Legal Entity Identifier: What Else Do You Need to Know?

Linda F. Powell, Mark Montoya, and Elena Shuvalov

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Linda Powell, Chief, Economic Data Management and Analysis Section, Division of Research and Statistics, Board of Governors of the Federal Reserve System

Mark Montoya, Chief, Data Strategy Section, Division of Insurance and Research, Federal Deposit Insurance Corporation

Elena Shuvalov, Director, Financial Industry Regulatory Authority

Introduction

Bottega and Powell (2011) provide background on, and real-world examples of, the need for a legal entity identifier (LEI) and detail the key elements that could be used as the basis of the LEI[1]. They note that having a universal entity identifier that is freely available throughout the financial industry could provide tremendous benefits to financial regulators and participants in the financial markets. The LEI also has the potential to be a critically important tool for monitoring systemic risk. If the LEI is implemented as the authors define, then information that accurately and uniquely describes the LEI is likely to increase its value. This information is known as reference data.

The LEI is a foundational step in building data standards for the financial industry. In addition to defining the LEI, Bottega and Powell (2011) identify the need for further research regarding what reference and hierarchical data should be associated with an LEI. This paper focuses on the reference and hierarchical data that could be associated with an LEI to help accurately and uniquely identify entities and monitor systemic risk in financial markets.

This paper also explores the common data elements captured in data sets that describe nonpersonal entities created by public organizations and financial data vendors. The paper identifies commonalities and explores the relative value of common elements. Most of the data sets contain information that can be broken into three categories: reference data that describe the entity, operational metadata that describe and document the data set, and economic or financial data related to the entity.

Although extensive reference data might provide increased benefits, there are costs associated with maintaining data. Therefore, this paper explores the minimum reference data needed to accurately identify an entity and facilitate analysis for systemic risk monitoring. It is not an attempt to capture all information that could be useful to researchers or important to regulators. In fact, some regulators currently capture more-detailed information about the subset of the financial industry they regulate.

Review of Existing Reference Data

The first logical step in determining what reference data are important for entity identification and systemic risk monitoring is to review what data are associated with identifiers in existing data sets. To ensure compliance with license agreements, this review is restricted to publicly available information rather than documentation from purchased data. However, anecdotal evidence suggests that the findings would not be materially different if based on proprietary documentation.

The review attempts to capture a diverse spectrum of entity-related reference data rather than to identify and detail all reference data in the financial industry. To meet this goal, data created or maintained by the U.S. Census Bureau, regulators, foreign central banks, and commercial data vendors are included in the review.

The appendix provides a detailed summary of the data sets reviewed. Across the reviewed data sets, name, address, status, industry classification, various dates, and organizational hierarchy are common concepts. Although historical needs are not always the best predictor of future needs, they are a sound foundation for starting analysis.

Most of the data sets reviewed contained information related to the entity as well as information related to the identifier or the maintenance of the reference data. To clarify this distinction, reference data that

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[1] *Entity* is defined as a business, company, proprietorship, partnership, corporation, or firm.

support entity identification and systemic risk monitoring are broken into (1) reference data elements that describe the entity and (2) operational metadata that describe the LEI or the maintenance of the LEI.

Reference Data Elements

Several key pieces of reference data are common across data sets, including the entity name, various dates, status, and location. For the purposes of uniquely identifying entities and monitoring systemic risk, the following information is likely to be important reference data:

- Legal name of the entity
- Status of the LEI (such as active, inactive)
- Country of incorporation or registration (referred to as formation)
- State, province, or region of formation, if applicable
- Address of the headquarters
- Industrial classification
- Organization type
- Direct parent (more than 50 percent ownership)
- Ultimate parent (more than 50 percent ownership)

The following information is reference data that could be helpful but may not apply to all entities:

- Alias—"also known as" name or "doing business as" name
- Secondary industrial classification

Many of the concepts just identified, such as name, are uniform across borders. However, although several data concepts are common across data sets, the data definitions or standards vary between data sets and across international borders. Adhering to industry standards and applying uniform definitions would likely improve the usability of the data. It seems reasonable that adopting an industry or international standard would be easier and quicker than creating a new standard and would likely meet the needs of a larger audience.

