MSCI GLOBAL DATA STANDARDS FOR REAL ESTATE INVESTMENT

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Contents

1   INTRODUCTION

This document describes the MSCI Global Data Standards for Real Estate Investment (GDS), which considers private real estate direct investment (equity) as well as private real estate lending (debt), among other types of indirect real estate investment. The GDS is based on careful deliberation and extensive consultation with clients and other interested industry participants globally. The transformation, currently taking place, in the way real estate is viewed and invested in by a rapidly broadening class of asset owners and managers who share global mandates. Real estate is no longer just the focus of domestic investors whose mandates are defined by national boundaries.

For this reason, a new approach is required to define the data inputs that underpin performance measurement and investment reporting in an era of ambitious cross-border strategy formation and implementation. The new GDS is designed to deliver this infrastructure.

Compared to other real estate reporting standards that center on areas such as best practices in valuation and governance. The MSCI Global Data Standards complement these by focusing on the data inputs needed for investment performance measurement at vehicle, asset and tenant level.

GDS will continue to be updated and revised in future editions to meet the evolving requirements of the various stakeholders. MSCI welcomes ongoing discussion and feedback on the contents of the GDS. The main benefits to investors in commercial real estate from the adoption of the MSCI Global Data Standards are as follows:

- **Better informed decision-making** through enhanced cross border and cross asset class comparability;
- **Improved data quality and quicker availability of performance results**, due to process rationalization.

The GDS has been designed and constructed in parallel and to support the **MSCI Global Methodology Standards for Real Estate Investment, MSCI Property Indexes Methodology, MSCI Property Fund Indexes Methodology** and **MSCI Europe Quarterly Private Real Estate Debt Fund Index Methodology**. Together these documents provide comprehensive definitions of the data inputs and calculations that support the measurement and reporting of performance and risk for private real estate investments.

This document provides some background to the MSCI Global Data Standards, explaining its purpose, benefits and structure. The outline of the Data Standards is followed by appendices that has the link to the documents listing all data fields, enumerations, definitions and data formats available in the GDS model.

2   PURPOSE OF THE DATA STANDARDS

The development and implementation of performance measurement and reporting standards is a significant step in the evolution of industries. The evolution of these standards typically follows a common pattern, progressing from local or national, to regional and then global standards. At each stage of this evolution, gains in transparency and efficiencies in reporting are achieved that enable the industry to mature and grow.

Private real estate investment, like many other areas of finance, needs globally consistent performance measurement standards to encourage cross border investment and the development of more efficient markets. However, today most of the existing standard applied to private real estate remains highly localized and focused on the physical product due to the immobile nature of real estate assets.

Progression from localized physical standards to global investment standards has been slow, but with increasing levels of cross-border investment, the need for consistent comparisons of performance metrics across countries and regions of the world has moved to the forefront for asset owners and asset managers of real estate.

Institutions at the forefront of the globalization process are discovering that the potential benefits of private real estate are being limited by information inconsistencies (across both markets and asset classes) and hampered by slow, costly, and error prone data collection and transfer processes. This handicap is especially evident when comparing real estate to other financial asset classes like equities or fixed income, where there are much higher levels of global consistency and automation of data exchange. A global standard will help to rationalize the way that data are held in source systems, making it possible to automate standard data exchange and limit the amount of time spent on data input and validation.

3   BENEFITS OF ADOPTING THE DATA STANDARDS

Today, performance information about private real estate investments often remains relatively opaque, and the timely measurement requires multiple layers of private data to be passed between owners, managing agents, accountants, valuers, and analysts, on an increasingly frequent basis. The impetus for this interchange is being driven by increasing regulatory demands from bodies such as the International Organization of Securities Commissions (IOSCO), and more specific regulations including the European Parliament's Alternative Investment Fund Managers Directive (AIFMD). The current lack of consistent global data standards for real estate investment performance means that, even at the country level, parties involved do not always use the same language and often store data in their bespoke systems, with little transferability. The result is often inconsistent comparative measurement and substantial investments in time, money and effort spent on data calculation, collection, and management tasks at every stage of the investment process.

