



DPM tutorial

14th XBRL Europe Day & 20th Eurofiling Workshop

24-26 November 2014

Thinking Forward.





Agenda

- Introduction to Data Point Modeling
- Challenges of data modeling
- CRR/CRDIV DPM
- Sol2 DPM
- Extending DPMs





Introduction to Data Point Modeling

DPM tutorial

Thinking Forward.



What are the questions asked by business and IT experts?

Statement of financial position

Categories of financial assets and financial liabilities The carrying amounts of each of the following categories, as defined in IAS 39,

- shall be disclosed either in the statement of financial position or in the notes
- financial assets at fair value through profit or loss, showing separately (i) those designated as such upon initial recognition and (ii) those classified as held for trading in accordance with IAS 39;
- (b) held-to-maturity investments;
- (c) loans and receivables
- available-for-sale financial assets
- financial liabilities at fair value through profit or loss, showing separately (e) (i) those designated as such upon initial recognition and (ii) those classified as held for trading in accordance with IAS 39; and
- financial liabilities measured at amortised cost.

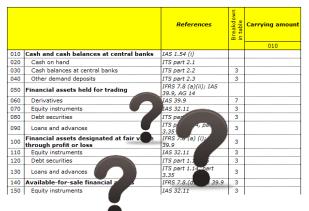


Business users

- IFRS, FINREP, COREP, ... which accounting regime or standard?
- What do you mean by "financial" (IAS 39/IFRS7/...)? ٠
- Where is it disclosed? ٠
- Gross or net carrying amount? ٠
- Any of it impaired or past due but not impaired yet? Or ٠ maybe it is measured at fair value? If so: which level?
- Which operations is it reported for? Banking book, ٠ assets management, ...?
- Is any of it portion transferred or partially ٠ derecognized?
- Is it audited or unaudited, solo or consolidated (if ٠ consolidated then which method)?
- ٠

1. Balance Sheet Statement [Statement of Financial Position]

1.1. Assets



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- midomainItemType" xbrliperiodType="instant" model:isDefaultM model:creationDate="2012-12-10" id="eba x0" />



"Financial assets"

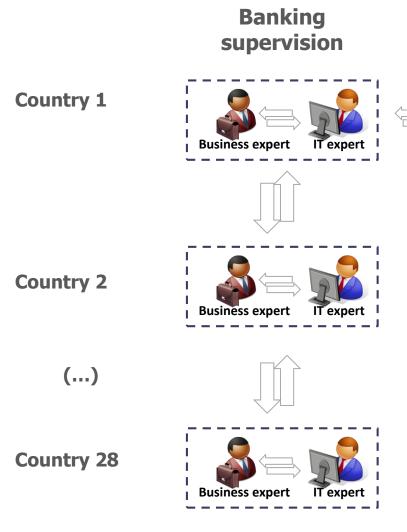


IT

- Is it a number, date, text? If a number that what is the unit of measure?
- How is it related to other data which package does it come with (frequency, types of entities)?
- Does it calculate to or from anything else?
- Are there any breakdowns applicable? Are they predefined or flexibly assigned by filers?
- What attributes apply to this data? How is it characterised?
- Which journal-entries roll-up to this value?



Business vs. IT issue is not the biggest challenge in EU



Insurance supervision



Capital market supervision



Challenges:

- Different sectors (i.e. Basel III vs. Solvency II)
- High number of countries (European vs. global initiatives)
- Frameworks (Basel vs. IFRS)
- Other (i.e. proportionality rule, solo vs. consolidated reporting, etc.)

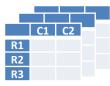




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	A B	С	D	E	F			
1	1 1. Balance Sheet Statement [Statement of Financial Position]							
2								
3	1.1.	Assets						
4								
5			References	Breakdown in table	Carrying amount			
6					010			
7	010	Cash and cash balances at central banks	IAS 1.54 (i)		6 390 136			
8	020	Cash on hand	ITS part 2.1		3 400 890			
9	030	Cash balances at central banks	ITS part 2.2	3	2 980 234			
10	040	Other demand deposits	ITS part 2.3	3	9 012			
11	050	Financial assets held for trading	IFRS 7.8 (a)(ii); IAS 39.9, AG 14		2 358 292			
12	060	Derivatives	IAS 39.9	7	1 090 910			
13	070	Equity instruments	IAS 32.11	3	1 200 345			
14	080	Debt securities	ITS part 1.14, 15	3	59 821			
15	090	Loans and advances	ITS part 1.14, part 3.35	3	7 216			

"form centric"

- based on presentation of data which conveys all semantics (interpretation in context of views)
- description based on table cells (row/column code, e.g. C6 or simply by row/column title concatenation)
- most common solution in projects with no input from business experts
- difficult to maintain and apply e.g. for analysis
- fillers map/extract to/from views (question and error prone)



"data centric"

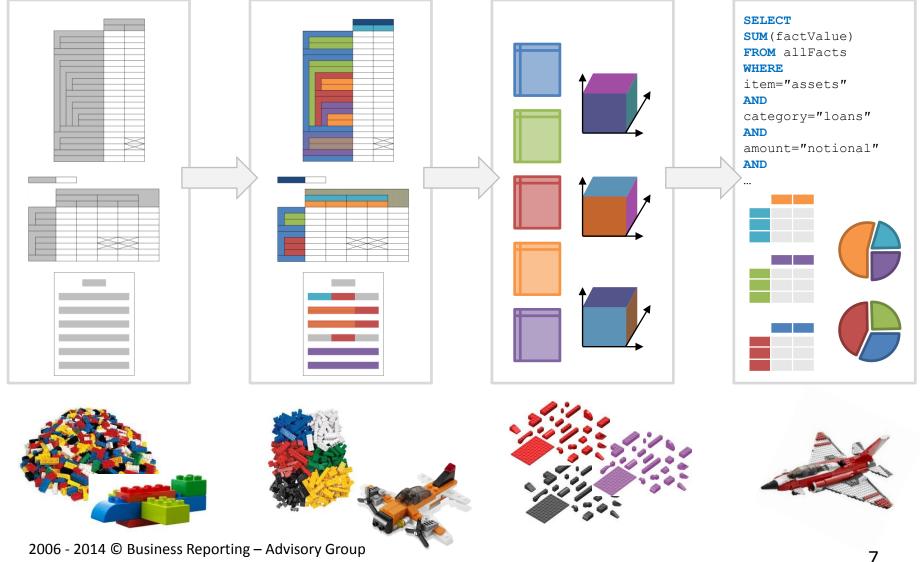
- explicit and consistent definition irrespective of presentation
- every data cell fully described by business users with all necessary properties in order to explicitly express its meaning
- resulting data model supports data exchange (explicit information for filers) and usage (e.g. in analysis)

