



EUROPEAN CENTRAL BANK

EUROSYSTEM

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Bridging standards – a case study for a SDMX- XBRL(DPM) mapping

Micro data vs macro data

Aggregated data: data aggregates that have a low likelihood of identification of individual reporting units, such as those found in traditional datasets

Disaggregated data: data below the level of aggregated data and with a higher likelihood of identifying individual reporting units than in the aggregated data.

Micro data: data on individual reporting units or specific transactions/instruments, which in most cases allow the identification of individual entities and therefore considered confidential.

Granular data: disaggregated data and micro data.

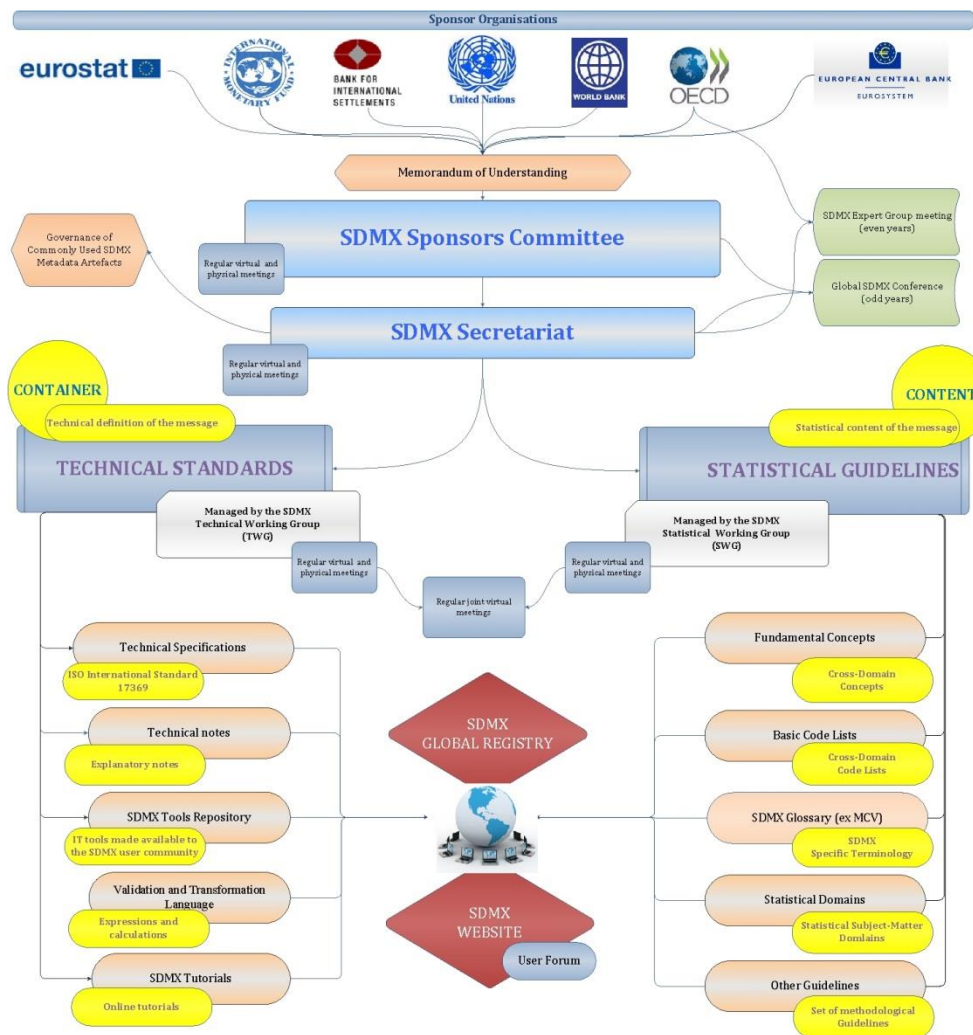
N.B.: [Definitions of the Inter-Agency Group on Economic and Financial Statistics](#)

Why bridging two data exchange models

- SDMX 2020 initiative
- ECB gets data from central banks and international organizations (primarily in SDMX)
- Ease the reporting burden by providing support and tools when needed (e.g. Excel reporting templates)
- Some reporters already use XBRL when providing data to organizations such as EBA and would like to be able to use the same format when sending the similar data to other organizations
- Some reporters would like to use XBRL for some of the new data collection exercises
- Interested in XBRL/SDMX mapping tools, to support more input/output formats

The ECB together with Banco de España will create a mapping between the two standards the SDMX and the Data Point Model

Introduction to the SDMX model



Introduction to the SDMX model

From www.sdmx.org

- SDMX, which stands for ***Statistical Data and Metadata eXchange*** is an international initiative that aims at standardising and modernising (“industrialising”) the mechanisms and processes for the exchange of statistical data and metadata among international organisations and their member countries.
- SDMX is sponsored by seven international organisations including the Bank for International Settlements (BIS), the European Central Bank (ECB), Eurostat (Statistical Office of the European Union), the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD), the United Nations Statistical Division (UNSD), and the World Bank.