Name

The name of an entity is potentially the most valuable reference data because the name is the most common piece of information used to identify an institution. Based on the review of reference data, many data sets capture both the legal name and an alias. The alias is often a name, other than its legal name, under which the entity conducts business.

Status

As entities enter and exit the market, it will be important to know the status, such as active (open) or inactive (out of business), of an entity at any point in time. Having a status associated with the LEI allows users to monitor activities over time or limit the LEIs reviewed to those currently active.

Country and Region of Formation

An entity can choose to incorporate or register in a country, or region within a country, that differs from the location of its head office or the place where it engages in business. Favorable tax laws are a common reason for an entity to incorporate outside of the country or region where it conducts business. Knowing the country of formation may be necessary to ensure accurate identification of an entity as well as to assist in analyzing macroprudential trends. Similarly, in countries that are broken into distinct legal regions, such as states, provinces, or other administrative divisions, knowing the region of formation may be equally important. Within a country, important regional distinctions could have macroprudential implications that make the state or province, as well as the country, of incorporation important.

Entity Address

Address is a common field used by researchers to uniquely identify entities and match entities across data sets. In the reviewed data sets, the address information stored varies significantly. The address of formation, the address of the primary business location, the mailing address, and the address of the headquarters are some of the addresses captured. These addresses can be geographically dispersed. For example, according to its Securities and Exchange Commission (SEC) 2010 10-K filing, Wells Fargo and Company is headquartered in San Francisco but is incorporated in Delaware. Generally, entities use the locations where they engage in business for their transaction processing and marketing communications. As a result, entities are often associated with the geographic areas where they are headquartered rather than with those where they are incorporated. Because the address of the headquarters is well defined and easily associated with the entity, it is likely to be the best address available for ensuring a company can be easily and uniquely identified. It has the added benefit that it can generally be used to contact an entity.

Industrial Classification

The ability to classify entities by their industries may be an important metric for monitoring the financial system and systemic risk. Participants in the financial markets are evolving and expanding. Both knowing what industries are participating in various financial transactions and observing changes in the fundamental structure of market participants will likely be important in systemic risk monitoring. Identifying the industries of market participants could be a fundamental asset in studying the shadow banking system. Therefore, industrial classification is likely to be an important element for monitoring systemic risk.

Across the world, there are a plethora of industrial classifications. Many countries use historical industrial classifications as well as current classifications. Some countries' classifications are subsets of regional or international classifications limited to the industries applicable in those countries. The United Nations' International Standard Industrial Classification of All Economic Activities (ISIC) stands out as a commonly used or referenced standard.

The North American Industry Classification System (NAICS) and the Statistical Classification of Economic Activities in the European Community (NACE) are widely used in North America and Europe. Both of these industrial classifications map to the ISIC. In Asia, many countries appear to use domestic standards that are linked to or derived from the ISIC. A sample of additional large economies, such as Brazil, showed that the economies' national standards are linked to ISIC, NAICS, or NACE. Another advantage of using the ISIC is that it appears that smaller economies already use the ISIC rather than creating their own systems, therefore reducing the burden on smaller countries.[2]

A common thread across discussions of industrial classification nomenclatures is that classification is often imprecise, which may be particularly so for entities engaging in multiple lines of business. Most of the standards reviewed, such as ISIC, have nomenclatures that start at a high level—for example, manufacturing, finance, or education—and drill down to specific activities—for example, central banking. As much specificity as possible is desirable, but there is value in being able to aggregate firms even at the highest level of the nomenclature. The necessary precision should probably be discussed, taking into account international differences, as part of the implementation process.

Firms with diverse activities that span multiple high-level classifications often concentrate activities in specific subsidiaries, and the activity of each subsidiary would be captured in the firms' reference data. In cases in which the parent company has multiple industrial classifications, it could be given the opportunity to identify additional classifications. Giving the entity the ability to designate a second classification, or possibly multiple classifications, and determine the hierarchy of the classifications may

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[2] See United Nations Statistics Division (1999, 2003, 2011).

reduce rather than add burden. It could also result in higher-quality data if the entity could choose several good classifications rather than one ill-fitted classification.