Din	ohri lanoisnee		Primary Item		Unit		
PK PK	DimID MemiD	PK	PrimaruttemIQ	P	K <u>UnitiD</u>		
	DinGrame		Qrame Label		Name Symbol		
	DimLabel MemQname DimLabel	harren	1		1		
			Data Point		Facts		
		PK	DataPointyID	PK	EastiQ	1	
		FK1	Primary/terrilD		ConceptA ConceptB		
				- 1			
Dat	Point Dimension	8 T		FK1	PeriodID		
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DataPoint					
Metric	"Carrying amount"	🔣 = "Carrying amour	nt"		
Base	"Assets"	💽 = "Assets"		Carrying amount	
Category	"Derivative"	💽 = "Derivative"			
Portfolio	"Held-for-trading"	📧 = "Held-for-tradin	g"	010	
		= "1090910"		6 390 136	
Pomoc niedost	ępna.			3 400 890	
	Portfolio			2 980 234	
	FORLIOID			9 012	
				2 358 292	
Wynik formuły	= 1090910			or-trading")	ļ
	- 1050510			1 200 345	
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				7 216	



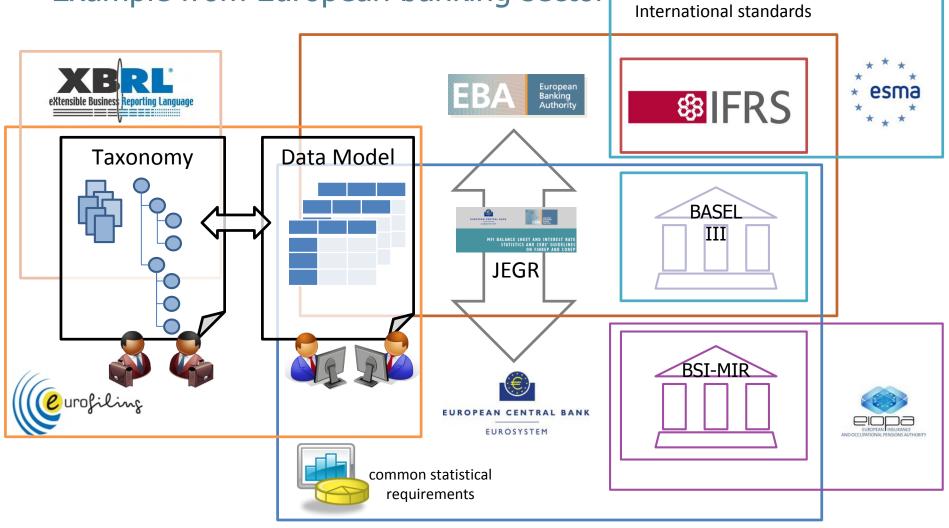
How to approach data centric modeling?







How to solve communication problem? Example from European banking sector







• Template 3

FINREP ver 1: 51 data points FINREP rev 2: 45 data points

- Identical cells?
 0!
- Why?

different classification of instruments addition of economic hedges as a new portfolio introduction of breakdown by markets

• How to present this change?

By type of rick	By instrument	Carryin	g amount	Notional amount		
By type of fisk	By instrument		Assets Liabilities			
Interest rate	Option/Cap/Floor/	Collar/Swaption				
	IRS					
	FRA					
	Forward					
	Interest future					
	Other					
Equity	Equity forward					
	Equity future					
	Equity option	→[
	Warrant					
	Other					
Currency (FX)	FX forward					_
	FX future	Financial Ass	ets Held for I	rading, Trading	Derivatives, Equity	0
	Cross currency sv	vap				
	FX option					
	FX forward rate a	greement				
	Other					

3. Derivatives held for trading

		arket <i>References</i>	Carrying	j amount	Notiona
By type of risk	By product or by type of market		Assets	Liabilities	Total
Interest rate	 Financial Assets Held for T 	rading, Tradi	ing Derivativ	ves, Equity O	ption, OTC
	Organized market options Organized market other				
	of which: economic hedges				
Equity	OTC options			7	
	OTC other				
	Organized market options			1	
	Organized market other				
	of which: economic hedges				
Fereign exchange	OTC options				
Financial	Assets Held for Trading, Tradir	ng Derivative	s, Equity Op	tion, Organi	zed marke
	Organized market other				
	of which: economic hedges				









3. Derivatives held for trading

By type of rick	By instrument	Carrying	Notional amount	
by type of fisk	by instrument	Assets	Liabilities	
Interest rate	Option/Cap/Floor/Collar/Swaption			
	IRS		ر م	
A	FRA			
	Forward			
	Interest future			
	Other			
Equity	Equity forward			
	Equity future			
	Equity option			
	Warrant			
	Other			
Currency (FX)	FX forward			
	FX future			
	Cross currency swap			
	FX option			
	FX forward rate agreement			
	Other			