Introduction to the SDMX model

- A Information Model to describe statistical data and metadata
 - DSD describes the structure of a statistical domain
 - Concepts
 - Dimensions
 - Attributes
 - Dataflows describes a statistical subset of data within a DSD
 - Concepts and code lists
 - Reference metadata MSD

Introduction to the SDMX model

- A standard for automated communication from machine to machine (push and pull)
- Different exchange formats
 - XML
 - JSON
 - CSV
 - Gesmes

Introduction to the DPM model

DPM (Data Point Modeling) is a methodology for the development of financial data models that describe characteristics of the information exchanged in the context of supervisory reporting processes

- **A Data Point** represents an individual data requirement. Data points are expressed as a composition of features that univocally identify the financial concept to be measured:
- **A metric**: characteristic that defines the nature of the measure to be performed.
- **A set of dimensional characteristics** that qualify and complement the metric and provide the proper context to understand the financial phenomenon represented.
- **A time reference** that helps to determine the specific instant or interval of time in the context of a given reporting period.

Main differences between SDMX and XBRL-DPM

- **Entity identification**
- **Period or frequency**
- **Use of dimensions**
- **Metrics vs measure dimensions**
- **Graphical representation**
- **Validation rules**
- **Use of attributes**

Modelling considerations

The consideration how to model is related to how you want to model/structure you DSD's and/or your data flows.

- Tables (Corep C 05.02)
 - Pros: Most dimensions used
 - Cons: Many DSD's
- Table Groups (collection of tables (C -> 01.00, 05.02))
 - Pros: Fewer DSD's
 - Cons: Many Dimensions “disabled”
- Everything
 - Pros: One DSD
 - Cons: Many dimensions and also many “disabled” dimensions

SDMX-DPM Case study

Set up and assumptions of the case study:

- The mapping could be done in both directions
 - in the case study we map DPM into SDMX
- The EBA C 05.02 table taken as the initial DPM file
- This table belongs to a table group with 5 additional templates which do not use the same number of dimensions

SDMX-DPM Case study

- Step by step guide to model the EBA file into a corresponding SDMX DSD
- Case study mapping
- *DPM does not contain Freq and Attributes*

XBRL	XBRL DPM Table	SDMX
NA	NA	FREQ Concept/Dimension
Dimension	Dimension, Dimensional/Coordinate	Concept/Dimension
Metric	Metric	Concept/Dimension
Domain	Domain	Code list
Member	Member	Code values
NA	NA	Attributes

