

Package ‘imf.data’

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Title An Interface to IMF (International Monetary Fund) Data

Version 0.2.0

Description Provides low-level access to the International Monetary Fund Statistical Data and Metadata eXchange ('SDMX') 3.0 API, available at <https://data.imf.org/>, and a concise workflow for discovering datasets, inspecting dimensions, and downloading observations as tidy data frames.

Depends R (>= 4.0.0)

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Imports htr2 (>= 1.0.0), tibble

Suggests knitr, rmarkdown, testthat (>= 3.0.0), vcr (>= 2.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

Collate 'sdmx_api.R' 'imf_api.R'

URL <https://pedrobtz.github.io/imf.data/>

BugReports <https://github.com/pedrobtz/imf.data/issues>

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Contents

get_data	2
list_datasets	3
list_dimensions	4
list_dimension_values	4

sdmx_api	5
sdmx_availability	5
sdmx_data	6
sdmx_metadata	8
sdmx_structure	9
set_imf_proxy	10
Index	12

get_data	<i>Download IMF data as a tidy data frame</i>
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Description

Query a dataflow with named dimension filters and decode the indexed SDMX response into one row per observation.

Usage

```
get_data(  
  dataflow,  
  filters = list(),  
  agency_id = "IMF.STA",  
  version = "+",  
  start_period = NULL,  
  end_period = NULL,  
  first_n_obs = NULL,  
  last_n_obs = NULL,  
  attributes = character()  
)
```

Arguments

dataflow	Dataflow ID.
filters	Named list of dimension selections.
agency_id	Maintainer ID.
version	Dataflow version.
start_period, end_period	Optional SDMX period bounds.
first_n_obs, last_n_obs	Optional observation limits per series.
attributes	Character vector of series or observation attributes to include in the result.

Value

A tibble containing dimension columns, TIME_PERIOD, OBS_VALUE, and any requested attributes.

Examples

```
get_data(  
  "CPI",  
  filters = list(  
    COUNTRY = "USA",  
    INDEX_TYPE = "CPI",  
    COICOP_1999 = "_T",  
    TYPE_OF_TRANSFORMATION = "IX",  
    FREQUENCY = "M"  
  ),  
  last_n_obs = 2  
)
```

list_datasets	List IMF datasets
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Description

Return the available IMF SDMX dataflows as a stable, tidy catalogue.

Usage

```
list_datasets(agency_id = "*")
```

Arguments

agency_id Maintainer ID. Use "*" for all maintainers.

Value

A tibble with agency, id, version, name, description, and dsd_id columns.

Examples

```
datasets <- list_datasets("IMF.STA")
```

list_dimensions	<i>List the dimensions of an IMF dataset</i>
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Description

Resolve a dataflow's data structure and return its dimensions in SDMX key order, including the associated codelist where one is declared.

Usage

```
list_dimensions(dataflow, agency_id = "IMF.STA", version = "+")
```

Arguments

dataflow	Dataflow ID.
agency_id	Maintainer ID.
version	Dataflow version. "+" selects the latest stable version.

Value

A tibble describing each dimension and its codelist.

Examples

```
list_dimensions("CPI")
```

list_dimension_values	<i>List available values for a dataset dimension</i>
-----------------------	--

Description

Use the IMF availability endpoint to return the codes that remain valid for a dimension, optionally constrained by selections for other dimensions.

Usage

```
list_dimension_values(
  dataflow,
  dimension,
  filters = list(),
  agency_id = "IMF.STA",
  version = "+"
)
```

Arguments

dataflow	Dataflow ID.
dimension	Dimension ID.
filters	Named list of selections for other dimensions.
agency_id	Maintainer ID.
version	Dataflow version.

Value

A tibble with code, name, and description columns.

Examples

```
list_dimension_values(
  "CPI",
  "FREQUENCY",
  filters = list(COUNTRY = "USA")
)
```

sdmx_api	<i>IMF SDMX 3.0 API</i>
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Description

Low-level access to the IMF SDMX 3.0 structure, data, availability, and metadata endpoints. These functions return the API response without converting it to a tidy data frame. See [get_data\(\)](#) for the higher-level interface.

sdmx_availability	<i>Query data availability</i>
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Description

Retrieve the available dimension values matching a data query without downloading observations.

Usage

```
sdmx_availability(  
  dataflow,  
  key = "*",  
  component_id = "*",  
  agency_id = "IMF.STA",  
  version = "+",  
  context = "dataflow",  
  filters = list(),  
  mode = c("exact", "available"),  
  references = "none",  
  format = c("json", "xml")  
)
```

Arguments

dataflow	Dataflow ID.
key	SDMX series key. Use "*" with filters for named filtering.
component_id	Dimension for which availability is requested.
agency_id	Maintainer ID.
version	Dataflow version.
context	Query context.
filters	Named list of component filters.
mode	Return exact matches or values that remain available.
references	Referenced artefacts to include.
format	Response format. XML responses are returned as text.

Value

A nested list for JSON, a character value for XML, or NULL for an HTTP 204 response.

