



SDMX CENTRAL

User Guide

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IMF SDMX CENTRAL

Contents

1	Document Overview	2
2	Convert Data	3
2.1	Convert Datasets from Excel or SDMX Files.....	3
2.2	Dataset Conversion Report	4
2.3	Datasets from URL	6
3	Excel Data Format	7
4	Generating an Excel Template	11
5	Dataset Authoring using Excel Plugin	14
6	Registering Data	18
7	Subscribing As A Service	20
7.1	RSS Feed	20
7.2	Notifications via Email or POST	20

1 Document Overview

This user guide aims to help IMF member countries to create and maintain the machine-readable (SDMX) component of their National Summary Data Page (NSDP) using SDMX Central, a cloud-based tool. SDMX Central provides member countries the ability to convert data in excel into SDMX format. In addition, member countries can register their SDMX services, if available.

The National Summary Data Page ([NSDP](#)) is a “data portal” for countries participating in SDDS Plus, SDDS, and e-GDDS. The NSDPs allow users to access country data, view metadata, or browse links to online datasets for all available categories on one portal. For countries participating in e-GDDS and SDDS Plus, the NSDP enables the automatic exchange and sharing of statistical data and metadata in SDMX, a standard for machine-to-machine data transmission.

Note for users: Users of SDMX Central that have been provided with an excel file template at the time of creation of their NSDP should begin reading this Guide from the section “Convert Data.” If this is not the case, please begin with section “*3 Generating an Excel Template.” The Convert Data section describes the process of converting data from Excel or SDMX formats into SDMX Structure Specific v2.1 format.

This document is made up of the following sections:

1. **Convert Data.** This section includes details on the compliance checks performed by SDMX Central on the dataset before converting it into an SDMX file.
2. **Excel Data Format.** This section describes how Excel datasets should be formatted for SDMX Central to be able to process the file for conversion.
3. ***Generating an Excel Template.** This section describes the process for how to get SDMX Central to generate an Excel file which can be used as a starting template for dataset authoring.
4. **Dataset Authoring using Excel Plugin.** This section describes how to use the Excel plugin provided by SDMX Central to enable dataset creation from within Excel.
5. **Registering Data.** This section describes how to register datasets with the SDMX Central service (*SDDS Plus and SDDS only*).
6. **Subscribing as a Service.** This section describes how to subscribe to both Data Registration events and Structure changes in SDMX Central.

2 Convert Data

2.1 Convert Datasets from Excel or SDMX Files

Figure 1 showing the convert page of sdmxcentral.imf.org

SDMX Central provides convert data functionality from the following URL:

<https://sdmxcentral.imf.org/data/load/data-load.html>

This page can be accessed by clicking the Convert button on the home page of SDMX Central, or from the Data→Load Data menu item on the left-hand menu bar.

The Convert facility converts input datasets into SDMX Version 2.1 Structure Specific Data. Input datasets can be in SDMX format, and Excel format. The accepted Excel format is described later in this document.

A 'Quick Convert' option is available, and can be used by simply dragging and dropping a dataset into the drop zone to the right of the Load Data form (the grey box on shown in the image above). However, for this feature to work, the file must be saved on your local drive. Alternatively, from the data conversion selection fields, click the '**Choose a file**' text option in the DATA section, which will open up a file browser enabling file selection.

Whether, drag/drop or file selection, the source file will be analysed for conversion. If the data file contains information about the source Data Structure Definition (DSD) or Dataflow, SDMX Central will automatically convert the data into SDMX format and it will be downloaded in SDMX format into your downloads folder. If the data file does not contain information about the DSD, or if it references an unknown DSD, additional pop-up boxes will ask for this information to be provided, as shown in the image below.

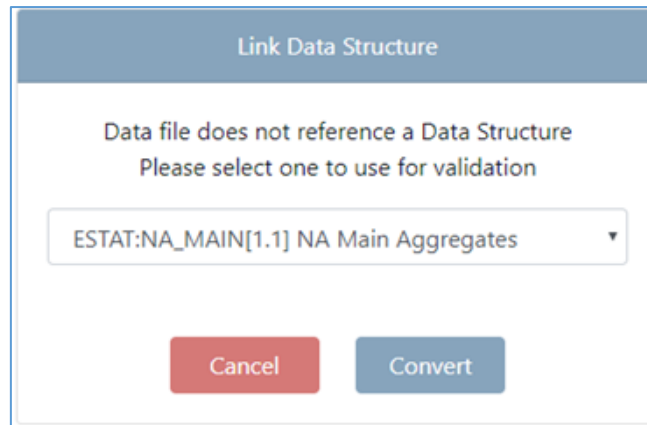


Figure 2 showing an uploaded file, which has been analysed, SDMX Central requires the DSD selection before it can proceed with conversion.

To continue with the conversion, select the Data Structure (DSD) to which the dataset conforms, and then click convert. On successful conversion, the data file will be downloaded to your downloads folder in SDMX format. To convert another dataset, drag and drop another file into the drop zone, or refresh the page to bring back the **Choose a file** link.

A quick summary pop-up box is surfaced, see image below, that highlights the outcomes of the conversion. If present, additional warnings and instructions are surfaced in the pop-up box to alert users of potential issues in the conversion. A dataset can be converted even if the dataset contains invalid content. However, a file can fail conversion if certain rules are not present. SDMX Central provides a detailed report on the checks that were performed on the dataset. To review these checks in detail, please click on '**View Conversion Report**', this will show a breakdown of test results as described in the next section.

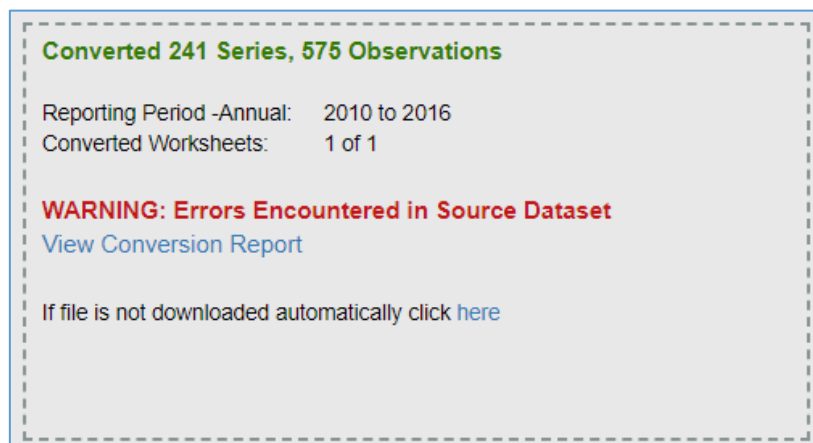


Figure 3 showing the drop zone text on successful data conversion, but with errors in the source data

2.2 Dataset Conversion Report

The dataset detail reports, shown below, lists all relevant information acquired during conversion. Attention should be paid to the test results at the bottom of the page. Errors are limited to the first 60 per category.

