazil (BCB), the Central Bank of Colombia (BRC), the Central Bank of Mexico, Bank Indonesia (BI), the Central Bank of Philippines (BSP), the Bank of Thailand (BOT), the State Bank of Pakistan (SBP), the Central Bank of Kosovo (BQK), the Central Bank of Iceland, the Central Bank of Jordan, the South African Reserve Bank (SARB), the Reserve Bank of India (RBI), the Bank of Namibia (BoN), the Australian Transaction Report and Analysis Centre (Austrac) and the Central Bank of Spain (BE).

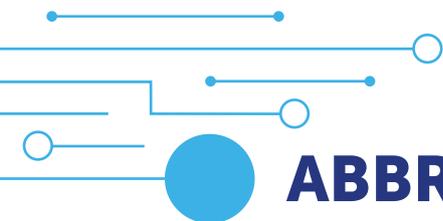
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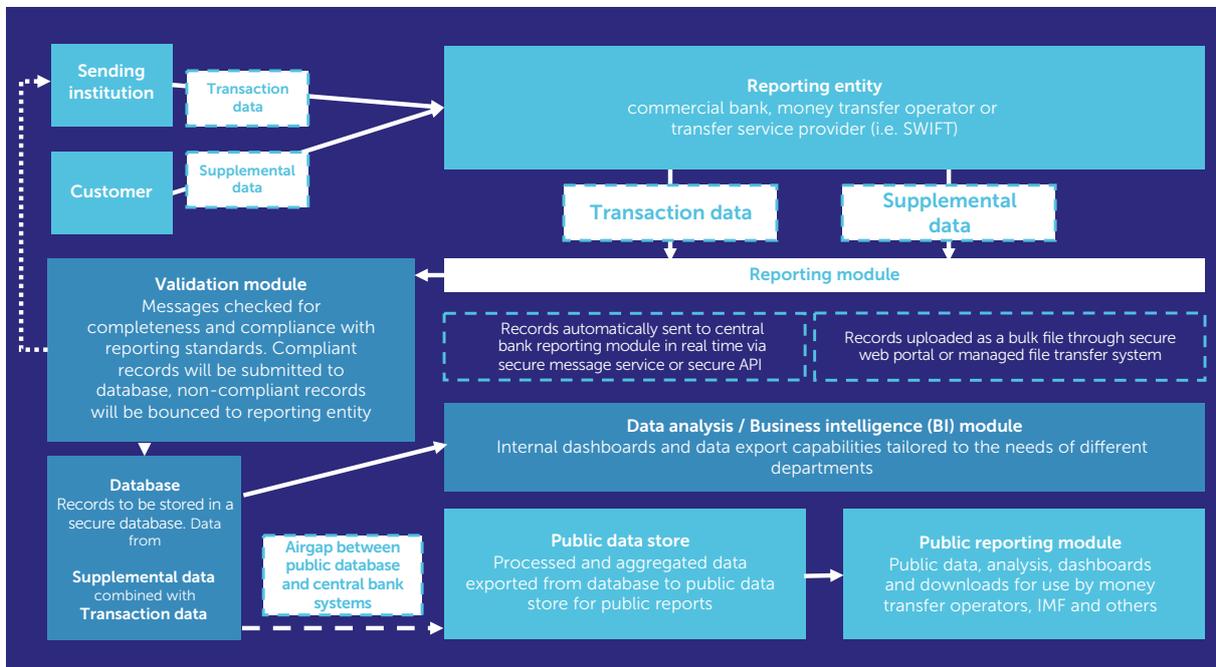
ABBREVIATIONS

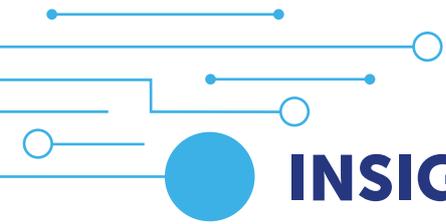
AML	anti-money laundering
BI	business intelligence
BOP	balance of payments
CFT	countering the financing of terrorism
IIP	international investment position
ITRS	International Transaction Reporting System
LDC	least developed country
MTO	money transfer operator

INTRODUCTION

This paper is a summary of the more technical paper 'A model for the systematic capture, management and analysis of remittance data by central banks'. It is aimed at policymakers within central banks who wish to gain a better understanding of their remittances landscape. The paper aims to provide a high level introduction to the proposed model and its importance for any central bank wishing to develop data driven policy around remittances or who are looking to support service providers to develop and deploy appropriate, formal remittance services.