Category
Derivatives
Portfolio
Held for trading
Base item
Assets
Liabilities
Assets and/or Liabilities
Amount type
Carrying amount
Notional amount
Risk Type
Currency (FX)
Equity
Interest rate
Instruments
Option
Cross swap
Forward
FRA
Future
IRS
Warrant
Option/Cap/Floor/Collar/Swaption
Other than Option, Cross swap, Forward and Future
Other than Option, Warrant, Forward and Future
Other than Option/Cap/Floor/Collar/Swaption, IRS, FRA, Forward and Future







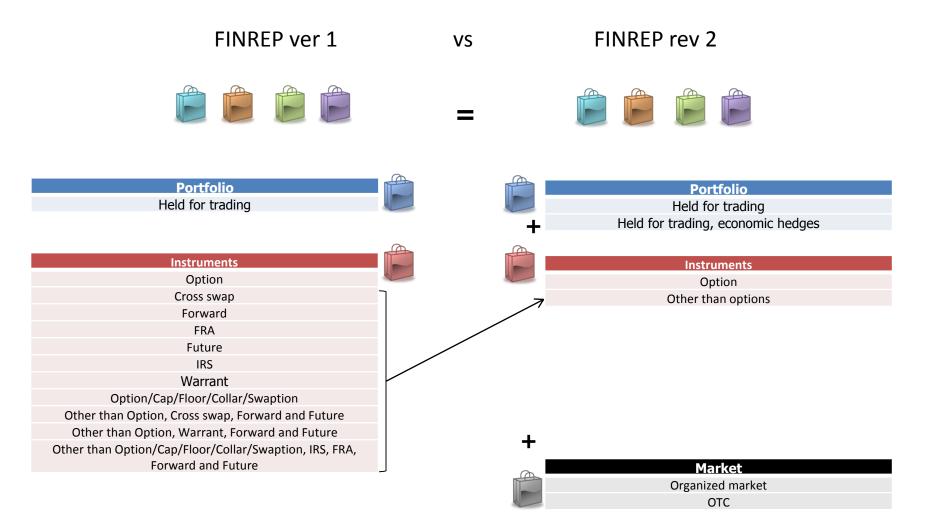
3. Derivatives held for trading

				Carrying	amount	Notiona	
By type of risk	By product or by type of market		References	Assets	Liabilities	Total	
Interest rate	OTC options						
~	OTC other			_4	A		
1	Organized market options				0		
	Organized market other			-			
	of which: economic hedges						
Equity	OTC options						
	OTC other	A					
	Organized market options	-					
	Organized market other						
	of which: economic hedges						
Foreign exchange	OTC options						
	OTC other						
	Organized market options						
	Organized market other 🛛 🌉						
	of which: economic hedges						
	or which, economic nedges						

Category
Derivatives
Portfolio
Held for trading
Held for trading, economic hedges
Base item
Assets
Liabilities
Assets and/or Liabilities
Amount type
Carrying amount
Notional amount
Risk Type
Currency (FX)
Equity
Interest rate
Instruments
Option
Other than options
Market
Organized market
Organized market











What is the idea of a "data point"?

- identification of a measure/metric (XBRL primary item) and a component of each applicable
 breakdown (XBRL subdomains related to particular dimensions) describing this measure
 in order to explicitly define a piece of information (e.g. a cell in a template)
- measure/metric: shall cover data type information, instant vs. duration, basic business meaning that could be detailed using breakdowns

FINREP: current approach: carrying amount, current period, ...

COREP: original exposure pre conversion factors, risk weighted exposure amount, ...

MIR: NDER, APRD, transactions, ... (to be upgraded to be in line with COREP/FINREP)

BSI: assets, liabilities, managed assets, ... (to be upgraded to be in line with COREP/FINREP)

• **breakdown**: a view on a measure/metric from a certain perspective: decomposition of a metric according to a selected criterion

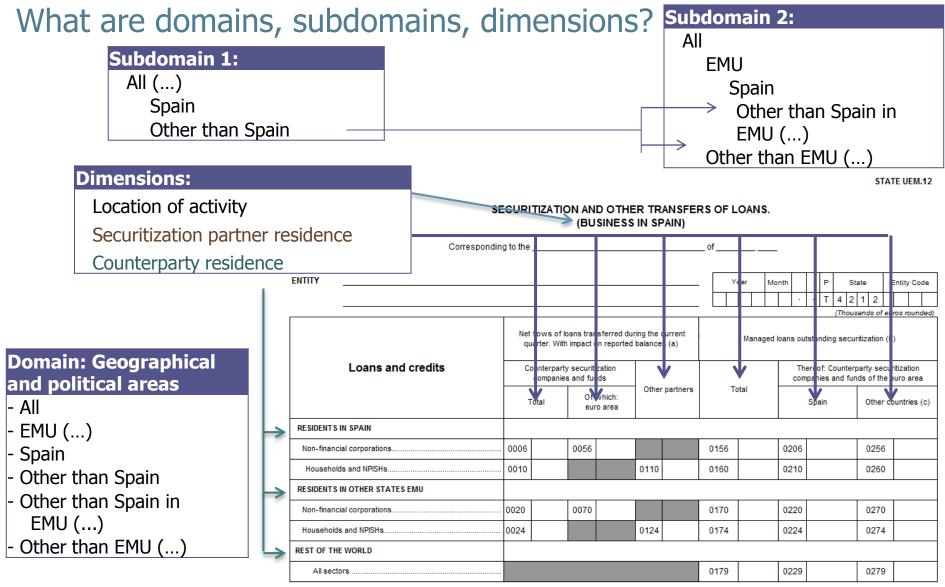
disaggregation (with ,+' or ,-' sign) of a total (e.g. counterparty sector or residence) indicating certain notion (property) of a base item (e.g. solo vs. CRD consolidated vs. IFRS

consolidated reporting scope, ...)