Organization Type

Knowing the basic structure of an entity could be useful in both uniquely identifying an entity and monitoring systemic risk. The organization type is another commonly known descriptive element of an entity, although not to the same degree as name and address. Knowing the type of organization could also provide insight into who holds the risk if an entity goes bankrupt. If a company that issues stock goes out of business, the stockholders hold the risk. For example, the preferred stock of government-sponsored entities such as Fannie Mae and Freddie Mac was historically held by conservative organizations and could have resulted in concentrations of the holdings within an industry. It may be important to monitor who holds the risk of an entity to determine whether there are concentrations of these holdings that could have a systemic effect on the economy.

An international standard for organization type does not appear to be available. Rather, the types of organizations and the rules for engaging in business under those organization types are determined by local law. Common organization types include a corporation (also known by the abbreviations "SpA," for a joint-stock company, and "PLC," for a public limited company), limited company (also known by the abbreviation "Ltd."), partnership, limited liability company, limited liability limited partnership, limited liability partnership, limited partnership, professional limited liability company, professional corporation, sole proprietorship, and cooperative (also known as an industrial and provident society).

A standard set of general organization types will likely need to be defined. Rather than detailing every possible organization type, grouping similar types across various jurisdictions, such as corporation and PLC, will probably be sufficient. Another alternative is to define organizations as publicly traded, privately held, government owned, or other. Depending on how the reference data are organized, a system allowing for multiple elements that define organization type might be sufficiently easy to maintain and useful.

For the purposes of identifying an entity, either the specific or general categorizations could suffice. For example, if a researcher is looking for an entity associated with stock trades, he or she can filter out all organization types that do not issue stock. A general categorization could also be sufficient in terms of systemic risk monitoring because the ultimate risk holder(s) (that is, stockholders or the government) are identified.

This field may also be helpful in solving some particularly thorny problems associated with the LEI. Comments on the Office of Financial Research's LEI policy statement noted that there are market participants that may need identifiers but are not legal entities, such as pension funds.[3] If regulatory rules result in a need for this type of market participant, funds can be flagged and identified by having a specific organization type.

Hierarchy Information

Organizations can have complex business structures with hundreds of subsidiary and affiliate relationships. The sum of these relationships can be defined as an organizational hierarchy. Just as an individual can be adversely affected by a bad financial investment, an entity can be adversely affected by its ownership in a financially distressed entity. To accurately measure the health of an entity, it is valuable to know the health of that entity's affiliates, subsidiaries, and parents. The organizational hierarchy may also be valuable in measuring an organization's exposure to systemic risk. For example,

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[3] See A-Team Group (2011).

each subsidiary of an entity may have a small exposure to a bankrupt entity, but the entire organization may have a dangerously large exposure if you add up the exposures of all of its subsidiaries.

The review of existing data sets found that organizational hierarchy is captured as part of the reference data or as a separate data set. Data sets with complex and detailed organizational hierarchies are often captured separately from the entity reference data, but simple parent–child relationships are often captured within the reference data.

Other than the regulatory data sets that contain detailed data ownership information, the majority of the data sets recorded the direct parent, the parent at the top of the organizational hierarchy (referred to as the ultimate parent), or both. Given that regulators and market participants have different needs and directives, it is unlikely that a consensus of detailed ownership data will be achieved. It is also unlikely that the detailed regulatory needs can be efficiently maintained through an open standard.

In finance, the standard definition of a subsidiary is ownership by another corporation (the parent) of more than 50 percent of the voting shares of that entity.[4] This definition provides parsimonious yet valuable information. By recording the direct and ultimate parents, users of the reference data can derive organizational hierarchies. Much of the public discussion about the LEI notes that organizational hierarchy is an important element in monitoring systemic risk.[5] Both the direct and ultimate parents are likely to be valuable pieces of information in monitoring such risk.