The MSCI Global Data Standards have been developed to provide the real estate industry with improved comparability across markets and asset classes and overcome information exchange challenges. The potential benefits to investors include **better informed decision-making** through enhanced cross border and cross asset class comparability and **improved data quality and quicker availability of performance results**, due to process rationalization.

BETTER INFORMED DECISION MAKING

Enhanced consistency, across real estate markets and other asset classes, will contribute to improved decision making. Below are some examples:

Consistent within- and cross-asset class strategy development and portfolio construction: Better informed allocations will be possible owing to an improved alignment of return calculations, standardized market and sector reweighting procedures, and globally consistent currency conversion processes. At the same time, like-for-like assessment of real estate market cycles will be possible as a result of more comparable yield and rent measures. Globally consistent geographic and property type classifications will improve the comparability of market segments between countries. Operational metrics like vacancy rates and net operating costs will be compared and projected more consistently across markets.

Consistent within- and cross-asset class benchmarking: The availability of robust cross border indexes that are appropriate for benchmarking private real estate investments independently, or in combination with indexes from other asset classes, will grow.

IMPROVED DATA QUALITY AND QUICKER AVAILABILITY OF PERFORMANCE RESULTS

Through broad agreement on performance measures and definitions, the quality of real estate data is also expected to improve. By removing some of the ambiguity and heterogeneity in local or national market practices, the Data Standards will potentially help to reduce discrepancies in the way measures are calculated across markets and result in greater confidence in the underlying data.

This should in turn help to reduce the reliance on manual calculation, encouraging automation and **improved data quality**. The resulting benefits will likely include:

- More precise comparisons across countries and sectors.

- Fewer error-prone processes.

- Greater levels of consistency, promoting comparison with other asset classes.

With increased global consistency and automation, the speed of data verification should also improve, resulting in **faster and more efficient data collection** as well as more timely **reporting and analysis**. The results of this improvement in speed are likely to include:

- Faster delivery of indexes and portfolio analytics

- Reduced reporting lags

- Increased reporting frequencies

- More timely risk analyses

- Enhanced regulatory reporting

Ultimately, improvements in consistency, quality, and speed of delivery in performance reporting will help to improve transparency and comparability across real estate markets as well as between real estate and other asset classes. The result will be more informed and **better investment decision making**, and **an improvement in the integration of real estate within the multi-asset class portfolio.**

4   CHARACTERISTICS OF THE DATA STANDARDS

Historically, MSCI had maintained slightly different data specifications in each country, to reflect local differences in legal frameworks, real estate management practices and geographies. Although the core principles of return calculation and data point specification have been synchronized for many years, national and other service-specific variations have persisted to accommodate local requirements. While additional data items may still be necessary for some specific reporting services, the increasing number of global investors needing accurate cross border comparisons, and the general adherence to higher level international standards for valuation and accounting, now make it both desirable and possible to integrate MSCI's local data specifications within a **single Data Standards framework**.

The Data Standards cover a **broad range of real estate performance measurement data inputs** at the vehicle, asset, and tenancy levels that support performance and risk analytics. The scope of the Data Standards extends from the data inputs necessary for performance measures (returns, yields, and costs) and segmentations (asset type and geographic classification), to methods of data transformation (such as interpolation and currency conversion). It covers not only financial metrics, but also non-financial typologies and descriptors.

The Data Standards have been **designed to complement existing standards**. Wherever possible, MSCI principles and definitions are consistent with other external international data standards. In particular, MSCI draws on existing reporting, accounting, valuation and measurement standards:

- The overarching principles governing MSCI portfolio level performance measurements are those contained in the GIPS Global Investment Performance Standard, prepared by the Chartered Financial Analyst (CFA) Institute, which covers the measurement and disclosure of investment returns for all asset classes.