SDMX-DPM Case study-mapping

Corep C 05.02 table view

C 05.02 - Capital Adequacy - Transitional provisions: Grandfathered instruments constituting State aid								Dimensions		
		Columns						[MCY:MC] Main category	[COI:C] Callability of the instruments	[TOF:OF] Transitionally treated as in Own Funds
		Amount of instruments plus related share premium	Base for calculating the limit	Applicable percentage	Limit	(-) Amount that exceeds the limits for grandfathering	Total grandfathered amount			
		010	020	030	040	050	060			
1. Instruments that qualified for point a) of Article 57 of 2006/48/EC	010	100000000	60000000	0.8	48000000000	-52000000	48000000	[MC:342] Grandfathered instruments not constituting state aid	[C:15] Instruments without a call or an incentive to redeem	[OF:2] CET1 Capital
2. Instruments that qualified for point c) of Article 57 and Article 154(3) and (3) of 2006/48/EC, subject to the limit of Article 467	020	57050000	450000	0.8	360000	-56630000	360000	[MC:342] Grandfathered instruments not constituting state aid	X	[OF:1] AT1 Capital
2.1 Total instruments without a call or an incentive to redeem	030	4050000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:15] Instruments without a call or an incentive to redeem	[OF:1] AT1 Capital
2.2 Grandfathered instruments with a call and incentive to redeem	040	1000000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:14] Instruments with a call or an incentive to redeem	[OF:1] AT1 Capital
2.2.1 Instruments with a call exercisable after the reporting date, and which meet the conditions in Article 43 of CRR after the date of effective maturity	050	2000000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:12] Instruments with a call exercisable after the reporting date, and which meet the conditions in Article 43 of CRR after the	[OF:1] AT1 Capital
2.2.2 Instruments with a call exercisable after the reporting date, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	060	1500000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:13] Instruments with a call exercisable after the reporting date, and which do not meet the conditions in Article 43 of CRR after the	[OF:1] AT1 Capital
2.2.3 Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	070	551000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:13] Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the	[OF:1] AT1 Capital
2.3 Excess on the limit of CET1 grandfathered instruments	080	52000000	1€	%	1€	1€	1€	[MC:337] Grandfathered instruments not constituting state aid. Excess of the applicable limit of higher	X	[OF:1] AT1 Capital
3. Items that qualified for points f), g) or h) of Article 57 of 2006/48/EC, subject to the limit of Article 490	030	64775456.53	1140382181	0.8	3123057.45	-55652333.11	3123057.45	[MC:342] Grandfathered instruments not constituting state aid	X	[OF:3] T2 Capital
3.1 Total items without an incentive to redeem	100	3500000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:15] Instruments without a call or an incentive to redeem	[OF:3] T2 Capital
3.2 Grandfathered items with an incentive to redeem	110	4585456.56	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:14] Instruments with a call or an incentive to redeem	[OF:3] T2 Capital
3.2.1 Items with a call exercisable after the reporting date, and which meet the conditions in Article 63 of CRR after the date of effective maturity	120	2100000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:12] Instruments with a call exercisable after the reporting date, and which meet the conditions in Article 43 of CRR after the	[OF:3] T2 Capital
3.2.2 Items with a call exercisable after the reporting date, and which do not meet the conditions in Article 63 of CRR after the date of effective maturity	130	1250000	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:13] Instruments with a call exercisable after the reporting date, and which do not meet the conditions in Article 43 of CRR after the	[OF:3] T2 Capital
3.2.3 Items with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 63 of CRR after the date of effective maturity	140	1235456.56	1€	%	1€	1€	1€	[MC:342] Grandfathered instruments not constituting state aid	[C:13] Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the	[OF:3] T2 Capital
3.3 Excess on the limit of AT1 grandfathered instruments	150	56690000	1€	%	1€	1€	1€	[MC:337] Grandfathered instruments not constituting state aid. Excess of the applicable limit of higher	X	[OF:3] T2 Capital
Metric	[m153] Carrying amount [mi]	[m157] Base for calculating the limit for grandfathering of instruments not	[p118] Percentage for calculating transitional adjustments [pi]	[m150] Limit for grandfathering of instruments not constituting State aid	[m140] Amount that exceeds the limit for grandfathering of instruments not	[m1243] Transitional computable amount [mi]				
[BAS:BA] Base	X	X	X	X	X	[BA:x1] Own Funds				

CODES

Dimensions

SDMX-DPM Case study

C 05.02 mapping DPM Dimension/Metrics to SDMX dimensions

Position	Concept	XBRL equivalent	Description	Codelist
1	FREQ	NA	Frequency	CL_FREQ
2	MCY	MCY:MC	Main Category	CL_MCY
3	COI	COI:CI	Collability of the instruments	CL_COI
4	TOF	TOF:OF	Transitionally treated as in own funds	CL_TOF
5	Metric	Mi53, mi57, pi188	Data- and Flowtype ¹	CL_AT
6	BAS	BAS:BA	Own funds ²	CL_BAS