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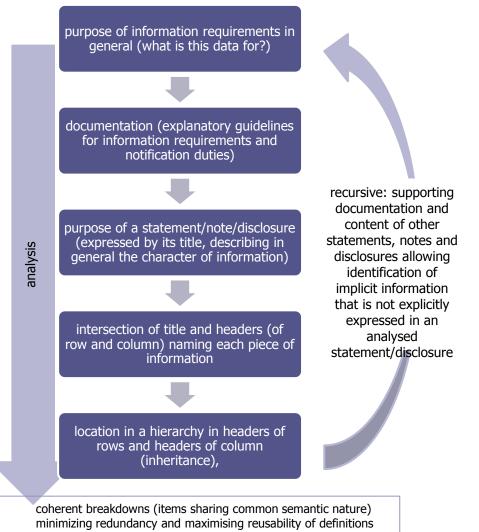




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What is the general process of development of the DPM?



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- 1. study the information requirements
- 2. analyse them by statements/disclosures (table by table, header by header according to the <u>divide and conquer</u> <u>approach</u>):
 - A. identify measures (metrics) and list them down (if a measure is already listed reuse it) identifying type of expected value and measurement in time (instant/duration)
 - B. identify and name all breakdowns required to explicitly define each piece of information
 - preserve hierarchies (if applicable) with other already defined values (properties) or reuse existing values
 - if a value is not applicable to any existing hierarchy create a new one
- 3. review the measures and breakdowns and look for optimization (e.g. breakdowns of similar nature, functional relationships, etc)
- 4. add other necessary characteristics

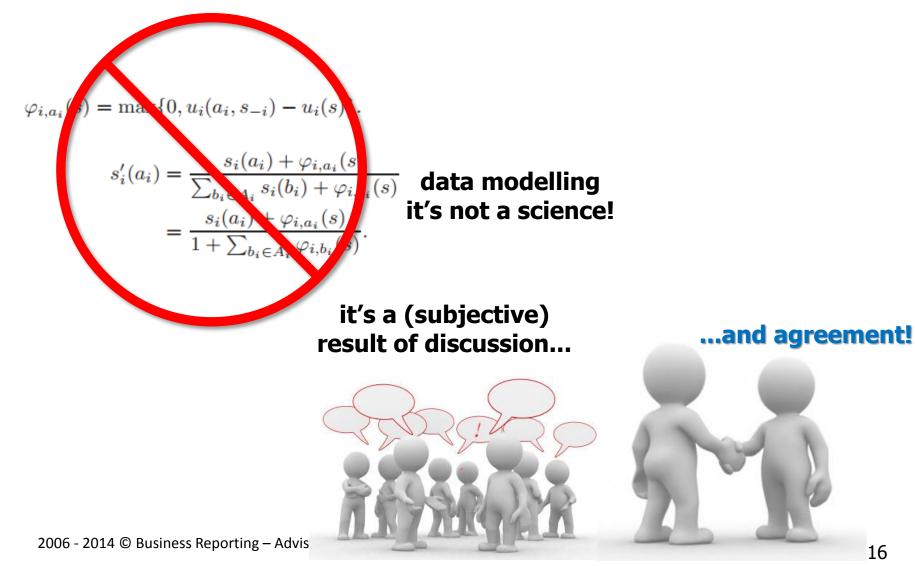
Resulting DPM shall contain:

- a list of measures (name, label, data and period type, ...) and hierarchy o measures (if applicable)
- a list of members and dimensions of each domain (name, label, item type, default member)
- a subdomains of each domain (subdomain name, hierarchy and order, alternative classifications)





How to define the best data model?





Net carrying amount of not yet impaired but already past due (over 180 days but less than a year) debt securities held, issued in EUR by MFIs located in EMU with original maturity under one year, measured at amortised cost and relating only to business activities conduced in EU?

Locations of activities:	Portfolios:	Impairment status:	Time reference:
All / Not-applicable	Total ()	All / Not-applicable	Current period end
EU	Fair value through profit or loss	Impaired	Previous period end
Other than EU ()	Amortised cost	Unimpaired	Current period

Base terms:
Assets
Liabilities
Equity
Off-balance sheet
Exposures

Amount types (metric): Carrying amount Gross carrying amount (Specific allowances) (Collective allowances)

Original currencies:

All / Not-applicable

EUR

Other than EUR		
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Base term:	Assets
Category:	Debt securities
Portfolio:	Amortised cost
Amount type:	Carrying amount
Impairment status:	Unimpaired
Past due period:	≥ 180 days < 1 year
Original currency:	EUR
Original maturity:	< 1 year
Counterparty sector:	MFIs
Counterparty residence:	EMU
Location of activity:	EU
Time reference:	Current period end

Current period
Past due periods:
All
< 180 days
≥ 180 days < 1 year
≥1 year
Original maturity:
All
< 1 year
≥ 1 year < 2 year
≥ 2 years
Counterparty sectors:
All / Not-applicable
MFIs
MMFs
MFIs other than MMFs
Central Administration
Other general government

Non-MFIs other than government
Counterparty residences:
All / Not-applicable
EMU
Other than EMU ()



What are the benefits of using DPM?

DPM is template independent (data centric) - all information about data point is explicit (easy to communicate)