Dates

Each of the data sets reviewed included dates that helped describe the entity or the identifier. These dates can be divided into reference data about the entity or metadata dates about the maintenance of the LEI. Dates that are reference data used to describe the entity include the date the entity was organized, the date it was closed, dates regarding registration with a regulatory body, and dates of corporate actions. Although having dates about the entity, such as the date of incorporation, would be informative, serious consideration needs to be given to the costs of collecting and maintaining date information. There does not appear to be a compelling argument that dates related to the entity would provide significant assistance in uniquely identifying an entity or in monitoring systemic risk. Metadata dates are further discussed in the next section.

Operational Metadata

Rather than reference data about the entity, operational metadata are pieces of information about the processes used to create or maintain the LEI. Operational metadata are the information describing the maintenance of the LEI. Exactly what metadata are necessary will depend largely on how the LEI repository is designed. The following elements are likely to be important in maintaining the LEI or monitoring systemic risk:

- Dates
    - Start date of the LEI
    - Revision dates
    - Retirement date of the LEI
- Information on why the LEI was retired
- Corporate actions that affect the LEI. In the rare cases in which an entity is assigned a new LEI due to a corporate action, the LEI of the entity that is acquiring most of the predecessor could be

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[4] See Downes and Goodman (1998).
[5] See A-Team Group (2011).

recorded. Alternatively, the previous LEI could be recorded to identify which entity is being continued under a new LEI.

- Privacy indicator. This element consists of a flag indicating whether some or all of the reference data cannot be shared with the public.

Dates

As noted previously, the dates can be broken into reference data and metadata. Metadata dates that describe the maintenance of the identifier include the start date of the LEI, the retirement date of the LEI, and the dates of changes to the reference data. Exactly which metadata dates are needed is likely to depend, in part, on how the reference data are organized. Without defining specific data elements, it may be helpful if the reference data are organized such that the history of an entity is maintained. It could also be useful to determine what data changed and when the change occurred. For example, if a company changes names, both the historical and current names could be referenced to the LEI.

Corporate Actions

A corporate action is a change initiated by the firm. Several data sets reviewed contain corporate action information. A discussion of reference data for the LEI needs to take into account the effect of corporate actions on the LEI. Although some corporate actions, such as stock splits and dividends, will not affect the LEI or its related reference data, others, such as mergers, acquisitions, ownership changes, and spinoffs, may affect the LEI or its reference data. There do not appear to be compelling arguments that most corporate action data would be helpful in identifying entities or in monitoring systemic risk. Therefore, other than in the cases in which a corporate action results in a change to the LEI, maintaining these data as part of the reference data or operational metadata would likely be burdensome and provide limited benefit for these purposes.

One of the characteristics of the LEI, as detailed in Bottega and Powell (2011), is that it should be persistent, which means that even if a company changes ownership, merges, or moves, the company should maintain the same LEI. Only when the company goes out of business should the LEI be retired. The simplicity of this statement, compared with the complexity of corporate actions, particularly in light of international differences, is not lost on the authors. What is legally permissible in one jurisdiction may not be allowed in another. The concept of persistence is a guideline that should be adhered to as long as the concept is legally valid.

A review of corporate actions found that most will affect the LEI's reference data but not the LEI itself. Change in ownership is an example of an action that affects the reference data but not the LEI. For example, it is not uncommon for a start-up company to be acquired as a subsidiary of an established firm, for the subsidiary of a company to be sold to another company, or for a company to reorganize, resulting in a new layer within the corporate organization. In these cases, the entity has not changed, and therefore the entity's LEI should not change. Rather, the hierarchy reference data identifying the parent(s) could be updated to reflect the change in ownership. In such cases, the corporate action information does not affect the LEI.

In the case of a spinoff, in which a company decides to break off a branch, division, or other subset of the company to form a new company, persistence is achieved by maintaining the LEI of the original company and assigning a new LEI to the spinoff. In these cases, the corporate action information does not affect the LEI of the original entity.

Mergers and acquisitions can be significantly more complicated. Mergers generally boil down to how many entities exist at the beginning of the day and how many still exist at the end of the day. The most common merger or acquisition scenario is one in which two or more entities combine to create one entity. Although the legal intricacies of these mergers can be complex, in general, when multiple entities combine, having one of the existing LEIs continue while the others are retired provides continuity and the

ability to monitor entities over time. It should be rare that a new LEI is issued as the result of a merger. In the rare case in which a new LEI must be assigned because of legal restrictions, the corporate action will affect the LEI. When a new LEI is assigned, a link between the old LEI(s) and the newly created LEI could be recorded in the operational metadata to facilitate the tracking of entities over time. This work could be accomplished in several ways, but a common method is to record the LEI(s) of the predecessor entities in the operational metadata.