Examples

```
sdmx_availability("CPI", component_id = "COUNTRY")
```

sdmx_data	<i>Query statistical data</i>
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Description

Retrieve an SDMX data message from the IMF API. This is the raw interface; use `get_data()` to obtain a tidy data frame.

Usage

```
sdmx_data(  
  dataflow,  
  key = "*",  
  agency_id = "IMF.STA",  
  version = "+",  
  context = "dataflow",  
  filters = list(),  
  start_period = NULL,  
  end_period = NULL,  
  first_n_obs = NULL,  
  last_n_obs = NULL,  
  updated_after = NULL,  
  include_history = FALSE,  
  attributes = "dsd",  
  measures = "all",  
  format = c("json", "xml")  
)
```

Arguments

dataflow	Dataflow ID.
key	SDMX series key. Use "*" with filters for named filtering.
agency_id	Maintainer ID.
version	Dataflow version.
context	Query context.
filters	Named list of component filters.
start_period, end_period	Optional SDMX period bounds.
first_n_obs, last_n_obs	Optional positive observation limits. They cannot be used together.
updated_after	Optional RFC 3339 timestamp.
include_history	Include historical versions.
attributes	Attribute detail requested from the API.
measures	Measures requested from the API.
format	Response format. XML responses are returned as text.

Value

A nested list for JSON, a character value for XML, or NULL for an HTTP 204 response.

Examples

```
sdmx_data(  
  "CPI",  
  agency_id = "IMF.STA",  
  key = "USA.CPI._T.IX.M",  
  last_n_obs = 2  
)
```

sdmx_metadata	<i>Query metadata reports</i>
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Description

Retrieve metadatasets from the IMF SDMX API.

Usage

```
sdmx_metadata(  
  provider_id = "*",  
  metadataset_id = "*",  
  version = "+",  
  detail = c("allstubs", "full"),  
  format = c("json", "xml")  
)
```

Arguments

- provider_id Metadata provider ID.
- metadataset_id Metadataset ID.
- version Metadataset version.
- detail Metadata detail level.
- format Response format. XML responses are returned as text.

Value

A nested list for JSON, a character value for XML, or NULL for an HTTP 204 response.

Examples

```
sdmx_metadata(detail = "allstubs")
```

sdmx_structure	<i>Query structural metadata</i>
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Description

Retrieve IMF SDMX structural metadata such as dataflows, data structures, codelists, and concept schemes.

Usage

```
sdmx_structure(  
  structure_type = "dataflow",  
  agency_id = "*",  
  resource_id = "*",  
  version = "+",  
  detail = NULL,  
  references = NULL,  
  format = c("json", "xml")  
)
```

Arguments

structure_type	Type of structure to retrieve.
agency_id	Maintainer ID. Use "*" for all maintainers.
resource_id	Resource ID. Use "*" for all resources.
version	Resource version. "+" selects the latest stable version.
detail	Optional SDMX detail level.
references	Optional referenced artefacts to include.
format	Response format. XML responses are returned as text.

Value

A nested list for JSON, a character value for XML, or NULL for an HTTP 204 response.

Examples

```
sdmx_structure("dataflow", agency_id = "IMF.STA", detail = "allstubs")  
sdmx_structure("codelist", "IMF", "CL_FREQ")
```

set_imf_proxy

Configure an HTTP proxy

Description

Configure a proxy for all subsequent IMF API requests in the current R session. Credentials are kept in package-private session state, passed to `httr2::req_proxy()`, and omitted from returned configuration summaries.

Usage

```
set_imf_proxy(
  url,
  port = NULL,
  username = NULL,
  password = NULL,
  auth = proxy_auth_methods
)

clear_imf_proxy()
```

Arguments

url	Proxy URL, including its scheme and hostname.
port	Optional proxy port.
username, password	Optional proxy credentials. Supply both or neither.
auth	Proxy authentication method supported by <code>httr2::req_proxy()</code> .

Details

Standard proxy environment variables such as `HTTPS_PROXY`, `HTTP_PROXY`, and `NO_PROXY` continue to work when no package-specific proxy is set.

Value

A redacted summary of the previous proxy configuration, invisibly.

Examples

```
# Not run: requires a reachable proxy server. The example points at a
# placeholder host, so executing it would route a real request through a
# non-existent proxy and fail.
## Not run:
set_imf_proxy(
  "http://proxy.example.com",
  port = 8080,
```

```
    username = "proxy_user",  
    password = "proxy_password"  
)
```

```
list_datasets("IMF.STA")  
clear_imf_proxy()
```

```
## End(Not run)
```

Index

`clear_imf_proxy (set_imf_proxy)`, [10](#)

`get_data`, [2](#)

`get_data()`, [5](#), [6](#)

`httr2::req_proxy()`, [10](#)

`list_datasets`, [3](#)

`list_dimension_values`, [4](#)

`list_dimensions`, [4](#)

`sdmx_api`, [5](#)

`sdmx_availability`, [5](#)

`sdmx_data`, [6](#)

`sdmx_metadata`, [8](#)

`sdmx_structure`, [9](#)

`set_imf_proxy`, [10](#)