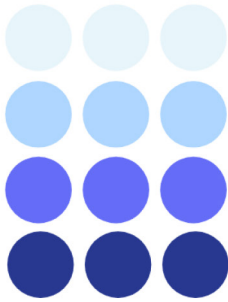




*IADI Fintech Briefs provide high-level overviews and key takeaways on Fintech topics of relevance to deposit insurers.*



**NO. 2**

# FINTECH BRIEF

DATA STANDARDISATION

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## DATA STANDARDISATION

### EXECUTIVE SUMMARY – WHY DATA STANDARDS MATTERS

This Brief provides a high-level overview of data standardisation and identifies how data standards could affect deposit insurers, depository institutions, and depositors. The Brief focuses on data typically collected, shared, and reported by deposit insurers, but also refers to consumer data and other data used by depository institutions. It concludes with questions for deposit insurers to consider.

During the global financial crisis of 2007-2008, a lack of reliable data helped fuel contagion and destabilise financial systems. The rise of financial technology and big data, as well as advances in artificial intelligence and machine learning, point to a future where decision-making and outcomes are driven more by data. As jurisdictions continue to confront the COVID-19 pandemic, responses by deposit insurers, depository institutions, and depositors will hinge on available data—data that may be more accessible and of higher quality through data standardisation.

Robust data standards align with several of IADI's [Core Principles](#) by potentially providing the building blocks for:

- Increased transparency and public trust in deposit insurance (Principle 3: Governance);
- Greater data sharing and coordination among regulatory and reporting agencies, including those in other jurisdictions (Principle 4: Relationships with Other Safety-Net Participants and Principle 5: Cross-Border Issues);
- Enhanced risk assessment (Principle 13: Early Detection and Timely Intervention);
- Greater financial stability through reduced cost and time for failure resolution and prompt insurance determinations and reimbursement of depositors' insured funds (Principle 14: Failure Resolution and Principle 15: Reimbursing Depositors).

## 1 What is data standardisation?

Data standardisation generally refers to the process of transforming raw (unaltered) data from different contexts and sources using common, agreed-upon definitions, processes, and formats. The goal of standardisation is typically to ensure data are consistent and comparable across entities and over time.

## 2 Background

### 2.1 Key terms and concepts

This section briefly describes key terms and concepts associated with a few examples of data standardisation initiatives. Given the broad range of current and potential efforts, it is not intended to be an exhaustive overview. Additional information can be found in the resources section at the end of the Brief.

#### 2.1.1 Unique Identifier

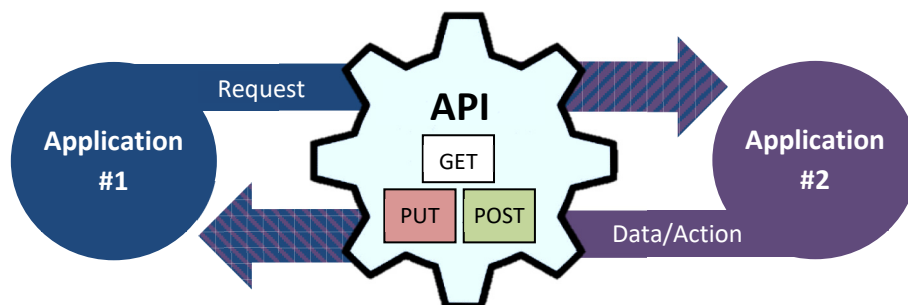
A **unique identifier** (UID) is any identifier (in data systems, often a sequence of alphanumeric characters) associated with a single entity within a system and for a specific purpose.

Many UIDs are unique only to their data system, limiting usage across institutions and even across platforms within the institution. Such identifiers cannot act as a bridge between systems because they would not be unique to the combined data.

In contrast, a **universal UID** can uniquely identify all entities within a population for all purposes. A universal UID, for example, could identify individual depositors across multiple institutions or account types—the latter of which would assist in determining insurance coverage.

### 2.1.2 Application Programming Interface (API)

**Application programming interfaces (APIs)** are defined sets of functions and procedures that specify how computers and their software should interact, or talk to each other. For example, APIs can define the data or action that can be requested, how to make those requests, and how data should be formatted.



APIs provide the building blocks for computers to talk to one another, which enable access to data that a programmer can use for another application or intended purpose.

APIs can be classified into private APIs (usable by internal systems); partner APIs (usable by those with specific rights or licenses); and open APIs (usable by the public). For deposit insurers, private and partner APIs could be used to share supervisory data for purposes of risk-based pricing or to share data on the assets of failed institutions with potential acquirers. Public APIs, such as the FDIC’s [BankFind Suite](#), allow deposit insurers to share information with businesses, developers, researchers, and depositors.