Careful consideration will need to be given to corporate actions that are prompted by external factors, such as accounting or regulatory constraints, but that have no effect on the operations of the entity, such as those sometimes found in the banking industry. On occasion, to facilitate the changing of locations or banking charters, it is efficient to create a temporary legal entity (sometimes referred to as a phantom entity) that exists for less than a day. To effect a change, the existing entity will merge into the phantom entity, resulting in a legal transaction but no change to the entity or within the industry. In these cases, the LEI should not change, but the associated reference data may change.

Privacy

Confidentiality of the reference data, particularly ownership information, is likely to be a hurdle that must be discussed and addressed. The international nature of the LEI requires flexibility in confidentiality because of legal and cultural differences across borders. Most countries have some types of regulatory reporting requirements, making it unlikely that an entity engaged in financial markets will have the ability to hide its existence. It is, however, possible that entities would like, and are allowed, to keep their relationships with other entities confidential. A common reason provided for why a relationship between entities should not be public is that releasing the ownership data to the public could harm the competitive advantage of an entity.

Privacy laws differ across countries. A privacy or confidentiality indicator could help facilitate the storage of reference data subject to different laws. It should be noted that in the United States, the Supreme Court recently set a legal precedent that corporations are not entitled to personal privacy.[6]

Implementation Considerations

Many factors must be considered regarding the implementation of the LEI and the related reference data. Bottega and Powell (2011) recommend that the implementation of the LEI undergo rigorous vetting as a collaborative and iterative international process. A similar process would likely benefit the implementation of the reference data to ensure that the needs of various countries are served.

This paper has identified the reference data deemed important for entity identification and systemic risk monitoring, but it should not be interpreted as requiring these data for the LEI to be effective and valuable. In fact, the population of reference data may need to be conducted in phases. For example, recording hierarchy data may not be possible until a critical mass of LEIs has been assigned because the parents of entities may not have LEIs during the initial population of the reference data.

It is also likely that additional reference data may be found to be important during the international vetting process. For example, implementation may be helped by the inclusion of alternative regional identifiers. Although no open pervasive identifiers are in use in the United States, there may be good alternative identifiers defined elsewhere.

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[6] See Barnes (2011).

Conclusion

The review of existing data sets and analysis of the uses of their reference data found common themes across the data sets. First, we found that hierarchical data could effectively be captured as part of the reference data. Second, we found that name, address, country and region of formation, and organization type are valuable information in terms of uniquely identifying an entity. Third, we found that ownership information, industrial classification, and country and region of formation are valuable information for monitoring systemic risk. The review also identified important operational metadata that may contribute to the usability of the LEI and assist in entity identification or systemic risk monitoring. Finally, we discussed the benefits of using international standards where they exist and the potential benefits of ensuring that international needs are incorporated in the reference data.

The LEI, as defined in Bottega and Powell (2011), is a building block to data standards in the financial industry that could help with uniquely identifying entities and monitoring systemic risk. Tying additional information to the LEI will likely increase the benefits and usability of the LEI. This paper has outlined the most potentially useful reference data to support entity identification and the monitoring of systemic risk.

Acknowledgments

Appendix

Banking Regulators (United States)

Each of the U.S. banking regulators—the Federal Reserve System, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency—maintains data about the organizations it regulates. Each regulator has a unique identifier assigned to each entity, and the regulators cross-reference the identifiers.

Extensive reference data are maintained for each entity. Much of the data about the entity is specific to the banking industry and makes reference to the type of banking the entity is engaged in, the insurance status of the bank, and data related to regulatory purview. Additional data include various dates (including the dates opened and closed and the date of fiscal year-end), name, physical address, North American Industry Classification System (NAICS) code, organization type, six-digit Committee on Uniform Securities Identification Procedures (CUSIP) number, tax identification number, reason for termination, and website address (uniform resource locator).