Dataset Details

Filename: BOPData.xml

File Format: Structure Specific (Compact) v2.1

Dataset: 1

Data Structure: IMF:ECOFIN_DSD(1.0) - ECOFIN Data Structure Definition

Data Flow: IMF:BOP_BPM6(1.0) - Balance of Payments -- BPM6 (change)

Provision Agreement: Select Provision Agreement (optional)

Data Provider: -

Number of Series: 24

Number of Observations: 2024

Number of Groups: 0

Action: Load Data Re-Verify Data View Data Generate Constraints Convert Data

Test Results Note: errors are limited to 30 errors per error category

- Semantically Compliant ✓
- Duplicate Observations ✓
- Mandatory Attributes ✓
- Time Period Format ✓
- Valid Calculations ✓
- Valid Constraint ✓
- Valid Representation ✓

Callout boxes:

- Select Dataflow and/or Provision Agreement followed by Re-Verify to perform additional consistency checks
- Conversion to SDMX can be performed by clicking Convert
- Verification checks

Figure 4 showing the summary of checks that were performed on the data file

SDMX Central performs the following checks:

Semantically Compliant: Ensures the underlying dataset is correct with regards to the specification, for SDMX this includes ensuring the XML namespaces are correct and the Header is compliant with the specification. For Excel this includes ensuring the Dates are reported in the worksheet columns ascending order. This is the only error category which is specific to the data format, all other errors are based on the content of the message as oppose to the file format.

Duplicate Observations: Ensures the data file does not contain any duplications which contradict each other.

Mandatory Attributes Present: Ensures all Attributes, as defined in the DSD, are reported if they are marked as Mandatory.

Time Period Format: Ensures all reported time periods conform to the reported Frequency, the following table shows the expected date format for each frequency of data.

Frequency	Format	Example
Annual	YYYY	2010
Daily	YYYY-MM-DD	2010-01-01
Date Time	YYYY-MM-DD-Thh:mm:ss	2010-01T20:22:00
Monthly	YYYY-MM	2010-01
Quarterly	YYYY-Qn	2010-Q1
Semester	YYYY-Sn	2010-S1
Trimester	YYYY-Tn	2010-T1

Figure 5 showing Frequency vs Date format

Missing Observations: Ensures that the series reports an observation value for the time-period that lies within the time range that the series is reporting data for. For example, if the first Observation value for a series is reported for 2001 and the last is reported for 2004, then this test that observations were reported for 2001, 2002, 2003, and 2004

Valid Calculations: If any additional rules exist to perform mathematical calculations to ensure compliance, then these tests are run, and any failures are reported against this category.

Valid Constraint: A Dimension or Attribute in the dataset may report a value which is valid with regards to the DSD, but has been restricted for the reporting entity in the Reporting Constraints. For example, the Reporting Country **UK** is valid in the country codelist, but the data provider **FR** will not be allowed to report this data. These are additional checks which are performed when a Dataflow and/or Provision Agreement are selected.

Valid Representation: Ensures the reported values for Dimensions, Attributes, and Observation values comply with the DSD. For example, if a Dimension provides a list of valid code Ids, and the reported value is not contained in this list then it will fail this test.

2.3 Convert Datasets from URL

To convert a dataset from a URL navigate to the Load data page.

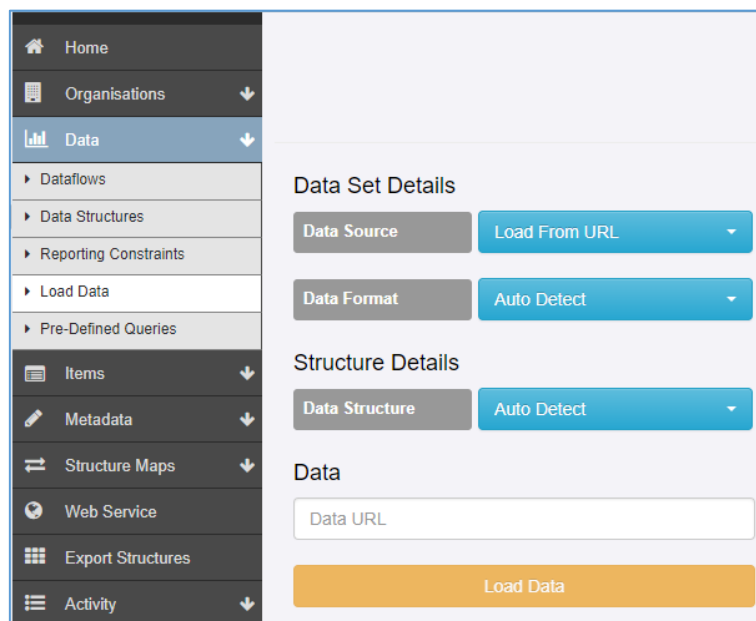


Figure 6 showing the Load Data page

Select Load from URL as the Data Source, and then type in or copy paste the URL into the text box provided. Click Load Data to proceed to the convert test results page, from where the Dataset can be converted into SDMX format (see Figure 4 above).