HIGH LEVEL SYSTEM MODEL: FOR THE SYSTEMATIC CAPTURE, MANAGEMENT AND ANALYSIS OF REMITTANCE DATA BY CENTRAL BANKS





INSIGHT GENERATION, DATA GRANULARITY AND THE ROLE OF THE REGULATOR

The increasing speed and complexity of economic change has necessitated a fundamental transformation in the way that financial regulators collect, analyse and use data. Central banks are not only becoming more data driven themselves but are increasingly relied on by policymakers and the private sector to collect and process data to support the formulation of macro and micro economic policy as well as inform investment decisions and product design. This has come at a time when more data being is being generated than ever before and the world is rushing to exploit this untapped value.

In order for central banks and financial regulators to fully exploit the value contained in this data they will have to make a fundamental shift away from traditional aggregated data reporting to transaction level data reporting. This shift will give regulators access to raw transactional data, subject to redactions of personally identifiable information, that will allow them to generate the insights necessary to regulate these complex and fast changing markets.

“By asking for aggregate data, which is pre-organized and aggregated by the reporting agents or by the national central banks, we miss lots of valuable information. After all, it is not only the average that matters, but also the underlying distribution. And in order to analyze the distribution we need the “basic” (granular) data.”¹

This paper provides a model for a system that will allow transaction level data on remittances to be collected and analysed, whilst also decreasing the compliance burden on reporting entities and increasing data quality.

A more detailed discussion of these issues and the potential use cases for transaction level data can be found in the series paper [‘The case for the collection and analysis of transaction-level, supply-side data on remittances’](#).

¹ Speech by Sabine Lautenschläger, Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the Single Supervisory Mechanism, at the Eighth ECB Statistics Conference, Frankfurt am Main, 5 July 2016

The current situation: Aggregated data reporting

Many central banks require data to be aggregated by the reporting institutions before they are transmitted. Aggregated reporting is where data is aggregated by one or more metrics, like the example below.

Month	Value of inbound cross-border transactions			
	Females	Males	SWIFT	MTOs
January 2021	1,800,000	2,100,000	7,500,000	2,400,000
February 2021	1,600,000	2,200,000	3,100,000	700,000

This process not only strips the data of many valuable insights but also requires significant effort on the part of service providers to prepare and format the data and provides a point where errors can be introduced into the datasets.

Moving “beyond the aggregates”: Transaction level data reporting

Transaction level data can be thought of as a situation in which every transfer has its own individual record in a database, the equivalent of a single row in an excel document. This record contains all the relevant data concerning that transaction.

Date	Transaction value – sending currency	Transaction currency	Country of origin	Receiving institution type	Receiving institution name	BOP code	Sex of recipient
01/01/2021	10,000	USD	USA	Bank	Bank 23	xxxxxxx	Female
01/01/2021	980	EUR	FR	Money transfer operator	Bank 42	xxxxxxx	Male

A detailed exploration of the value of transaction level reporting to drive smart policy and product design can be found in the accompanying paper ‘The case for the collection and analysis of transaction-level, supply-side data on remittances’.

Transactional and supplemental data

Understanding remittance markets requires more than understanding the data on the volumes and values flowing into and out of the country, which we refer to as transactional data. Remittances are conducted by individuals and understanding the patterns and motivations behind remitting behaviors is key to generating appropriate and supportive policy.

For example, remittances and behaviour around the sending and receiving of money internationally are highly gendered. As well as the different total values sent and received by different genders there are often significant differences in the source of received funds, preferred channels and transfer methods, intended usage and frequency. Without understanding the gendered dynamics around access and usage to formal services it would not, for example, be possible to develop optimal regulations or insights for the private sector designed to increase the use of formal services. Data on these attributes, which are not captured as part of the transactional data are referred to as supplemental data.

Whilst surveys can be an important tool for capturing some of these insights, sex disaggregated supply side data is far more comprehensive, cost effective and sustainable. A case study examining the potential value of sex disaggregated data can be found in the accompanying paper 'The case for the collection and analysis of transaction-level, supply-side data on remittances'.

South Africa offers an interesting model for the capture of this information. The South Africa Reserve Bank (SARB) requires all recipients of cross border remittances to complete a 'Reporting Mandate' form. This form captures data on sex, location and reason for transfer and this data is submitted along with the transaction data on the value, currency and channel used for the transfer.

An exploration of uses and use cases for this data can be found in the accompanying paper 'The case for the collection and analysis of transaction-level, supply-side data on remittances'. A full set of suggested transactional and supplemental data reporting requirements are detailed in the accompanying technical version of this paper.