The banking regulators also maintain an extensive data set of organizational hierarchy. Relationships in which there is a regulatory interest (5percent of ownership) or a controlling interest (25 percent of ownership or other form of control) are tracked. The data set includes information about the percentage of ownership, types of control, reason for creating a relationship, reason for terminating a relationship, and confidentiality for all direct parents. Ultimate owners are derived from the tiers of direct relationships.

Canadian Financial Institutions

The Bank of Canada and the Office of the Superintendent of Financial Institutions (OSFI) jointly maintain a database of financial entities. The reference data maintained include a unique identifier, name and address, date of fiscal year-end, organization type, and historical names. For some entities, the OSFI tracks the direct parent.

Census Longitudinal Business Database

The U.S. Census Bureau has potentially the most comprehensive listing of U.S. businesses in its Longitudinal Business Database (LBD). The LBD defines the population for a variety of surveys and studies conducted by the Census Bureau. Although there are multiple inputs into the LBD, the primary source of data is the Business Register, which contains information obtained from the Internal Revenue Service (IRS) and periodic mandatory surveys. The database covers most sectors of the economy at the establishment level, which includes individual plants in the manufacturing sector and bank branches in the banking sector. Because the source of these data is the IRS, the data are classified as confidential and are unavailable to other government agencies or the public.

The LBD contains several identifiers, reference data, organizational hierarchy data, and a variety of economic variables. Because of the way the LBD is compiled, several unique identifiers are used to track and cross-reference the data. The reference data include the name, physical address, legal form, and industrial classification of each establishment. The NAICS code at the six-digit level is used for the industrial classification.

To track organizational hierarchy, an ultimate parent organization is assigned a unique identifier that is associated with each establishment in the organization. The ultimate parent owns more than 50 percent of the establishment.[7]

European Central Bank

The European Central Bank (ECB) maintains a Centralised Securities Database (CSDB), which is used for statistical purposes by the European System of Central Banks. Although the database's primary function is to provide data and reference data on individual securities, it also contains some issuer reference data. The reference data related to issuers include the entity's name, its country of residence, its identifiers, the Statistical Classification of Economic Activities in the European Community (or NACE) industrial classification, and the institutional sector as defined by the European System of Accounts 1995. The institutional sectors include nonfinancial corporations, financial corporations, and general government; financial corporations and general government are further divided into subsectors. The CSDB includes information about corporate events for securities as well as corporate events for the issuers, such as mergers and reorganizations.[8]

In a presentation to the Committee for the Coordination of Statistical Activities in May 2010, Francis Gross, head of the ECB's External Statistics Division, notes that for entities, the reference data should include a unique identifier, key attributes, interrelations, classifications, and an electronic contact address.[9]

Japan's Ministry of Justice Commercial Registration System

Japan's Ministry of Justice maintains information about broker–dealer firm registrants in the Commercial Registration System. Under Japanese law, broker–dealer firms are required to register with the system.

The reference data maintained by the Ministry of Justice for stock corporations include a unique identifier called the Zengin Code, which is composed of two parts—a four-digit Uniform Financial Institution Code (UFIC) and a three-digit Branch Code. The UFIC is defined by the Uniform Financial Institution Code Management Committee (UFICMC) of the Japanese Bankers Association (Zenginkyo). The Branch Code is set by each financial institution. The UFIC is assigned to financial banks, *shinkin* banks (regional cooperatives), credit cooperatives, labor credit associations, agricultural cooperatives, fishery cooperatives, nonfinancial life insurance companies, non-life-insurance companies, and brokerage firms. The reference data captured by the UFICMC are corporate names and basic information such as addresses and phone numbers.

The Commercial Registration System maintains a legal name or corporate name for each broker–dealer firm. In addition, the system has information regarding the address of the head office, the number of firms issuing stocks, stock capitalization, management names, the history of mergers and acquisitions, and the existence of liens over corporate assets.