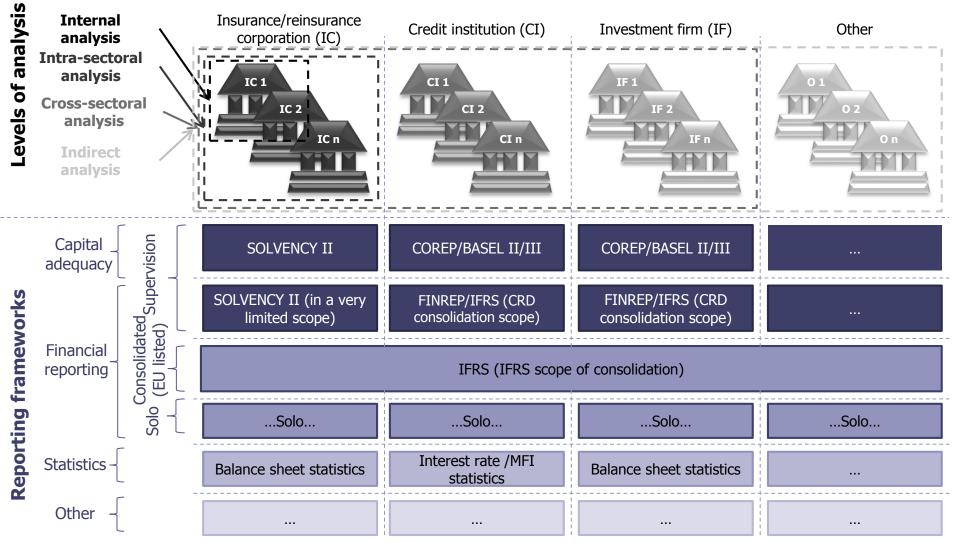
Model is very stable but possible to extend if required (reusing of concepts is priority, adding/extending of concepts/hierarchies is possible as long as it doesn't break the logic of model)

It is easy to trace the difference between every two data points across entire reporting framework

The quality of reporting requirements/templates is improving (consistent labeling, hierarchical structures) DPM could be a guideline how to organize the data on reporting entity side (storage and BI systems)



Sharing DPM dictionaries – general concept

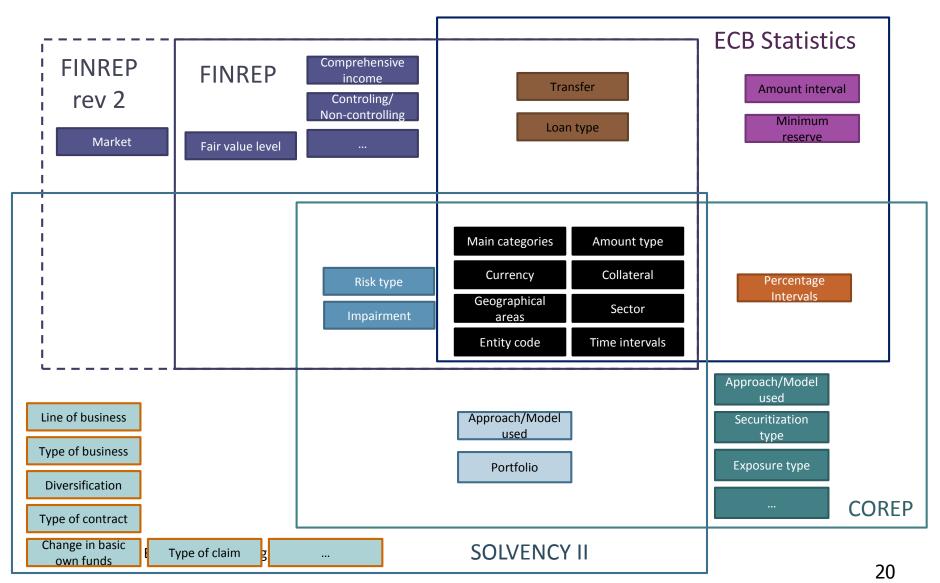


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Sharing DPM dictionaries – example







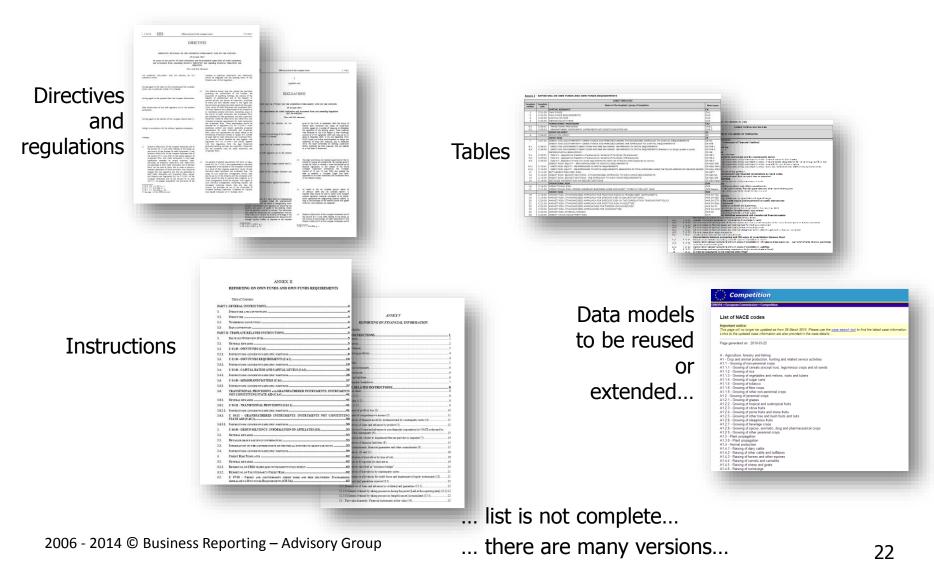
Challenges of data modeling

DPM tutorial

Thinking Forward.



What are the input materials to develop DPM?