3 Excel Data Format

The format of a data file in Excel is expected to follow the following conventions:

#1 Dimension, Attributes and Time Periods appear as header columns

	A	B	C	D	E	F	G	H	I
1	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2001	2002	2003	2004
2									

Figure 7 demonstrating rule #1 – Dimensions, Attributes, and Time Periods as Column Headers

#2 If any Dimensions or Attributes have fixed values for the whole dataset, these may be placed in a Header section. Shown below are fixed values for DATA_DOMAIN, REF_AREA and COUNTERPART_AREA

	A	B	C	D	E	F	G	H	I
1	DATA_DOMAIN	BOP6							
2	REF_AREA	JP							
3	COUNTERPART_AREA	W1							
4									
5	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2001	2002	2003	2004
6									

Figure 8 demonstrating rule #2 providing fixed Dimension and Attribute values for the dataset

#3 Multiple Frequencies are supported in the same worksheet (Annual and Monthly for example). The frequency of the reported values is derived from the date formats.

Note: When using SDMX Central to derive the Frequency from the Time Period column, use the highest frequency reported in the FREQ Dimension.

1														
2	DATASTRUCTURE	IMF:ECOFIN_DSD(1.0)		Datastructure										
3	DATASTRUCTURE_NAME	ECOFIN Data Structure Definition		Datastructure name										
4	DATA_DOMAIN	CPI		Dataset										
5	REF_AREA	SB		Country										
6	COUNTERPART_AREA	_Z		Counterpart area										
7	UNIT_MULT	0		Scale = Unit										
8	FREQ	M												
9	COMMENT	Published		Observation status										
10														
11	Country code	Descriptor	Indicator	Units	2017-09	2017-10	2017-11	2017-12	2018-01	2018-02	2001	2002	2003	2004
12		Consumer Price Index												
13	PCPI_I_X	Consumer Price Index, All Items	PCPI_I_X	Index	589.9	590.3	590.1	594.6	604.9	617.5	568.6	584.1	585.6	608.8
14	PCPI_CP_01_I_X	Food and non-alcoholic beverages	PCPI_CP_01_I_X	Index	544.7	539.8	535.6	538.8	544.4	572.2	527.4	538.5	540.1	591.7
15	PCPI_CP_02_I_X	Alcoholic Beverages, Tobacco, and Narcotics	PCPI_CP_02_I_X	Index	952.2	963.5	986.1	1011.8	1134.6	1127.8	920.8	925.5	934.5	936.5
16	PCPI_CP_03_I_X	Clothing and footwear	PCPI_CP_03_I_X	Index	234.6	234.6	234.6	234.2	234.5	234.5	227.7	227.7	227.7	227.7
17	PCPI_CP_04_I_X	Housing, Water, Electricity, Gas and Other Fuels	PCPI_CP_04_I_X	Index	933.3	948.7	951.7	952.3	940.6	943.4	877.2	943.4	943.6	948.3
18	PCPI_CP_05_I_X	Furnishings, household equipment and routine househ	PCPI_CP_05_I_X	Index	477	475.4	475.6	477.3	474.3	475.5	481.9	487	487.2	487.2

Figure 9 showing multiple frequencies being reported

When the data is read, the value for the dimension **FREQ** will be derived from the corresponding date format. The following rules are used:

FREQ	Frequency	Format	Example
A	Annual	YYYY	2010
M	Monthly	YYYY-MM	2010-01
D	Daily	YYYY-MM-DD	2010-01-01
I	Date Time	YYYY-MM-DD- Thh:mm:ss	2010-01T20:22:00
Q	Quarterly	YYYY-Qn	2010-Q1
S	Semester	YYYY-Sn	2010-S1
T	Trimester	YYYY-Tn	2010-T1

Table 1 showing derived **FREQ** code Id against the format of the date String in the date column

#4 It is permissible to have multiple worksheets with data. This mechanism can be used to report different frequencies of data per worksheet. The Header section of each worksheet must be consistent in terms of layout, as shown in the image below.

<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr><td>1</td><td>Dataflow</td><td>IMF:BOP_BPM6(1.0)</td></tr> <tr><td>2</td><td>DataStructure</td><td>IMF:ECOFIN_DSD(1.0)</td></tr> <tr><td>3</td><td>Dataset Action</td><td>Information</td></tr> <tr><td>4</td><td>DATA_DOMAIN</td><td>BOP6</td></tr> <tr><td>5</td><td>REF_AREA</td><td>XX</td></tr> <tr><td>6</td><td>COUNTERPART_AREA</td><td>W1</td></tr> <tr><td>7</td><td>FREQ</td><td>Q</td></tr> <tr><td>8</td><td>UNIT_MULT</td><td>6</td></tr> <tr><td>9</td><td>TIME_FORMAT</td><td>P3M</td></tr> <tr><td>10</td><td>OBS_STATUS</td><td>A</td></tr> <tr><td>11</td><td></td><td></td></tr> <tr><td>12</td><td>INDICATOR</td><td>1995-Q1</td></tr> <tr><td>13</td><td>BCA_BP6_EUR</td><td>11</td></tr> </tbody> </table> <p>Figure 10 showing worksheet 1 with Quarterly Data</p>			A	B	1	Dataflow	IMF:BOP_BPM6(1.0)	2	DataStructure	IMF:ECOFIN_DSD(1.0)	3	Dataset Action	Information	4	DATA_DOMAIN	BOP6	5	REF_AREA	XX	6	COUNTERPART_AREA	W1	7	FREQ	Q	8	UNIT_MULT	6	9	TIME_FORMAT	P3M	10	OBS_STATUS	A	11			12	INDICATOR	1995-Q1	13	BCA_BP6_EUR	11	<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr><td>1</td><td>Dataflow</td><td>IMF:BOP_BPM6(1.0)</td></tr> <tr><td>2</td><td>DataStructure</td><td>IMF:ECOFIN_DSD(1.0)</td></tr> <tr><td>3</td><td>Dataset Action</td><td>Information</td></tr> <tr><td>4</td><td>DATA_DOMAIN</td><td>BOP6</td></tr> <tr><td>5</td><td>REF_AREA</td><td>XX</td></tr> <tr><td>6</td><td>COUNTERPART_AREA</td><td>W1</td></tr> <tr><td>7</td><td>FREQ</td><td>A</td></tr> <tr><td>8</td><td>UNIT_MULT</td><td>6</td></tr> <tr><td>9</td><td>TIME_FORMAT</td><td>P3M</td></tr> <tr><td>10</td><td>OBS_STATUS</td><td>A</td></tr> <tr><td>11</td><td></td><td></td></tr> <tr><td>12</td><td>INDICATOR</td><td>1995</td></tr> <tr><td>13</td><td>BCA_BP6_EUR</td><td>99</td></tr> </tbody> </table> <p>Figure 11 showing worksheet 2 with Annual Data</p>			A	B	1	Dataflow	IMF:BOP_BPM6(1.0)	2	DataStructure	IMF:ECOFIN_DSD(1.0)	3	Dataset Action	Information	4	DATA_DOMAIN	BOP6	5	REF_AREA	XX	6	COUNTERPART_AREA	W1	7	FREQ	A	8	UNIT_MULT	6	9	TIME_FORMAT	P3M	10	OBS_STATUS	A	11			12	INDICATOR	1995	13	BCA_BP6_EUR	99
	A	B																																																																																					
1	Dataflow	IMF:BOP_BPM6(1.0)																																																																																					
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12	INDICATOR	1995																																																																																					
13	BCA_BP6_EUR	99																																																																																					