Securities and Exchange Commission and Financial Industry Regulatory Authority

Both the Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority (FINRA) maintain detailed information about their broker–dealer firm registrants in the Central Registration Depository (CRD). The reference data maintained by the SEC and FINRA for broker–dealer entities include unique identifiers. SEC unique identifiers include the CIK (or Central Index Key) and the SEC file number, and FINRA unique identifiers include the CRD number. Other unique identifiers for

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[7] See Jarmin and Miranda (2002).
[8] See European Central Bank (2010).
[9] See Gross (2010).

broker–dealer firms include the MPID (Nasdaq Market Participant Identifier) and mnemonics (NYSE Euronext market identifiers), which are maintained by the Nasdaq Stock Market and NYSE Euronext, respectively. The reference data maintained include address information for both the headquarters or main office location and branch office locations, the entity's state or country of formation, the date of formation, the entity's U.S. tax identifier, the entity's registration status, the registration approval date, and the registration termination date with the respective regulator.

The CRD system maintains a legal name and a "doing business as" (DBA) name for each broker–dealer firm. In addition, the CRD system has information regarding other names under which the company may conduct business in the various states. Name change history is maintained for the legal name and the DBA name, including the effective date for the change.

Organizational hierarchy information is maintained by the SEC and FINRA for both direct and indirect owners of a broker–dealer firm. Information on relationships in which an entity has ownership of 5percent of the broker–dealer, or in which an entity owns 25percent of another entity that owns 5percent of the broker–dealer, is maintained. Information maintained for each of the direct and indirect owners includes the name of the owner entity, the percentage of ownership, the ownership effective date, the ownership termination date, and, for indirect owners, the name of the entity in which interest is owned.

The People's Bank of China Enterprise Credit Information Database

The People's Bank of China defines institutions as enterprises, government-sponsored entities, governmental agencies, social groups, and other legal units. Information about institutions is maintained in an enterprise credit information database for the central bank. The central bank's classification of institutions in national economic statistics follows the definition established by the International Monetary Fund and divides institutions into five categories: financial companies, nonfinancial companies, governmental (in general), residential, and nonprofit institutions serving residents.

The reference data on institutions maintained by the central bank's enterprise credit information database include an institution code, legal name, legal form, economic activities, address, financial statement, contact person, and phone number. The database also includes hierarchy relations among institutions.

Vendors and Utilities

Within the financial industry, many vendors and utilities offer proprietary business identifier solutions, various levels of entity reference data and hierarchy data, or both. Most vendors provide the common reference data attributes of legal name, parent entity, physical address, cross-references, and industry classifications. The level of organizational hierarchy information varies from vendor to vendor, with many partnering to provide more-comprehensive reference data management solutions. Many solutions include business entity mapping using CUSIP numbers, International Securities Identification Numbers, or vendor proprietary identifiers with varying levels of reference data detail. Such solutions include real-time updates via online subscription services or auto updates to client databases.

Some data vendors offering reference data solutions also include proprietary identifiers to uniquely represent a financial instrument, issuer, obligor, or counterparty. Vendors that include proprietary identifiers often provide mappings to other vendor or International Organization for Standardization (ISO) identifiers.

The following section provides a sampling of vendors and utilities that maintain entity identifiers, compile and disseminate financial data, or perform a combination of these services. This section is not intended to present an exhaustive list of vendors or utilities that compile reference data; rather, it is a sampling of firms designed to capture the breadth of reference data commonly available.

Avox

Avox's reference data include dates, status, and addresses (registered and operational) as well as information about the direct and ultimate parents, contact information, registration information, alternative identifier information, and regulator information. Avox has partnered with several other data vendors such as CUSIP Global Services, the Society for Worldwide Interbank Financial Telecommunication (SWIFT), Interactive Data Corporation, and Markit Group Limited.[10]

Bloomberg Enterprise Solutions

Bloomberg Enterprise Solutions' reference data include legal name, addresses (registered and operational), parent information, cross-referencing, industry classifications, and country of risk. In addition, Bloomberg offers financial data and information on corporate actions and events.[11]

Dun & Bradstreet, Inc.