What is the relation of the table to other tables? Detailing – CRR/CRDIV case

		References	Breakdown in table	Carrying amount
				010
010	Cash and cash balances at central banks	IAS 1.54 (i)		
020	Cash on hand	Annex V.Part 2.1		
030	Cash balances at central banks	Annex V.Part 2.2	4	
040	Other demand deposits	Annex V.Part 2.3	4	
050	Financial assets held for trading	IFRS 7.8(a)(ii); IAS 39.9, AG 14		
060	Derivatives	IAS 39.9	10	
070	Fauity instruments	145 32.11	4	
080	Debt securities	Annex V.Part 1.24, 26	4	
090	Loans and advances	Annex V.Part 1.24, 27	4	
100	Financial assets designated at fair value through profit or loss	IFRS 7.8(a)(i); IAS 39.9	4	
110	Equity instruments	IAS 32.11	4	
120	Debt securities	Annex V.Part 1.24, 26	4	
130	Loans and advances	Annex V.Part 1.24, 27	4	
140	Available-for-sale financial assets	IFRS 7.8(d); IAS 39.9	4	
150	Equity instruments	IAS 32.11	4	

		References	Carrying amount	Accumulated changes i fair value due to credi risk IFRS 7.9 (c); Annex V.Par		
			010	020		
010	Equity instruments	IAS 32.11				
020	of which: at cost	IAS 39.46(c)				
080	of which: credit institutions	Annex V.Part 1.35(c)				
040	of which: other financial corporations	Annex V.Part 1.35(d)				
050	of which: non-financial corporations	Annex V Part 1 35(e)				
060	Debt securities	Annex V.Part 1.24, 26				
070	Central banks	Annex V.Part 1.35(a)				
080	General governments	Annex V.Part 1.35(b)				
090	Credit institutions	Annex V.Part 1.35(c)				
100	Other financial corporations	Annex V.Part 1.35(d)				
110	Non-financial corporations	Annex V.Part 1.35(e)				
120	Loans and advances	Annex V.Part 1.24, 27				
130	Central banks	Annex V.Part 1.35(a)				
140	General governments	Annex V.Part 1.35(b)				
150	Credit institutions	Annex V.Part 1.35(c)				
160	Other financial corporations	Annex V.Part 1.35(d)				
170	Non-financial corporations	Annex V.Part 1.35(e)				
180	Households	Annex V.Part 1.35(f)				





What is the relation of the table to other tables? Detailing – Sol2 case

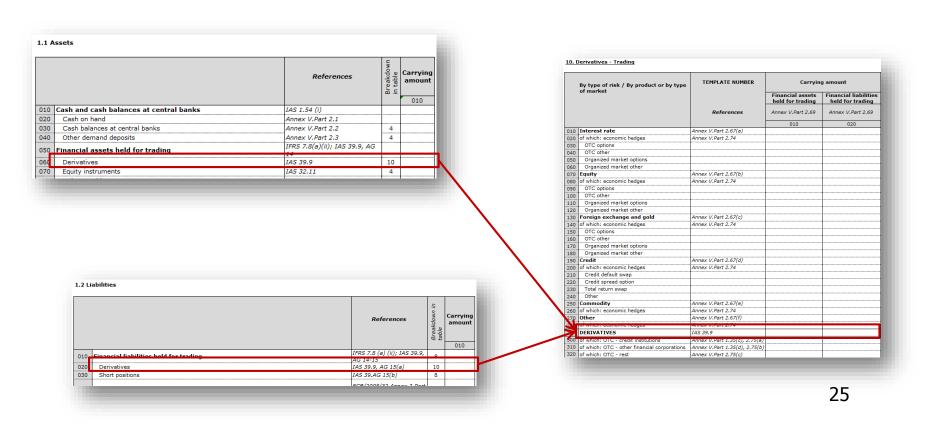
Basic own funds	Total	Tier 1 - unrestricted	Tier 1 - restricted	Tier 2	Tier 3
ordinary share capital (gross of own shares)	A1	B1		C1	
hare premium account related to ordinary share capital	A2	B2		C2	
nitial funds, members' contributions or the equivalent basic wn - fund item for mutual and mutual-type undertakings	A3	B3		C3	
ubordinated mutual member accounts	A4		B4	C4	D4
urplus funds	A6	B6			
reference shares	A8		B8	C8	D8
hare premium account related to preference shares	A9		B9	C9	D9
econciliation reserve	A12	B12			
ubordinated liabilities	A13		B13	C13	D13
n amount equal to the value of net deferred tax assets	A15				D15
ther items approved by supervisery authority as basic own inds not specified above	A16	B16	B16A	C16	D16

			Of which counted		Of which counted under	
Preference shares	Total	Tier 1	under transitionals	Tier 2	transitionals	Tier 3
Dated preference shares	A79	B79	C79	D79	E79	F79
Undated preference shares with a call option	A89	B80	C80	D80	E80	F80
Undated preference shares with no contractual opportunity to redeem	A81	B81	C81	D81	E81	F81
Total preference shares	A82	B82	C82	D82	E82	F82

		Is this counted	Counterparty (if	issue		Details of further call	Details of incentives
Description of preference shares	Amount	under transitionals?	specific)	date	First call date	dates	to redeem
A87.1	B87.1	C87.1	D87.1	E87.1	F87.1	G87.1	H87.1
A87.n	B87.n	C87.n	D87.n	E87.n	F87.n	G87.n	H87.n



What is the relation of the table to other tables? Mergers – CRR/CRDIV case







What is the relation of the table to other tables? Mergers – Sol2 case

Balance sheet

Fund number	A0							
Assets	Solvency II value	Statutory accounts						
		value						
Goodwill		AS1						
Deferred acquisition costs		AS24						
Intangible assets	A2	A2						
Deferred tax assets	A26	A26						
Pension benefit surplus	A25B	A25B						
Property, plant & equipement held for own use	A3	A3						
Investments (other than assets held for index-linked and								
unit-linked funds)	A4	A4						
Assets held for index-linked and unit-linked funds	A12	A12						
Loans & mortgages	A1/	A1/						
Loans & mortgages to individuals	Assets and liabilities	by currency						
Other loans & mortgages					Reporting currency	Currencies	Other	Total
Loans on policies	Currency code				A1	B1	other	- otai
Reinsurance recoverables from:					AI	DI		
Non-life and health similar to non-life	Assets							
Non-life excluding health		an assets held for index-link			A3			
Health similar to non-life	Other assets within sco	pe of Assets-D1 (other the	an ind	dex-linked and unit-linked funds)	A4			
Life and health similar to life, excluding health and index-	Assets held for index-lir	nked and unit-linked funds			A5			
linked and unit-linked	Reinsurance recoverab	les			A5A			
Health similar to life	Deposits to cedants in	surance and intermediaries	rece	eivables and reinsurance receivables	A6			
Life excluding health and index-linked and unit-linked	Any other assets				A7			
Life index-linked and unit-linked	Total assets				A7A			
Deposits to cedants					8/8			
Insurance & intermediaries receivables	Liabilities					1		
Reinsurance receivables		xcluding index-linked and u			A8			
Receivables (trade, not insurance)	Technical provisions - ir	ndex-linked and unit-linked	fund	S	A9			
Own shares	Deposits from reinsure	rs and insurance, intermedi	iaries	and reinsurance payables	A10			
Amounts due in respect of own fund items or initial fund	Derivatives				A11			
called up but not yet paid in	Financial liabilities				A12			
Cash and cash equivalents	—Contingent liabilities				A13			
Any other assets, not elsewhere shown	-Any other liabilities				A14			
Total assets								├┤║
	Total liabilites		_		A15	1		