#5 Observation Attributes may be reported in the header section, which applies this as a default value for all observations.

	A	B	C	D	E	F	G	H	I
1	DATA_DOMAIN	BOP6							
2	REF_AREA	JP							
3	COUNTERPART_AREA	W1							
4	OBS_STATUS	A							
5									
6	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2001	2002	2003	2004
7									

Figure 12 demonstrating rule #3 applying a default value for an observation attribute

#6 The header section should be separated from the data section by a blank row

	A	B	C	D	E	F	G	H	I
1	DATA_DOMAIN	BOP6							
2	REF_AREA	JP							
3	COUNTERPART_AREA	W1							
4									
5	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2001	2002	2003	2004
6									

Figure 13 a single blank row separates the header and data sections

#7 Reported values appear in the data section

	A	B	C	D	E	F	G	H	I
1	DATA_DOMAIN	BOP6							
2	REF_AREA	JP							
3	COUNTERPART_AREA	W1							
4	OBS_STATUS	A							
5									
6	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2001	2002	2003	2004
7	BCA_BP6_XDC	A		0	P1Y	12.2	22.2	32.2	42.2
8	BXCA_BP6_XDC	A		0	P1Y	12.3		32.3	42.3

Figure 14 demonstrating reported values for Dimensions, Attributes and Time Periods

#8 Dimension values are mandatory. If a value is not reported, this will result in an error.

	A	B	C	D	E	F	G	H	I
1	DATA_DOMAIN	BOP6							
2	REF_AREA	JP							
3	COUNTERPART_AREA	W1							
4	OBS_STATUS	A							
5									
6	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2001	2002	2003	2004
7	BCA_BP6_XDC	A		0	P1Y	12.2	22.2	32.2	42.2
8	BXCA_BP6_XDC					12.3		32.3	42.3

Figure 15 omitting Dimension value FREQ will result in error

#9 Extra rows and columns in the spreadsheet may be added to improve the readability for the user. Blank rows are permitted but with certain restrictions. Blank rows may appear before the header section and between the header section and data section. However, a blank row may not exist within the header section. If a blank row is encountered in the header section, then this is assumed to indicate the end of the header section and this may cause your spreadsheet to be read incorrectly.

#11 Blank columns indicate that no further information should be read from that row. IMF SDMX Central will read from the first column of information in a row until it reaches a blank cell (unless it's a data row). The image below shows a spreadsheet where column H is blank and row 9 is blank. This would mean that in the data section only data for 2001 and 2002 are read (columns F and G). Columns I and J will not be read. However, all the 3 series (rows 7,8 and 10) will be read.

	A	B	C	D	E	F	G	H	I	J
1	DATA_DOMAIN	BOP6								
2	REF_AREA	JP								
3	COUNTERPART_AREA	W1								
4	OBS_STATUS	A								
5										
6	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2001	2002		2003	2004
7	BCA_BP6_XDC	A		0	P1Y	12.2	22.2		32.2	42.2
8	BXCA_BP6_XDC					12.3			32.3	42.3
9										
10	BEFD_BP6_XDC	A		0	P1Y	12.4	22.4		32.4	42.4

Figure 16 demonstrating the effect blank rows and columns have on the processing of data

#12 It is permissible to have columns in the data section that are not dimensions, attributes or data but may contain additional information for the reader of the spreadsheet. The image below shows a spreadsheet where column F is for additional notes for each data row. The presence of this column will not prevent the data (in columns G to J) from being read even though the data rows themselves do not have a value for the row.

	A	B	C	D	E	F	G	H	I	J
1	DATA_DOMAIN	BOP6								
2	REF_AREA	JP								
3	COUNTERPART_AREA	W1								
4	OBS_STATUS	A								
5										
6	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	Additional Notes	2001	2002	2003	2004
7	BCA_BP6_XDC	A		0	P1Y		12.2	22.2	32.2	42.2
8	BXCA_BP6_XDC						12.3		32.3	42.3
9	BEFD_BP6_XDC	A		0	P1Y		12.4	22.4	32.4	42.4

Figure 17 demonstrating a column (column F) that is not data, dimension or attribute but will not prevent data processing

#13 It is permissible to have entire rows in the data section that are there to indicate what the data represents. This has the restriction that the text in these rows must not be in a column that indicates a Dimension, Attribute or Value. The image below shows row 7 being used to explain what rows 8 and 9 represent. The text for row 7 is in column A, which is now used as additional information.

	A	B	C	D	E	F	G	H	I	J	K
1	DATA_DOMAIN	BOP6									
2	REF_AREA	JP									
3	COUNTERPART_AREA	W1									
4	OBS_STATUS	A									
5											
6	Comment	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	Additional Notes	2001	2002	2003	2004
7	<i>Balance of Payments, Current Account, Total</i>										
8	Net, National Currency	BCA_BP6_XDC	A			0 P1Y		12.2	22.2	32.2	42.2
9	Credit, National Currency	BXCA_BP6_XDC									
10	<i>Balance of Payments, Exceptional financing</i>										
11	Direct investment, National Currency	BEFD_BP6_XDC	A			0 P1Y		12.4	22.4	32.4	42.4
12											
13											

Figure 18 demonstrating rows in the data area to aid readability

#14 It is permissible to have rows that do not report any observations. In the image above, row 10 reports no values (cells H10, I10, J10 and K10 are all blank).