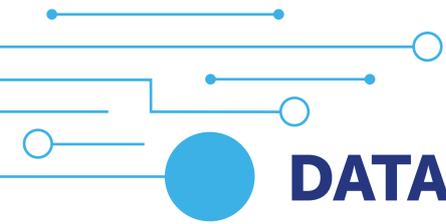
ADVANTAGES OF TRANSACTION LEVEL DATA AND SYSTEM TO SYSTEM DATA TRANSFER

- Allows regulators to drill into data in a way which provides insights into the drivers of remittances
- Removes the potential for human error from data entry, transcription or analysis
- Removes the potential for manipulation by reporting entities
- Allows reclassification of categories i.e. BOP categories over time and allows historical records to be reclassified
- Provides regulator with access to almost real time, highly disaggregated data allowing a wealth of new insights to be generated
- Reduces aspects of the reporting burden from reporting institutions

Transaction limits

Many countries which use transaction level reporting, set a value ceiling for transfers, below which data does not have to be reported at the transaction level but can be aggregated and reported as a single figure. This lumping together of low value transfers makes it impossible to know where they are coming from, where they are being received, who is receiving them and all the information vital to drive better policy and develop more suitable products.

Any system, which aims to capture, manage and analyse data on remittances should not set a lower ceiling on the value of transfers it captures at transaction level data to ensure that low value remittances can be analysed effectively. A more detailed discussion of the issue of transaction limits can be found in the accompanying paper 'The case for the collection and analysis of transaction-level, supply-side data on remittances'.

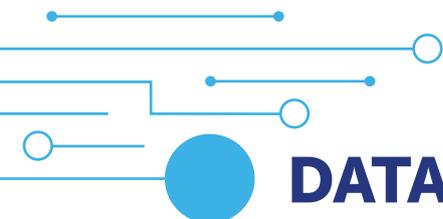


DATA GENERATION AND TRANSMISSION

Transaction level reporting is likely to increase the volume and frequency of the data moving between service providers and regulators would significantly increase the burden on reporting entities if data were compiled and transmitted by human intervention. This is why transaction level reporting must be combined, as far as possible, with the implementation of system generated data and system to system data transfer.

System generated data requires moving from submissions that are prepared by humans to submissions that are prepared automatically by a system. This is actually significantly easier with transaction level reporting as the data is sent 'raw, and does not need processing in the same way aggregated data does.

System to system data transfer involves systems automatically transferring data between themselves based on a given set of rules such as transmitting data once an hour or once a day or once a certain number of records has been generated. This ensures timely submission of data and allows the regulator's system to process the data in manageable chunks.

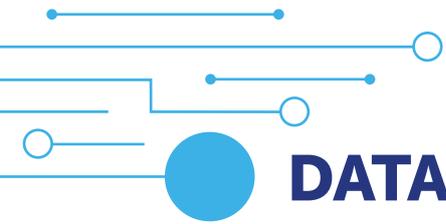


DATA VALIDATION

Data validation is a hugely important part of any data driven system. A validation and quality control system performs three essential services:

- ensure **completeness**. Records which are received with empty or null values in required fields should be rejected and returned to the reporting institution for completion
- ensure data is **properly formatted**
- apply a set of rules to all records to ensure that they **conform to expected limits**

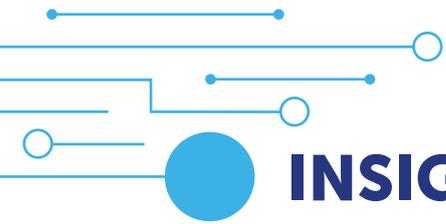
Ensuring data quality often consumes a disproportionate amount of time and energy in data collection processes without an automated validation module. The time saved by the proper implementation of an automated system can be deployed in investigating and understanding genuine outliers in the data and their implications for policy and service delivery.



DATA STORAGE AND APPLICATION HOSTING

The three broad options for data storage and application hosting are on-site servers, cloud storage and hybrid models, which make use of both onsite and cloud infrastructure.

- **On-site server** – involves the purchase, setting up and management of physical servers which are then located within the regulator’s premises
- **Cloud storage and hosting** – a service orientated model where data is stored on servers owned and operated by a third party and the space is provided to the client under a service agreement
- **Hybrid model** – it is possible to combine these options to provide the cost effectiveness and convenience of cloud hosting whilst also allowing sensitive data to be stored locally in accordance with local regulations



INSIGHT GENERATION AND COMMUNICATION

A system can contain the most complete, highest quality, most timely data available but if there is no way to generate and effectively communicate insights then 99% of the system's value will be lost. Comprehensive data analysis is often the most under exploited function of data driven systems within financial regulators and in some cases is missing altogether. Collectively, the function of the previous modules is to capture and manage high-quality, timely, complete data and whilst these functions are critical, they should be thought of as the primary building blocks of value and not having an end value in themselves.

Reaching the goal of data driven decision making can be supported significantly by the implementation of a data analysis or business intelligence system, which offer the following benefits:

VISUAL

Numbers rarely make a difference without a narrative.

Data analysis and BI tools allow users to build narratives from data by allowing them to visualise trends, spot outliers and understand context.