## 2.2 Examples of data standardisation initiatives

Deposit insurers have been involved in several recent data standardisation initiatives. For example, in 2016, the FDIC (US) implemented a rulemaking that, among other things, required certain large depository institutions to configure their information technology systems to provide deposit account data using standard definitions and formats. The agency noted in the rule that it would “improve the FDIC’s ability to fulfil its statutory mandates to pay deposit insurance as soon as possible after a covered institution’s failure and to resolve a covered institution at the least cost to the Deposit Insurance Fund” (Federal Register (2016)). Unique depositor IDs and other standardised data elements and formats are also key components of the Data Systems Requirements by-law implemented by the CDIC (CDIC (2019)).

Financial sector authorities have also utilised standardised data in ongoing reporting, which deposit insurers could adopt or benefit from in the future. In the Philippines, for example, the central bank piloted an API-based prudential reporting system in 2018 for banks to transmit near real-time data (Regtech for Regulations Accelerator (2018)). In Austria, banks transmit highly granular data to a third party (AuRep) that converts the data, using standardised transformation rules, into reports for the Austrian central bank (OeNB). In this way, AuRep performs functions similar to an API, by acting as a bridge between banks’ data systems and the OeNB and allowing the central bank to obtain reports without exposing the underlying data (Dias and Staschen ((2017)).

Examples of universal initiatives include the [Global Legal Entity Identifier Foundation \(GLEIF\)](#), established by the [Financial Stability Board](#), which promotes the use of a standard UID (a global legal entity identifier or LEI) for parties to financial transactions. Groups, such as [Afinis](#) and the [Financial Data Exchange](#), have also sought to replace the myriad of individual institution APIs with a uniform open API standard.

## 3 Impact on deposit insurers

### 3.1 Potential benefits to deposit insurers

In general, standardisation can improve the quality of data used by deposit insurers by reducing errors associated with human entry (accuracy), allowing for greater linkage of data sets (completeness), and, as described above in the Philippines, enabling near real-time reporting (timeliness). Higher quality data is a precondition for more accurate risk-based pricing, faster deposit insurance determinations, and, for deposit insurers that collect data, a reduction in staff time devoted to cleaning, interpreting, and validating data.

More specifically, data standardisation can assist deposit insurers in monitoring the financial system, pricing for insurance risks, and, when applicable, supervising and resolving failed institutions in several ways:

#### ***Streamlined resolution planning and execution.***

Standardisation has the potential to reduce or eliminate the costly and time-intensive conversion of a failed institution's data to make it compatible with a deposit insurer's systems. This could reduce the staff time required to verify ownership of accounts, for example, thus speeding the payout process. UIDs, for example, could be used to more easily identify individual depositors across deposit types to make insurance determinations.

***Enhanced coordination.*** Data that is collected using standardised, agreed-upon definitions and formats can facilitate data sharing among reporting agencies by reducing instances where data must be adjusted or recalculated based on individual needs. Coordination during the standards setting process may also encourage greater use of standardised reporting, which allows common data elements to be collected once and then shared among reporting agencies. The [Call Report](#) is one example of a standardised tool that coordinates data collection across the multiple regulatory entities that make up the [Federal Financial Institutions Examination Council](#), including the FDIC. Standardised data may also enable greater coordination and data sharing with nongovernmental entities, which could spur internal and external research and analysis that improves the policymaking process.

***Increased transparency and public trust.*** By providing greater access to data (subject to applicable data protection and privacy laws) that are standardised and more easily read and interpreted, deposit insurers become more transparent. Increased transparency may facilitate internal and external research and more accurate media coverage, which can raise public awareness and trust in the deposit insurance system.

Deposit insurers with resolution authority also may benefit from:

***Increased value of receiverships.*** Standardised data may enable potential acquirers of failed institutions to conduct more effective due diligence, which could increase the market value of assets in receivership. Acquirers may also place a greater value on institutions with higher quality data that are compatible with their systems. In contrast, a failed institution with poorer quality data may receive a lower bid price, or no bids at all, increasing losses to the deposit insurer. Moreover, deposit insurers in certain jurisdictions may be responsible for correcting errors in data on consumers collected and maintained by an institution in receivership, increasing costs.

### 3.2 Challenges and potential risks to deposit insurers

Data standardisation poses several challenges and potential risks for deposit insurers:

***Third-party risk.*** Depository institutions may be more willing to share data with third parties (such as IT service providers) to the extent that standardisation reduces barriers to data sharing and increases the ability of third parties to aggregate and analyse data. Deposit insurers may need to consider pricing for increases in risk associated with third parties handling and storing data, including operational and reputational risks associated with data breaches and service outages. Data privacy and protection considerations will be higher in cases like Austria's AuRep where a large amount of data is consolidated with one entity.

**Data quality** refers to the state or condition of data based on factors such as its accuracy, completeness, and timeliness, among others. While standardisation can improve the quality of data, it does not ensure high quality, nor is it possible in all cases. For example, standardised data that is incomplete, or out of date, would not be considered high quality data.