4 Generating an Excel Template

To assist in the generation of a valid Excel data file, IMF SDMX Central provides a mechanism to generate an Excel Template. The Excel Template is an Excel file with prefilled cells based on the selected Dataflow and Reporting Period. The second approach to authoring data makes use of a plugin library for Microsoft Excel to facilitate the construction of a dataset, by generating the column headers, and then providing an author helper which can be used to choose from a list of predefined values when filling in each column.

To create an Excel Template, click on the **Generate Dataset** button from the left menu, as shown in the image below.

Figure 19 showing the generate dataset link

To create an Excel Template, fill in the form, which includes the Dataflow/Provision Agreement, the frequency of data, and the data from and to dates. If logged into SDMX Central, the list of available datasets will be based on those that your organisation has been configured to submit.

On clicking Create Template, an Excel file will be generated and downloaded to the user's local machine. The Excel template will contain all the required columns prefilled based on the information completed in the form.

	A	B	C	D	E
1	DATA_DOMAIN	EXD			
2	REF_AREA	JP			
3	COUNTERPART_AREA	_Z			
4	FREQ	Q			
5	UNIT_MULT				
6	OBS_STATUS				
7					
8	INDICATOR	2014-Q1	2014-Q2	2014-Q3	2014-Q4
9					
10					

Figure 20 – showing a generated Excel template

The generated template may contain a header section, this section (cells A1:A6, B1:B6 in the image above) contains any dimensions which contain only one value for the entire dataset. This will occur if the IMF has configured any reporting restrictions on the Dataflow, or Data Provider/Provision Agreement. In the image above, a number of Dimensions contain only one allowable value, and have therefore been pre-populated. The additional header cells (UNIT_MULT and OBS_STATS) which do not contain a value, are placeholders for Observation level attributes. These placeholders allow a default value to be set for all observations in the entire dataset.

Following the header section is the data section. This includes columns which have been created for all the additional Dimensions and Attributes, and time periods. In the image above, Indicator is the only remaining Dimension which does not have a fixed value. In the above example, the Time periods iterate over a quarterly frequency.

An example of a completed dataset is shown below.

	A	B	C	D
1	DATA_DOMAIN	EXD		
2	REF_AREA	JP		
3	COUNTERPART_AREA	_Z		
4	FREQ	Q		
5	UNIT_MULT	9		
6	OBS_STATUS	A		
7				
8	INDICATOR	2014-Q1	2014-Q2	2014-Q3
9	DG_GR_BP6_XDC	92,098	94,893	98,900
10	DG_GRS_BP6_XDC	50,625	52,330	49,869
11	DG_GRSD_BP6_XDC	50,323	52,036	49,549

Figure 21 showing an Excel Data Template, filled in with the series and observation data

IMF SDMX Central can be used to lookup allowable content for each of the remaining columns. This can be achieved by navigating to the Dataflows menu in the web interface.

	All	Dataflow Id	Version	Name	Data Providers	Series
Dataflows		IMF	01R	1.0	Exchange Rates and International Reserves (01R) for Collection	0
Data Structures		IMF	1DI	1.0	Coordinated Direct Investment Survey (CDIS) for Collection	5
Provision Agreements		IMF	1PI	1.0	Coordinated Portfolio Investment Survey (CPIS) for Collection	4
Reporting Constraints						

Figure 22 showing the Dataflow menu in the web interface

On selecting a Dataflow, click the 'View Dataflow' button to show its details.

Viewing: Coordinated Portfolio Investment Survey (CPIS) for Collection [1.0]

Data Providers	N/A	Data Type: IMF:CL_REF_AREA(1.0)
Dimensions	N/A	Enumeration Restrictions: No Additional Restrictions
[DATA_DOMAIN] Data Domain	Germany Deutsche Bundesbank France Banque de France Bank of Japan	
[REF_AREA] Reference Country or	Netherlands Nederlandse Bank	
[INDICATOR] Economic Indicator		
[COUNTERPART_AREA] Counterpart Area		
[FREQ] Frequency		
[TIME_PERIOD] Time Period		
Primary Measure		
[OBS_VALUE] Observation		
Dataset Attributes		
[COMMENT] Comment		

Id	Name
1A	International organisations
1B	UN organisations
1C	IMF (International Monetary Fund)
1D	World Trade Organisation
1E	IBRD (International Bank for Reconstruction and Development)
1F	IDA (International Development Association)

Figure 23 showing the details for a Dataflow

The Dataflow is displayed as a collection of Dimensions, Primary Measure and Attributes. On clicking each of these the allowable content, shown on the right of the page is updated to reflect the selected component. The allowable content describes all the values that can be reported for the component. An additional selection can be made at the top of the page, to refine which Data Provider the content is being displayed for. Changing the Data Provider may result in the allowable content to be restricted further. Only Data Providers who have Provision Agreements configured for them are shown in the list.

Once a data file has been authored it can be loaded into the web Interface for conversion to SDMX format.

5 Dataset Authoring using Excel Plugin

SDMX Central provides a link to download a plugin for Microsoft Excel to simplify the process of authoring a dataset. This plugin is called FusionXL, and can be downloaded from the Excel Services window (see **Error! Reference source not found.**).

Alternatively, the following URL can be used to download.

<https://sdmxcentral.imf.org/FusionXL/FusionXL.zip>

Once downloaded, follow the set-up guide. Note, no installation is required; the setup simply involves placing the FusionXL file into a specific directory for Excel to pick up.

Once the plugin is enabled, there will be an additional tab in Excel with the label FusionXL.

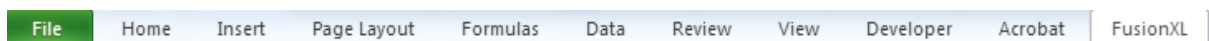


Figure 24 showing the FusionXL tab in Microsoft Excel

Under the FusionXL tab is a 'Setup Connections' button, this must be clicked to establish a connection to IMF SDMX Central.



Figure 25 showing the Setup Connection button on the Excel Ribbon (under the FusionXL Tab)

The URL to enter for SDMX Central is:

<https://sdmxcentral.imf.org>

Any alias can be used for this connection. This is shown in the image below.