- International Financial Reporting Standards (IFRS), developed by the International Accounting Standards Board (IASB), are also fundamental to MSCI's Data Standards. IFRS accounting standards now cover the majority of countries contributing to MSCI global indexes, and although these have not yet been made mandatory, it is generally acknowledged that local standards will converge towards IFRS. MSCI has, therefore, aligned its data recording principles with IFRS wherever possible.

- MSCI has always aimed to utilize only those valuations which are predicated upon open market principles, in order to produce like-for-like international comparisons of investment performance. However, there have historically been a number of different area-specific valuation or appraisal standards adopted within national markets and prepared by local valuation bodies. The International Valuation Standards Council (IVSC) was formed in 1981 to develop international technical and ethical standards for valuations to support the regulation of financial markets.

  In 2014 the IFRS Foundation and International Valuation Standards Council ('IVSC') agreed a statement of protocols for co- operation on International Financial Reporting Standards and International Valuation Standards, acknowledging their common interest in ensuring consistent measurement of Fair Value. MSCI has, therefore, adopted the IVSC valuation standards as the preferred basis for reporting capital and rental values for performance measurement purposes.

- The European Association for Investors in Non-Listed Real Estate Vehicles (INREV) publishes an integrated set of principles and guidelines for reporting for non-listed vehicles. Wherever possible, MSCI Global Data Standards for Real Estate Investment for vehicle level reporting have been aligned with INREV definitions, albeit with terminology adjusted to fit a wider range of global markets.

- EPRA, the European Public Real Estate Association, is the industry body for European REITs and other listed property companies. It provides industry standard definitions of performance measures such as yields, which have been adopted here as the basis for definitions of some data inputs.

- The NCREIF PREA Reporting Standards (Reporting Standards) are a U.S. industry initiative, co-sponsored by the National Council of Real Estate Investment Fiduciaries (NCREIF) and the Pension Real Estate Association (PREA), with a mission to establish and implement information standards for the real estate industry which will facilitate transparency, consistency and informed decision making.

  Established standard-setting organizations such as the Financial Accounting Standards Board (FASB) and the CFA Institute do not specifically address certain institutional real estate investment and investor reporting issues. The Reporting Standards initiative was created to fill this gap and increase transparency within the industry. Wherever possible, the Data Standards are consistent with NCREIF PREA Reporting Standards, albeit with terminology adjusted to fit a wider range of global markets.

- The Task Force on Climate-Related Financial Disclosures (TCFD), created by the Financial Stability Board (FSB), has developed consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders. MSCI's Global Data Standards are designed to enable calculation of Climate-related Risk (physical and transitional risk) using the TCFD disclosures and also for ESG disclosure as part of the Sustainable Finance Disclosure Regulation (SFDR) as introduced by the European Commission.

MSCI's Global Data Standards complements the **MSCI Global Methodology Standards for Real Estate Investment, MSCI Property Indexes Methodology, MSCI Property Fund Indexes Methodology, MSCI Europe Quarterly Private Real Estate Debt Fund Index Methodology, MSCI Standards for Real Estate Valuations** and the **MSCI Real Estate Data Provider Code of Conduct**. The Global Methodology Standards detail all MSCI's definitions of real estate performance measures and core analysis procedures. These measures and calculations rely either directly or indirectly on the data conventions set out in the Global Data Standards. The Code of Conduct defines the broad organizational and quality control principles to which any contributor must adhere when contributing real estate data to MSCI.

5   STRUCTURE OF THE DATA STANDARDS

The MSCI Global Data Standards for Real Estate Investment is structured to provide a robust and comprehensive data model. At the highest level, the Data Standards can be broken down into four sections relating to the type of data being classified:

- The vehicle section classifies fund-level data, including descriptive, valuation, capital and revenue-flow and allocation information.