ACCESSIBLE

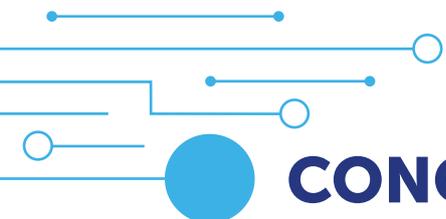
Data analysis and business intelligence tools lower barriers to in depth analysis and remove gatekeepers allowing insights to be generated and shared across departments supporting a more holistic view of the market and economy.

FLEXIBLE

Effective analysis should generate more questions and data analysis and BI tools are flexible and responsive enough to allow new aspects of the data to be explored

INTERACTIVE

Allowing users to interact with the data to apply filters, change the level of detail or change how the data is presented i.e. a chart or a map



CONCLUSIONS

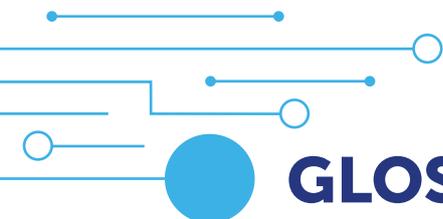
The COVID-19 pandemic has highlighted the importance of improving existing systems and implement transaction level reporting systems for cross border transfers, which support data driven policy around remittances and promote the development and deployment of appropriate and accessible formal remittance products.

A modular design allows regulators to explore new and emergent technology trends to increase the efficiency and effectiveness of existing systems. The model can also be used to build a stand-alone remittance reporting system which captures, manages and analyses data only on remittances and does not capture the full range of BOP data usually present in an ITRS.

With recent technological improvements, it is possible to introduce more effective and efficient methods for transferring data. This allows the **transaction level reporting** to be combined, as far as possible, with the implementation of **system generated data** and **system to system data transfer**.

By using **data validation techniques** and **appropriate data storage options**, central banks can reduce the burden of manually generating, validating, reformatting and editing data for both themselves and reporting entities. This enables the reporting of **disaggregated data that are necessary for data analysis** to produce actional insights for policymakers and to support the development of appropriate remittance products.

Detailed disaggregated data on remittances would facilitate the estimation of the potentially missing data on remittances received/sent through informal channels. By better understanding the data through more detailed information (on sex, location, purpose of transaction, etc.), users and compilers of the data on remittances would be able to develop more targeted surveys and estimation techniques for compiling and analyzing the data on remittances.



GLOSSARY

Aggregated data – is where volumes and values of transactions are aggregated by one or more attributes. For example, if the value of remittances is reported summarized by the country of origin or by the channel (i.e. bank or money transfer operator). This would provide a central bank the ability to analyze the data either by country or by channel but not both.

Highly disaggregated data – refers to data, which is aggregated using multiple, not singular attributes. For example, if remittance values and volumes were reported summarized by all of the following: country of origin, channel, currency, sex and location of residence of the sender or recipient. This would, for example, enable a central bank to see how many women, in a certain region, received what total value of remittances from the United States, through a transfer via a commercial bank.

Transaction level data – can be thought of as every transfer having its own individual record or entry in a database, the equivalent of a single row in an excel document.

Transaction data – can be defined as data which could be expected to be present within the transfer instruction. This would include country of origin and destination, entity type i.e. bank or MTO, currency of transfer, value of transfer.

Supplemental data – can be defined as any data required by a country to support analysis of remittances that could not reasonably be expected to be contained within the transfer instruction. This could include the sex of the recipient, the sender or recipient's location of residency, the location of the branch or service point used to send or receive money.

Reporting institutions – are financial service providers, required to report data on cross-border transactions to the central bank or other financial regulator.



LEAVING NO ONE BEHIND IN THE DIGITAL ERA

The UNCDF Strategy 'Leaving no one behind in the digital era' is based on over a decade of experience in digital finance in Africa, Asia, and the Pacific. UNCDF recognizes that reaching the full potential of digital financial inclusion in support of the Sustainable Development Goals (SDGs) aligns with the vision of promoting digital economies that leave no one behind. The vision of UNCDF is to empower millions of people by 2024 to use services daily that leverage innovation and technology and contribute to the SDGs. UNCDF will apply a market development approach and continuously seek to address underlying market dysfunctions

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UNCDF makes public and private finance work for the poor in the world's 46 least developed countries (LDCs).

UNCDF offers "last mile" finance models that unlock public and private resources, especially at the domestic level, to reduce poverty and support local economic development.

UNCDF's financing models work through three channels: (i) inclusive digital economies, which connects individuals, households, and small businesses with financial eco-systems that catalyse participation in the local economy, and provide tools to climb out of poverty and manage financial lives; (ii) local development finance, which capacitates localities through fiscal decentralization, innovative municipal finance, and structured project finance to drive local economic expansion and sustainable development; and (iii) investment finance, which provides catalytic financial structuring, de-risking, and capital deployment to drive SDG impact and domestic resource mobilization.

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