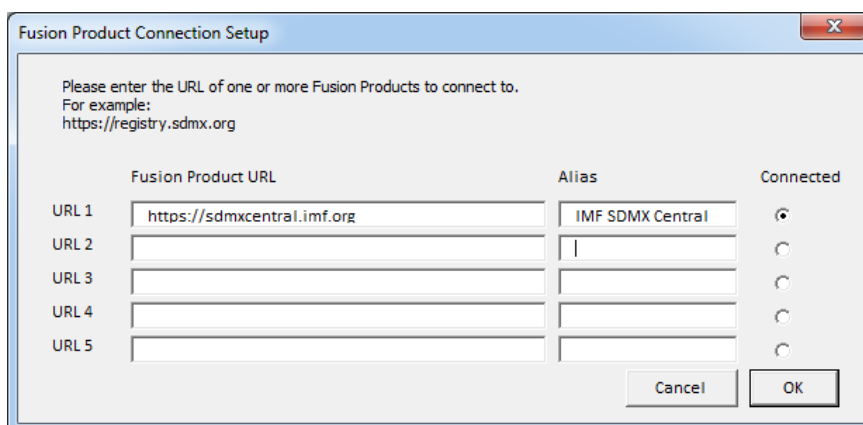


Figure 26 showing the connection to IMF SDMX Central

Once a connection has been established, select 'Data Author, Load, Validate' in the Connection menu

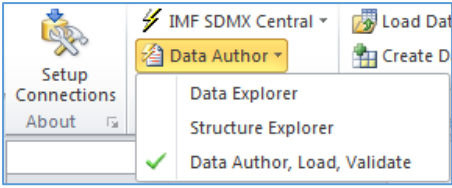


Figure 27 showing Data Author being selected in the Connection Menu

The Excel Ribbon is then updated to show the Data Author options. Note, before Data can be loaded or created, the user must first login by clicking on the Login button. The Login credentials are the same as those used to login to the web interface of IMF SDMX Central.

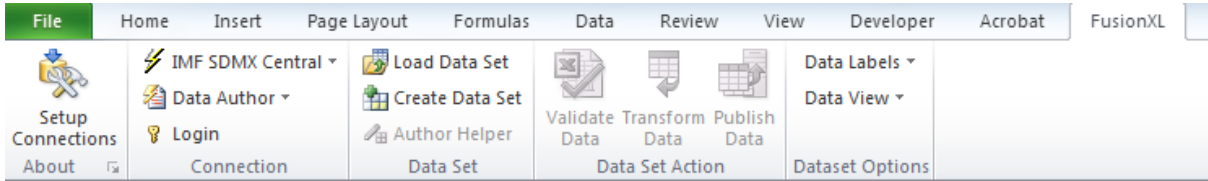


Figure 28 showing the data author options

FusionXL can be used to author new datasets, or to update existing datasets, by using the 'Load Data Set' option. SDMX, CSV, or XLSX files are all supported formats for data load.

Create Data Set

On clicking the Create Data Set button, a form is presented to the user, providing a dropdown list of all the Dataflows the user has been configured to provide data for.

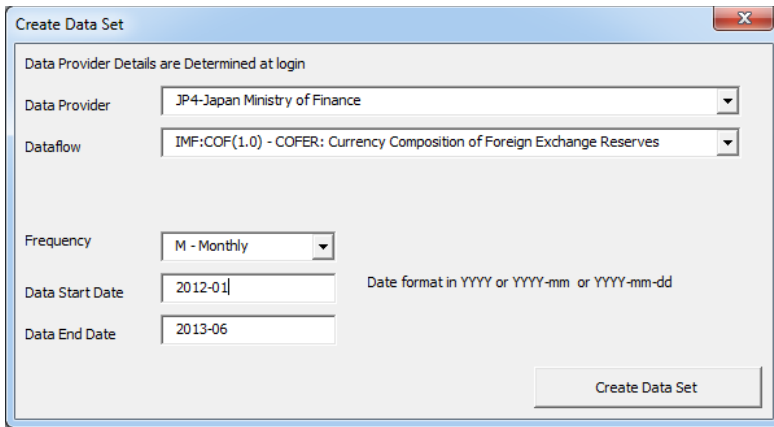


Figure 29 showing the Create Data Set form

On clicking Create Data Set, the Excel worksheet is updated to contain the Header and Data sections relevant to the selected Dataflow and time range. In addition, the Data Set Author Helper is opened.

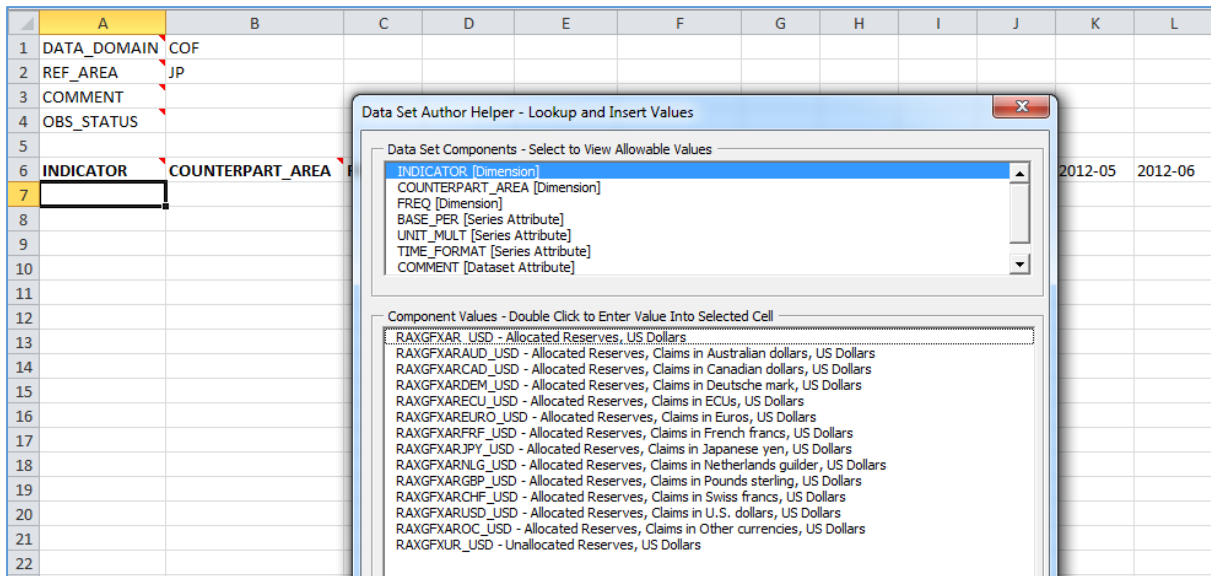


Figure 30 showing the pre-populated worksheet, with the Data Set Author Helper

The Dataset Author Helper can be used to lookup values for each column, on double clicking a value, the selected cell in the worksheet will be populated with the relevant Id. When the Data Set Component is selected in the helper, the relevant cell in the worksheet is automatically put into focus.