What is the relation of the table to other tables? Detailing of mergers – Sol2 case

Balance sheet

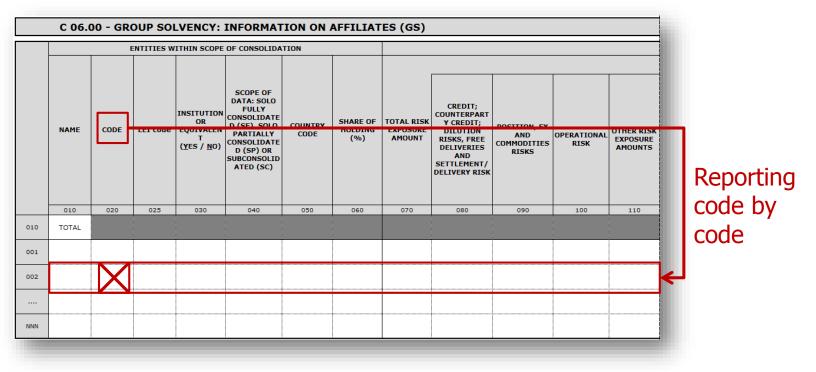
Fund number	A0	
	Solvency II value	Statutory accounts
Assets		value
Goodwill		AS1
Deferred acquisition costs		AS24
Intangible assets	A2	A2
Deferred tax assets	A26	A26
Pension benefit surplus	A25B	A25B
Property, plant & equipement held for own use	A3	A3
Investments (other than assets held for index-linked		
and unit-linked funds)	A4	A4
Property (other than for own use)	A5	A5
Participations	A6	A6
Equities	A7B	A7B
Equities - listed	A7	A7
Equities - unlisted	A7A	A7A
Bonds	A8E	A8E
Government Bonds	A8	A8
Corporate Bonds	A8A	A8A
Structured notes	A8C	A8C
Collateralised securities	A8D	A8D
Investment funds	A9	A9
Derivatives	A10A	A10A
Deposits other than cash equivalents	A10B	A10B
Other investments	A11	A11
Assets held for index-linked and unit-linked funds	A12	A12

	Identification section			Categorisation s	section					
	Legal name of the	ID Code	Type of	Capital	Collateral	Collateral	Underlying	Callable or Putable	Synthetic	Prepayment
	undertaking		structured	protection		type	security / index /		structured	structured
			product				portfolio		product (Y/N)	product (Y/N)
Cell Number	A50	A1	A2	A3	A4	A5	A6	A8	A15	A16





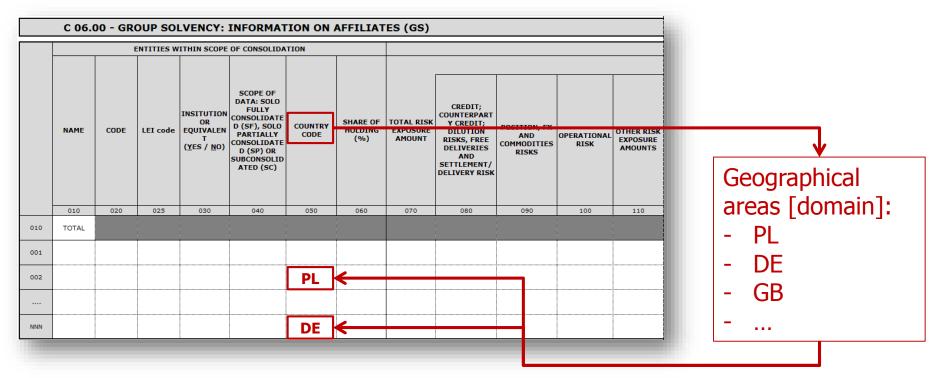
Is a table open or closed?



- What is the key (<key value>) to gather information in rows (or columns)?
- Is the key composite?
- Is the key shared with other tables?
- Should it be stable in time?



Are there any enumerations in open tables?

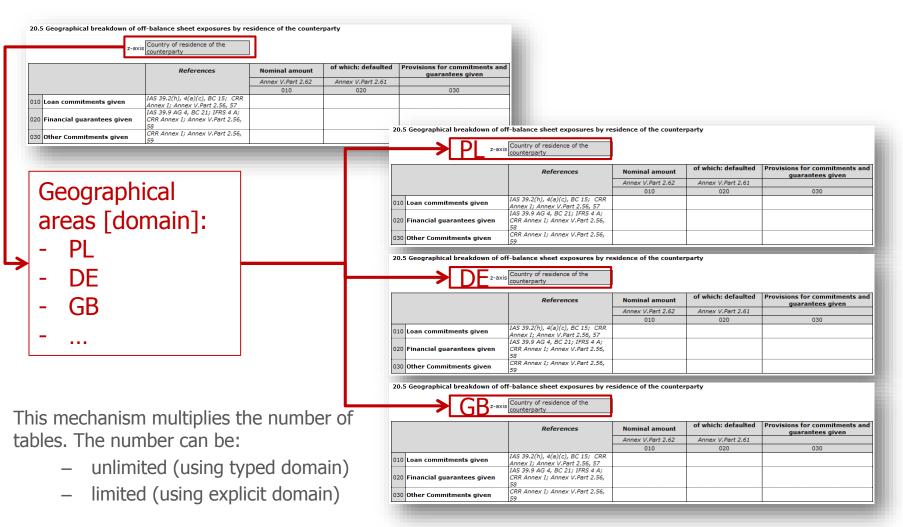


Domain members could be reused as metrics





Is there Z-axis information?