**Higher correlation and concentration of risks.** The benefits of standardisation may lead consumers and institutions to gravitate toward products and services where standardised data are available or more easily obtained. This may result in a more homogenised banking system where risks are more highly correlated, increasing risk for deposit insurers and the financial system as a whole. Standardisation may also increase the risk of concentration in the banking industry if its associated benefits largely accrue to institutions with privileged access to data.

**Enforcement.** Deposit insurers that require the adoption of data standards may face resistance from regulated entities over the cost and burden of implementation. Required standards may also be slower to update if changes require time for public notice and comment. On the other hand, depository institutions and other reporting entities may be slower to adopt voluntary standards. For example, while GLEIF has issued LEIs to roughly 1.9 million entities in over 200 countries and territories as of May 2021 (GLEIF (2021)), regulators' reliance on voluntary implementation has prevented the UID from achieving fuller adoption.

## 4 Impact on depository institutions and depositors

### 4.1 Potential benefits to depository institutions

Depository institutions rely on data for key functions such as customer onboarding, core systems processing, payments, underwriting, compliance and reporting, and fraud detection. Through these functions, data standardisation offers several potential benefits to depository institutions:

**Lower costs of data sharing and reporting.** Standardisation can lower the cost of sharing data across internal platforms by eliminating the need for redundant data conversion or collection processes. Standardised data also may reduce ongoing reporting costs by enabling greater automation—for example, through APIs—in place of costly manual data entry into templates and by facilitating information sharing among reporting authorities in place of separate reporting. Further, a standardised data reporting system, such as that used by Austria's central bank, can reduce the costs of changes to regulatory reports by requiring updates to one entity's system (AuRep) rather than for all reporting institutions.

**Higher quality data.** Similar to deposit insurers, standardisation can benefit depository institutions by potentially improving the accuracy, completeness, and timeliness of its data, including customer data. Armed with higher quality data, depository institutions can operate in a more safe-and-sound manner by better assessing different types of risk, detecting fraud, and meeting compliance obligations.

### 4.2 Potential benefits to depositors

Depositors rely on data to achieve financial awareness and well-being, compare financial products and services, obtain credit, and make payments. Standardised data can benefit depositors and consumers, generally, in several ways:

**Uninterrupted access to funds.** In the event of a bank failure, data standardisation can hasten depositor access to insured funds through faster insurance determinations, as discussed above. On an ongoing basis, standardised data also increases the likelihood that depositors maintain quick and uninterrupted access to their funds by eliminating the need for depository institutions to convert data for use across internal systems, which can slow response time and cause errors that result in service outages.

**Data protection.** UIDs protect depositors by substituting sensitive personal information with an identifier that has no extrinsic or exploitable meaning or value. Universal UIDs extend this protection when depositor data are shared between

**Screen scraping** is the process of collecting text that appears on a website for purposes of another application. For many financial service applications, it requires consumers to share login credentials with a third party, often without the awareness of the entity that issued the credential.

internal and external systems, including those of deposit insurers. Increased use of standardised consumer data may also increase the use of APIs by lowering the cost of developing and maintaining these programs. APIs can provide greater protection of consumer data compared to other data collections methods, such as screen scraping.

**Greater competition and differentiation.** Data standards, when combined with greater access, can foster competition by lowering the barriers of entry for new market participants, and can lower the costs of providing financial products that are more tailored to the specific needs of bank customers.

### 4.3 Challenges and potential risks to depository institutions and depositors

Data standardisation poses several challenges and potential risks for depository institutions and depositors:

**Upfront cost.** Stakeholders, including depository institutions, may resist investing in the upfront costs of developing, testing, and marketing standards with the expectation that they would ultimately benefit from others' efforts. Given the complexity of financial transactions and the volume of data collected, the costs of systems and data conversions necessary to implement data standards may also be prohibitive. This may be especially true for smaller institutions and institutions with large, interconnected legacy systems. Depositors may face higher service fees associated with these costs, particularly if implementation of data standards is required.

**Competing standards.** Multiple sets of standards may be inevitable, and potentially preferable, given differences in institutions and jurisdictions. In the absence of coordination, however, these standards may compete with each other or be incompatible (not interoperable).

Examples of other challenges and potential risks include ensuring depositor protection in the case of increased third party data sharing agreements, limited staff and systems resources, and reluctant participation from gatekeepers.

## 5 Next Steps

Future research and briefs on data standardisation may address questions such as:

- How can/have banks and regulators use APIs to report and share data?
- How does access to and quality of bank affect estimated and actual costs to deposit insurers of failures?
- Have “open banking” and other data initiatives influenced depositor behaviour?
- How can deposit insurers encourage the participation of all insured entities in data standardisation efforts, including access to its benefits, while recognising the costs and potential regulatory burden associated with implementation?
- What have deposit insurers learned from their participation in various standardisation initiatives thus far? How has their experience differed between mandatory and voluntary standards and initiatives that have included significant industry involvement?

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