Once the dataset has been authored, FusionXL provides the means to validate, transform, and publish the data.

Load Data Set

A dataset can be loaded by clicking Load Dataset. IMF SDMX Central will try to determine which Dataflow the dataset is for, if it cannot be determined, then the Load Dataset modal will ask for additional details about the Data Provider and Dataflow

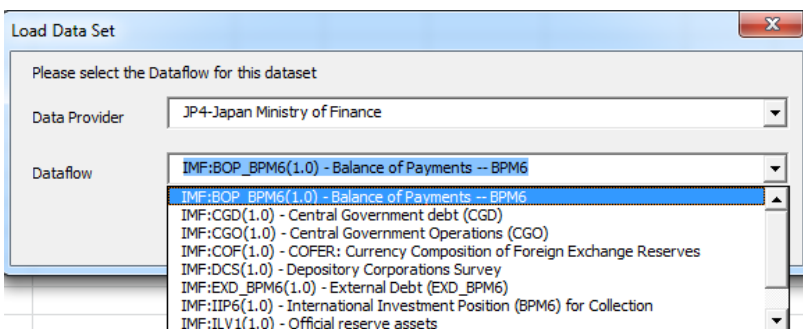


Figure 31 showing the Load Data Set modal, asking for additional details for the loaded dataset

Once the details have been provided, IMF SDMX Central will then reformat the data to populate the Excel worksheet. The Data Set Author Helper is automatically opened to assist in further modification of the dataset.

	A	B	C	D	E	F	G	H	I	J	K	L
1	DATA_DOMAIN	CGO										
2	REF_AREA	JP										
3	COUNTERPART_Z	Z										
4	COMMENT											
5	OBS_STATUS											
6												
7	Series Key	INDICATOR	FREQ	BASE_PER	UNIT_MULT	TIME_FORMAT	2014-Q1	2014-Q2	2014-Q3	2014-Q4	2015-Q1	2015-Q2
8	EXD:JP:DG_GR	DG GR BP6	Q									108,292
9	EXD:JP:DG_GR	DG_GRS BP6	Q									54,091
10	EXD:JP:DG_GR	DG_GRSD BP	Q									53,844
11	EXD:JP:DG_GR	DG_GRSL BP	Q									0
12	EXD:JP:DG_GR	DG_GRSO BP	Q									247
13	EXD:JP:DG_GRI	DG_GRL BP6	Q									54,200
14	EXD:JP:DG_GRI	DG_GRLS BP	Q									2,112
15	EXD:JP:DG_GRI	DG_GRLD BP	Q									52,088
16	EXD:JP:DG_GRI	DG_GRLD BP	Q									0
17	EXD:JP:DG_GRI	DG_GRLO BP	Q									0
18	EXD:JP:DCB_Gf	DCB_GR BP6	Q									5,293
19	EXD:JP:DCB_Gf	DCB_GRS BP	Q									5,293
20	EXD:JP:DCB_Gf	DCB_GRSL Bf	Q									0
21	EXD:JP:DCB_Gf	DCB_GRSC Bf	Q									5,293
22	EXD:JP:DODC_	DODC_GR BP	Q									139,070

Data Set Author Helper - Lookup and Insert Values

Data Set Components - Select to View Allowable Values

- INDICATOR [Dimension]
- FREQ [Dimension]
- BASE_PER [Series Attribute]
- UNIT_MULT [Series Attribute]
- TIME_FORMAT [Series Attribute]
- COMMENT [Dataset Attribute]
- OBS_STATUS [Observation Attribute]

Values Truncated to 300, use filter to filter values

Filter

- GBR_G01_AC_USD - Fiscal, Budgetary Central Government, Revenue, 2001 Manual, Accrual,.....
- GBRT_G01_AC_USD - Fiscal, Budgetary Central Government, Revenue, Tax, 2001 Manual, Accr...
- GBRTI_G01_AC_USD - Fiscal, Budgetary Central Government, Revenue, Tax, Income and Profit...
- GBRTPAY_G01_AC_USD - Fiscal, Budgetary Central Government, Revenue, Tax, Payroll, 2001 Man...
- GBRTP_G01_AC_USD - Fiscal, Budgetary Central Government, Revenue, Tax, Property, 2001 Ma...

Figure 32 showing the loaded dataset

Once the dataset has been modified, FusionXL provides the means to validate, convert, and publish the data.

Setup Connections | About | IMF SDMX Central | Data Author | Logout jp4 | Connection | Load Data Set | Create Data Set | Author Helper | Data Set | Validate Data | Transform Data | Publish Data | Data Set Action

6 Registering Data

To register data, click on the Data Registration button on the home page. If logged in, then navigate to the home page, this will show the user's data dashboard.

The Data Dashboard shows all the Provision Agreements the Data Provider has been configured to provide data for.

The screenshot shows a dashboard titled "Welcome Demo User" with the subtitle "Showing Data Dashboard for JP4: Japan Ministry of Finance". It features a table with the following data:

Provision Id	Provision Name	Series	Last Updated
JP_EXD	Japan External Debt	39	2016-10-24T16:38:47
JP_IIP	Japan International Investment Position	14	2016-10-24T16:25:29
JP_ILV2	Japan Template on International Reserves and Foreign Currency Liquidity	311	2016-10-24T16:08:45
JP_DCS_E	Japan Depository Corporations Survey (External)	1	2016-10-24T16:06:13
JP_MET	Japan Merchandise Trade	2	2016-10-24T16:03:34
JP_COF	Japan Currency Composition of Foreign Exchange Reserves	-	-
JP_ILV1	Japan Official Reserve Assets	-	-

Below the table, there are filter options (both set to "No Filter") and a "Series" column. A message indicates "Showing 3 to 10 of 10 entries 1 row selected". The "Actions" section for the selected row shows "Register Data" with a "New Registration" button. The "Details" section shows "Data Provider JP4 has been configured to supply data for this Dataflow as a URL referencing an external data source." Below this, "Provision Details" are shown, including URNs and descriptions for the selected provision.