Reference data from Dun & Bradstreet, Inc., include full legal name, address information, parent hierarchy (immediate and ultimate), counterparty, cross-referencing, and industry classifications. Dun & Bradstreet also offers financial data and information on corporate actions and corporate ownership.[12]

Exchange Data International

Reference data provided by Exchange Data International (EDI) include legal name, addresses (registered and operational), immediate parents, information about issuer name, country of registration industry classifications, and security class. EDI has partnered with Counterparty Link to offer a legal entity data service that monitors issuer and legal hierarchy data for corporate actions and updates that affect investor portfolios.[13]

GS1

GS1 has developed a set of system standards including a Global Location Number (GLN) to uniquely identify physical locations or legal entities. The GLN is a proprietary 13-digit number that contains a GS1 company prefix, a location reference, and a check digit.

GS1 has developed a Global Business Entity Identifier (GBEI) to uniquely indentify a legal entity participating in a financial transaction. The GBEI follows the same GLN nomenclature and includes legal entity name, address, entity role, parent hierarchy, and subsidiary legal identifiers.[14]

Interactive Data Corporation

Interactive Data Corporation's reference data include legal name, addresses (registered and operational), phone number, web address, cross-referencing, and industrial classifications. The company also maintains information about the immediate and ultimate parents, parent details, aggregate voting rights, and debt outstanding. Interactive Data Corporation offers a business entity utility that provides a holistic view of the corporate hierarchy of an entity, including the entity's capital structure and global exposure. In addition to entity and hierarchy information, Interactive Data Corporation offers financial data and details on corporate actions and events.[15]

SIX Telekurs

SIX Telekurs's reference data include legal name, addresses (registered and operational), immediate and ultimate parents, cross-referencing, and industry classifications. In addition, SIX Telekurs offers financial

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[10] See A-Team Group (2009).
[11] See Bloomberg Enterprise Solutions (2011).
[12] See Dun & Bradstreet, Inc. (2011a, 2011b).
[13] See Exchange Data International (2011).
[14] See GS1 (2011).
[15] See Interactive Data Corporation (2011).

data and information on corporate actions and events, industry codes, lead managers, and payment agent's custodians.

SIX Telekurs has partnered with Standard & Poor's and Dun & Bradstreet to offer a reference data mapping and business relationship repository called Cross Reference Services. This utility presents a business entity's entire global corporate hierarchy, including risk exposure and cross-referenced financial instruments.[16]

Society for Worldwide Interbank Financial Telecommunication

SWIFT's reference data include dates, status, and address information as well as information about the ultimate parent, contact information, registration information, alternative identifier information, and regulator information.[17]

Standard & Poor's

Reference data provided by Standard & Poor's include legal name, addresses (registered and operational), information about parent hierarchy (immediate and ultimate), cross-referencing, and industry classifications. In addition, Standard & Poor's offers financial information and information on corporate actions and events.

CUSIP Global Services and Avox developed an identification system for business entities called CUSIP Avox Business Reference Entity (CABRE). The CABRE system combines a two-character ISO entity location code with the CUSIP issuer number that uniquely identifies issuers, obligors, and counterparties.[18]

Thomson Reuters

Thomson Reuters's reference data include legal name, address information, parent company information, counterparty, cross-referencing, industry classifications, and risk exposure. Thomson Reuters also offers financial information and information on corporate actions and events.

Thomson Reuters developed a market-based classification structure that captures the primary business functions of corporations—Thomson Reuters Business Classification (TRBC). TRBC is structured into four levels of hierarchies consisting of 10 economic sectors, 25 business sectors, 52 industry groups and 124 industries.[19]

Financial Industry Groups

Financial industry groups such as the Enterprise Data Management Council, the Securities Industry and Financial Markets Association (SIFMA), and others have started researching the topic of what reference data need to be associated with an LEI. The data elements identified by these groups include dates, name, status, and address information as well as information about the ultimate parent, contact information, registration information, alternative identifier information, and regulator information. In a report issued by SIFMA, that group recommends that the data elements include name, address, country of formation, legal form, ultimate parents' LEI, and other metadata.[20]

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[16] See SIX Telekurs (2010).
[17] See Enterprise Data Management Council (2011).
[18] See Standard & Poor's (2009, 2011a, 2011b).
[19] See Thompson Reuters (2011a, 2011b, 2011c).
[20] See Securities Industry and Financial Markets Association (2011).

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