- The Non-Direct Holding section classifies holdings in indirect real estate, other financial assets and liabilities.

- The direct Real Estate section classifies real estate asset-level data including descriptive, transaction, valuation, capital and revenue- flow information.

- The tenancy section classifies lease level data and includes descriptive, valuation, cashflow, ESG and lease details of units within the direct real estate properties.

The broad structure of the Data Standards is summarized in the Exhibit 1 in the next page.

Exhibit 1: Structure of the Global Data Standards

Data Category							
Entity Level	**Investment Types**	**Descriptive**	**Valuation**	**Cash flow**	**Asset Allocation (Index specific)**	**Lease Details**	**ESG**
Vehicle		Y	Y	Y	Y	-	-
Non-Direct holdings	**Indirect Investment**	Y	Y	Y	-	-	-
	Cash	Y	Y	Y	-	-	-
	Debt Investment	Y	Y	Y	-	-	-
	Derivatives	Y	Y	Y	-	-	-
	Forward Commitment	Y	Y	Y	-	-	-
	Acquisition Costs Capitalized	Y	Y	-	-	-	-
	Other Assets	Y	Y	Y	-	-	-
	Debt (Liability)	Y	Y	Y	-	-	-
	Minority Interest Liabilities	Y	Y	Y	-	-	-
	Other Liabilities	Y	Y	Y	-	-	-
Direct Real Estate		Y	Y	Y	-	-	Y
Tenancy		Y	Y	Y	-	Y	Y

Below is a brief description of data categories:

Descriptive: This data is largely static in nature and should be populated in the initial delivery to MSCI or for any new purchases. It includes reference identifiers, dates and asset and vehicle characteristics

Valuation: Data that is required to be updated as at the end of each measurement period. Includes Capital Values, NAV and internal Fund Returns, among other data fields

Cash flow: Total Capital and Revenue flows for all assets and liabilities over the period. Cash flows are provided in periodic increments (day dated, monthly etc.) as specified

Asset Allocation (Index specific): The aggregated breakdown of the vehicle's investment in direct or indirect assets, including private real estate lending (debt), by sector and segmentation at the end of each measurement period

Lease Details: Information regarding (Lease details, Unit characteristics, Tenancy Steps indicating future rent schedule of the unit)

ESG: Data for Climate risk reporting and Index calculation based on building certifications. Includes GHG Emissions, Energy Consumption, Energy Performance Certification, Environment Assessment Rating of real estate properties

APPENDIX 1: FORMAT OF THE DATA STANDARDS

The Data Standards are presented as a series of complete schedules of all the data items required for performance measurement and risk analysis at a global level. Other data required by MSCI for specific local or asset type products can be supplied to MSCI clients on request.

The data fields are set out in a readily searchable tabular format, showing:

- Data Field Name
- Data Field Label
- Data Category
- Data Field definition
- Data Format
- Enumerations (Whether or not enumerations are available)
- Countries (Global or regional data field)

All data definitions must be interpreted in the context of the general principles as outlined in Appendix 2.

Appendix 3 consists of the Data field definitions as well as Enumerations for the fields which are listed separately (where required).

APPENDIX 2: GENERAL PRINCIPLES FOR DATA RECORDING UNDER THE DATA STANDARDS

The data definitions must all be applied in accordance with the following principles, which underpin all the data items, bringing them together into a consistent and coherent data structure that is appropriate for investment performance and risk measurement. These principles are set out in more detail in the instructions section of the data collection template.

Frequency of data records: The minimum frequency for external valuations is annual. Actual valuations (whether full or desktop, external or internal) should be provided for the month to which they pertain.

Cash flows are recorded by MSCI as monthly amounts. All capital and revenue flows should be provided month by month, unless otherwise requested. Transactions should be day-dated.

Completeness: All assets and liabilities that form part of the vehicle or portfolio must be included.