Figure 33 showing the Data Dashboard

If the Data Provider has been configured to register a URL for the selected Dataflow, then the available Action will be 'New Registration'. This is shown in Figure 33 showing the Data Dashboard. On clicking New Registration, the Register Data Source modal is opened. This form expects one value to be provided, the URL of the dataset to be registered.

The "Register Data Source" modal form has a title bar with a close button (X). It contains a "Data Source Type" dropdown menu currently set to "File URL". Below this, there is explanatory text: "A file URL expects a URL to resolves to a web location of a SDMX dataset." and a note: "Note: If the URL results in an HTTP redirect (HTTP status codes 3xx) it will not be followed and the Registration will fail." A text input field contains the URL "http://www.e-stat.go.jp/data/nsdp/sdmx/MET_00M.xml". At the bottom, there are "Close" and "Register Data Source" buttons.

Figure 34 showing the Register Data Source modal

On clicking Register Data Source, IMF SDMX Central will query the URL to validate the data file. On successful validation, the Data at the URL will be made available via IMF SDMX Central. The Data Dashboard will be updated to reflect the new Data Registration by providing a Series count and showing a last-updated timestamp of when the data registration event took place.

Provision Id	Provision Name	Series	Last Updated
JP_BOP	Japan Balance of Payments	21	2016-10-24T16:42:12
JP_CGD	Japan Central Government Debt	3	2016-10-24T16:41:47
JP_EXD	Japan External Debt	39	2016-10-24T16:38:47
JP_IIP	Japan International Investment Position	14	2016-10-24T16:25:29
JP_ILV2	Japan Template on International Reserves and Foreign Currency Liquidity	311	2016-10-24T16:08:45
JP_DCS_E	Japan Depository Corporations Survey (External)	1	2016-10-24T16:06:13
JP_MET	Japan Merchandise Trade	2	2016-10-24T16:03:34

No Filter No Filter Series Last Updated

Showing 1 to 9 of 10 entries 1 row selected

Actions	Details	
Register Data	Data Provider JP4 has been configured to supply data for this Dataflow as a URL referencing an external data source.	Change URL
Re-Register	If the data has changed at the URL location, a re-index will re-query the data to update the IMF SDMX Central indexes, update the Data Registration details, and notify subscribed parties of the data change	Re-Register
View Data	View the series provided by you for this Dataflow. To view the data in the full context of the Dataflow, please Browse the Data.	View Data
Automate Registration	Generate SDMX Auto Registration document. The exported file can be used in for future submissions directly to the IMF SDMX Central SDMX web service which will result in the Fusion Registry re-indexing the URL.	Automate Registration Documentation
De-Register URL	Deleting the Data Registration will remove the link from the IMF SDMX Central to your data URL, this will remove any indexes and your data will not be visible or retrievable from the IMF SDMX Central User Interface or web services. Note: This action will notify any subscribed users.	De-Register

Registration Details	
Registration Id	188d5f53ef1159947aefd63dfb16f3f0 📄
Data URL	http://www.e-stat.go.jp/data/nsdp/sdmx/MET_00M.xml 📄
User Id	root
Data Start Date	Thu Sep 01 00:00:00 GMT 2011
Data End Date	Thu Sep 01 00:00:00 GMT 2011

Figure 35 showing the registration details for Merchandise Trade

7 Subscribing As A Service

IMF SDMX Central provides three mechanisms for receiving notifications of structure and data updates, these are:

1. RSS Feed
2. Notification via Email
3. Notification via HTTP POST

7.1 RSS Feed

IMF SDMX Central RSS feed is linked to from the footer of the user interface. The URL of the RSS feed is:

<https://sdmxcentral.imf.org/rss.xml>

The RSS feed is updated each time a transaction is made with the service. A transaction includes structure additions, modifications, and deletions, as well as data registrations and deletions. Each transaction contains a URL link to the underlying SDMX document containing the information on the submission. The SDMX document is in version 2.1, and is a RegistryInterface document containing either a SubmitStructureRequest of a SubmitRegistration Request.

7.2 Notifications via Email or POST

Users may subscribe to structure or data changes in IMF SDMX Central. This is useful if a user, or indeed a computer system, wishes to be automatically informed of changes. To create a subscription, click on the **Subscribe to Changes** link, which is provided in the footer of IMF SDMX Central web interface.

By Metadata Technology Built using SdmxSource [Subscribe to changes](#)

Your Subscriptions

Receive notification by e-mail

Email Address Load your subscriptions | Unsubscribe

Select Event to Subscribe To

Event Type

All Data Events

All Structure Events

Refine Events Select Event Type

Receive notification by HTTP Post

POST URL

Subscribed Events

Event Type Event Filter

No data available in table

Figure 36: Showing the Subscription Dialog

A subscription is created by defining which events to subscribe to and adding them to a 'bucket' of subscribed events.

To receive Subscription notification events, users do not need to have an account with IMF SDMX Central. The user must provide a valid e-mail address and select the events that they wish to subscribe to.

On creating a subscription, it will either be actioned immediately (if the user is authenticated in IMF SDMX Central and their subscription email matches their user account) or a confirmation email will be sent which contains a link to complete the request.

When a structure is modified in IMF SDMX Central, or a new Data Registration event occurs, all the subscribers who are registered receive a notification.

Notifications via email will include an attached zip file containing the SDMX document with the modification that was made. The email will also contain a link which the user can click if they wish to unsubscribe from IMF SDMX Central.

Notifications via POST will be sent to the URL defined using the HTTP POST protocol. The POSTed document will be a SDMX version 2.1 RegistryInterface document, containing either a SubmitStructureRequest or a SubmitRegistrationRequest. The HTTP Content-Type header is set to 'application/text', and the document is contained in the body of the POST.