¹ Could be considered divided into 2 dimensions

² Could be considered to be part of another dimension

SDMX-DPM Case study

Example with one data point to a SDMX observation

C 05.02 - Capital Adequacy - Transitional provisions: Grandfathered instruments constituting State aid										
		Columns						(MCY:MC) Main category	(COI:C) Callability of the instruments	(TOF:OF) Transitionally treated as in Own Funds
		Amount of instruments plus related share premium	Base for calculating the limit	Applicable percentage	Limit	(-) Amount that exceeds the limits for grandfathering	Total grandfathered amount			
		010	020	030	040	050	060			
1. Instruments that qualified for point a) of Article 57 of 2006/48/EC	010	10000000	60000000	0.8	4800000000	-52000000	48000000	(MCY:MC) Main category (MC:342) Grandfathered instruments not constituting state aid	(COI:C) Callability of the instruments (CI:5) Instruments without a call or an incentive to redeem	(TOF:OF) Transitionally treated as in Own Funds (OF:3) CET1 Capital
2. Instruments that qualified for point ca) of Article 57 and Article 154(8) and (9) of 2006/48/EC, subject to the limit of Article 467	020	57050000	450000	0.8	360000	-56630000	360000	(MC:342) Grandfathered instruments not constituting state aid	(CI:5) Instruments without a call or an incentive to redeem	(OF:3) AT1 Capital
2.1 Total instruments without a call or an incentive to redeem	030	4050000	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:4) Instruments with a call or an incentive to redeem	(OF:3) AT1 Capital
2.2 Grandfathered instruments with a call and incentive to redeem	040	1000000	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:2) Instruments with a call exercisable after the reporting date, and which meet the conditions in Article 43 of CRR after the date of effective maturity	(OF:3) AT1 Capital
2.2.1 Instruments with a call exercisable after the reporting date, and which meet the conditions in Article 43 of CRR after the date of effective maturity	050	2000000	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:3) Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	(OF:3) AT1 Capital
2.2.2 Instruments with a call exercisable after the reporting date, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	060	1500000	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:3) Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	(OF:3) AT1 Capital
2.2.3 Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	070	551000	1€	%	1€	1€	1€	(MC:337) Grandfathered instruments not constituting state aid. Excess of the applicable limit of higher (MC:342) Grandfathered instruments not constituting state aid	(CI:3) Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	(OF:3) AT1 Capital
2.3 Excess on the limit of CET1 grandfathered instruments	080	52000000	1€	%	1€	1€	1€	(MC:337) Grandfathered instruments not constituting state aid. Excess of the applicable limit of higher (MC:342) Grandfathered instruments not constituting state aid		(OF:3) AT1 Capital
3. Items that qualified for points f), g) or h) of Article 57 of 2006/48/EC, subject to the limit of Article 430	090	64775456.53	11403821.81	0.8	3123057.45	-85652339.11	3123057.45	(MC:342) Grandfathered instruments not constituting state aid		(OF:3) T2 Capital
3.1 Total items without an incentive to redeem	100	3500000	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:5) Instruments without a call or an incentive to redeem	(OF:3) T2 Capital
3.2 Grandfathered items with an incentive to redeem	110	4585456.56	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:4) Instruments with a call or an incentive to redeem	(OF:3) T2 Capital
3.2.1 Items with a call exercisable after the reporting date, and which meet the conditions in Article 63 of CRR after the date of effective maturity	120	2100000	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:2) Instruments with a call exercisable after the reporting date, and which meet the conditions in Article 43 of CRR after the date of effective maturity	(OF:3) T2 Capital
3.2.2 Items with a call exercisable after the reporting date, and which do not meet the conditions in Article 63 of CRR after the date of effective maturity	130	1250000	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:3) Instruments with a call exercisable after the reporting date, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	(OF:3) T2 Capital
3.2.3 Items with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 63 of CRR after the date of effective maturity	140	1235456.56	1€	%	1€	1€	1€	(MC:342) Grandfathered instruments not constituting state aid	(CI:3) Instruments with a call exercisable prior to or on 20 July 2011, and which do not meet the conditions in Article 43 of CRR after the date of effective maturity	(OF:3) T2 Capital
3.3 Excess on the limit of AT1 grandfathered instruments	150	56630000	1€	%	1€	1€	1€	(MC:337) Grandfathered instruments not constituting state aid. Excess of the applicable limit of higher		(OF:3) T2 Capital
Metric		(m153) Carrying amount [m]	(m157) Base for calculating the limit for grandfathering of	(p1188) Percentage for calculating transitional	(m160) Limit for grandfathering of instruments not constituting	(m140) Amount that exceeds the limit for grandfathering of	(m1243) Transitional computable amount [m]			
(BAS:BA) Base		X								(BA:31) Own

SDMX-DPM Case study

Example with one data point to a SDMX observation

M:x342:x5:x2:mi53:_Z

Code	Description	Dimension	Code list
M	Monthly	FREQ	CL_FREQ
x342	Grandfathered instruments not constituting state aid	MCY	CL_MCY
x5	Instruments without a call or an incentive to redeem	COI	CL_COI
x2	CET1 Capital	TOF	CL_TOF
mi53	Carrying amount (Monetary Stock)	Metric	CL_AT
_Z	Not applicable	BAS	CL_BAS

Summary

- There is not a direct mapping between SDMX and DPM
- Different Decisions/Considerations have to be made in different implementations
- The work will continue to finalize the mapping according to the Roadmap 2020.