- All direct properties including, but not restricted to developments, joint ventures and shared ownership, owner occupied and non-domestic holdings in commercial and residential assets.

- All indirect investments in private and public vehicles including: Listed and unlisted vehicles, property company shares, mortgage loans and other derivatives.

- Cash, other assets, debt and other liabilities.

For further details, see investment types in the MSCI Global Data Standards - Model.
All financial data for shared ownership properties must be provided pro rata for the appropriate share. Floor space, Emissions and Energy usage data must however be provided at 100% .

Direct real estate assets: Asset should be recorded at individual building or group of buildings. For a group of buildings, they should ideally share the same location, same building quality and same property sector. In the case of a building or group of buildings has a mixture of types (i.e. office and retail), those should be recorded as two separate assets if the valuation and revenues and costs could be provided for the individual assets. In certain cases, assets are aggregated even at different locations, because it isn't feasible to split them into individual assets because there is one agreement with the tenant and that agreement can't be attributed to single assets including separate valuations for the individual buildings.

Valuations: Valuations standards are documented in the MSCI Standards for Real Estate Valuations document.

Accruals principle: All income and costs must be submitted on an accrual basis, assuming that income is received when due, and costs are paid when invoiced, excluding interest on payment arrears and provisions for bad debts.

Transaction costs: Costs associated with the purchase or sale of whole properties must be recorded as at the date of the transaction in the specific fields provided for these costs. These costs must be excluded from on-going capital expenditure or receipts to avoid double counting.

Transaction dates: Purchases and sales of buildings, sites or direct developments should be timed to the day of legal completion, from which the new owner is entitled to receive income. For pre-funded developments, the purchase date is taken to be that of the payment of the first installment to the developer. For Non-direct holdings, the transaction date should be the contract/trade date, not the settlement date.

Currency: For direct holdings, all data are recorded in the local currency of the property, except for several Eastern European Countries (e.g. Bulgaria, Czech Republic, Hungary, Poland, Romania, and Slovakia) for which the data are recorded in Euros. Data recorded at vehicle level must be provided in the operating currency of the vehicle. For Non-direct holdings, where data are recorded for specific holdings, it should be provided in local currency. If Non-direct holdings data are recorded at aggregate level, it should be provided in the operating currency of the vehicle.

Language: Local languages and scripts should be used for asset, vehicles and other names and addresses. Otherwise English is the default language for the Data Standards.

Rounding: All financial amounts and floor spaces are recorded as whole integers, unrounded. Decimal values for percentages or other rates should be recorded to at least two decimal places. Percentages should be provided as percentage points, not decimals (e.g., 75% should be provided as '75.00' not '0.75').

Null responses: A zero should be recorded for all financial fields if there has been no income, receipt or expenditure under a category. A field left blank will be treated as a non-response.

All enumerated fields include three standard default responses: (1) Not applicable – as indicated by field definitions, which state the types of record requiring a response. (2) Not known – only to be used where the field is applicable, and the response is genuinely not known. (3) Applicable, not categorized – only to be used where the field is applicable, but the response cannot be categorized under any of the possible responses listed.

Negative values: Data points for expenditures and receipts should all be submitted as positive amounts. Corrections and reversals of accruals should be recorded as negative amounts.

APPENDIX 3: GDS Model and Enumerations

The details of the GDS Model that entails the Data Field Name, Data Field Label, Data Category, Data Field Definition, Data Format, Enumeration and Countries are available in the spreadsheet titled MSCI Global Data Standards for Real Estate Investment – Appendix 3.

Additionally, the spreadsheet also details the enumerations that entails the Data Field Name, Data Field Label, Combined enumeration code value and Definition. To access the spreadsheet – please click the link below:

MSCI Global Data Standards for Real Estate Investment – Appendix 3

APPENDIX 4: Versioning Table

Version	Publication Date	Key Changes
1.0	July 2016	First release of MSCI Global Data Standards for Real Estate Investment
1.1	February 2017	Sale Costs: Other Correct definition included; previous definition was related to different data field Turnover Rent Correct definition included; previous definition was related to different data field Property Type Enumeration definition 1703 - Other – Applicable Not Categorized has been amended and includes mixed used properties Tenant Name Added to definition that if the tenant is a named individual the name should be replaced with "Private Individual" Name of Tenant Guarantor Added to definition that if the guarantor is a named individual the name should be replaced with "Private Individual"

Version	Publication Date	Key Changes
1.2	August 2017	Development Status
		Enumerations added include data fields to collect vehicle
		revenue flows:
		- Distributions Unitized
		- Net Investment Income Before Fees Unitized
		- Net Investment Income After Fees Unitized
		- Incentive Fees Unitized - Capital account
		- Incentive Fees
1.3	January 2019	Valuation standards are removed from the document and are included in the MSCI Standards for Real Estate Valuations document
		The principles for data provision on the level of direct real estate assets have been added.
		The principle for currency data provision has been made explicit for Eastern European countries for which the data needs to be provided in euros.
1.4	July 2020	Introduced additional global and regional data fields along with corresponding enumerations
		Introduced additional data fields pertaining to TWR methodology for Property Fund Indexes
		Introduced new data fields pertaining to ESG for Direct Real Estate
		Replaced the tables in Appendix 3 and 4 with MSCI Global Data Standards for Real Estate Investment – Appendix 3 Spreadsheet
		Minor edits to the definitions of multiple data fields

Version	Publication Date	Key Changes
1.5	June 2021	Updated Exhibit 1: Structure of the Global Data Standards now includes ESG data collected for Direct Real estate properties
		Introduced new data definitions pertaining to: Legal entity Identifier (LEI), GHG Emissions, Energy consumption, Share of Fossil fuel related activities, Energy Performance Certificate for Property, Environment Assessment Rating for Property, Other ESG definitions. Enumerations added to support data collection for new data fields
		Introduced a new enumeration for Property Type: 'Offices – Life Science and Lab Spaces'
		Introduced additional global and regional data fields along with corresponding enumerations
		Clarification to the definition of the following data fields: New Capital Invested (Day Dated), Capital Returned (Day Dated), Distributions (Day Dated), Net Investment Income After Fees
		Minor edits to definitions of multiple data fields
		For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet
1.5.1	October 2021	Updated link to appendix 3 spreadsheet with multiple minor changes (Refer to version control tab in appendix 3 spreadsheet)
1.5.2	December 2021	Included minority interest liabilities in the structure of global data standards.
		Updated link to appendix 3 spreadsheet with multiple minor changes (Refer to version control tab in appendix 3 spreadsheet)
1.5.3	June 2022	Updated appendix 3 spreadsheet with multiple minor changes (Refer to version control tab in appendix 3 spreadsheet)

Version	Publication Date	Key Changes
1.5.4	January 2023	Introduced new data fields and new enumerations Clarification to definition of data fields and enumerations For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet
1.5.5	April 2023	Introduced new data field Clarification to definition of data fields For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet
1.5.6	June 2023	Existing data fields replaced with new data fields For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet
1.5.7	September 2023	Introduced new enumerations Clarification to definition of enumerations For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet
1.5.8	February 2024	Clarification to definition of data fields Introduced new enumeration Clarification to definition of existing enumeration Introduced new data field For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet
1.5.9	March 2024	Existing data fields replaced with new data fields For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet

Version	Publication Date	Key Changes
1.5.10	June 2024	Introduced new data fields and enumerations for private real estate debt (lending)
1.5.11	September 2024	Introduced new data fields Clarification to definition of data fields For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet
1.5.12	April 2025	Clarification to definition of data fields Clarification to definition of existing enumeration For details regarding changes please refer the versioning tabs in Appendix 3 spreadsheet

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