Does the same dimension apply to both: rows and columns?

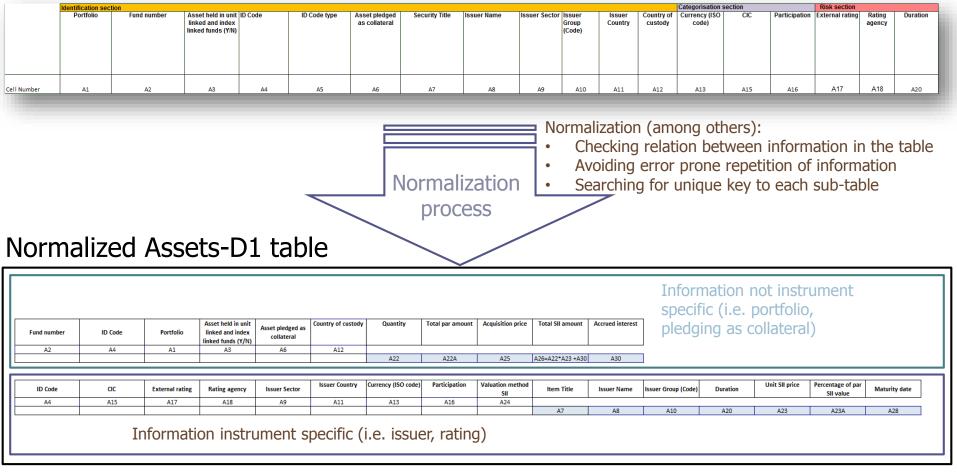
	IRB Exposure class: Own estimates of LGD and/or conversion factor	rs:													
		INTERNAL RATING SYSTEM	ORIGINAL EXPOSURE PRE CONVERSION FACTORS		CREDIT RISK MITIGATION (CRM) TECHNIQUES WITH SUBSTITUTION EFFECTS ON THE EXPOSURE										
		KATING STSTEM			UNFUNDED CREDIT PROTECTION			SUBSTITUTION OF THE EXPOSURE DUE TO CRM		EXPOSURE AFTER CRM SUBSTITUTION		EXPOSURE			
		PD ASSIGNED TO THE OBLIGOR GRADE OR POOL (%)	1	OF WHICH: LARGE FINANCIAL SECTOR ENTITIES AND UNREGULATED FINANCIAL ENTITIES	(-) GUARANTEES	(-) CREDIT DERIVATIVES	(-) OTHER FUNDED CREDIT PROTECTION	(-) TOTAL OUTFLOWS	TOTAL INFLOWS (+)	EFFECTS PRE CONVERSION FACTORS	OF WHICH: OFF BALANCE SHEET ITEMS	VALUE	OF WHICH: OFF BALANCE SHEET ITEMS	OF WHICH: ARISING FROM COUNTERPARTY CREDIT RISK	OF WHICH: LARGE FINANCIAL SECTOR ENTITIES AND UNREGULATED FINANCIAL ENTITIES
		010	020	030	040	050	060	070	080	090	100	110	120	130	140
≥	TOTAL EXPOSURES													???	
	BREAKDOWN OF TOTAL EXPOSURES BY EXPOSURE TYPES:														
20	On balance sheet items subject to credit risk														
20	on balance sheet items subject to creat risk														
	Off balance sheet items subject to credit risk														
	-														
30	Off balance sheet items subject to credit risk Exposures / Transactions subject to														
)30)40	Off balance sheet items subject to credit risk Exposures / Transactions subject to counterparty credit risk														
030 040 050	Off balance sheet items subject to credit risk Exposures / Transactions subject to counterparty credit risk Securities Financing Transactions Derivatives & Long Settlement Transactions From Contractual Cross Product Netting														
130 140 150 160	Off balance sheet items subject to credit risk Exposures / Transactions subject to counterparty credit risk Securities Financing Transactions Derivatives & Long Settlement Transactions														
030 040 050 060 070	Off balance sheet items subject to credit risk Exposures / Transactions subject to counterparty credit risk Securities Financing Transactions Derivatives & Long Settlement Transactions From Contractual Cross Product Netting EXPOSURES ASSIGNED TO OBLIGOR GRADES OR	dit risk, c	liluti	on risk a	and free	e delive	-		appli ()	•	All ris	sks			
040 050 060 070 Cr	Off balance sheet items subject to credit risk Exposures / Transactions subject to counterparty credit risk Securities Financing Transactions Derivatives & Long Settlement Transactions From Contractual Cross Product Netting EXPOSURES ASSIGNED TO OBLIGOR GRADES OR POOLS: TOTAL	dit risk, c	liluti	on risk a	and free	e delive	-		appli () Cre	icable/) edit risl	All ris	sks untei		/ credit	
040 050 060 070 Cr	Off balance sheet items subject to credit risk Exposures / Transactions subject to counterparty credit risk Securities Financing Transactions Derivatives & Long Settlement Transactions From Contractual Cross Product Netting Exposures ASSIGNED TO OBLIGOR GRADES OR POOLS: TOTAL	dit risk, c	liluti	on risk a	and free	e delive	-		appli () Cre	icable/) edit risl ution ri	All ris k, cou isk ar	sks unter nd fre	ee de		5





What are the types of relations between tables? Normalization

Part of original not normalized Assets-D1 table







CRR/CRDIV DPM

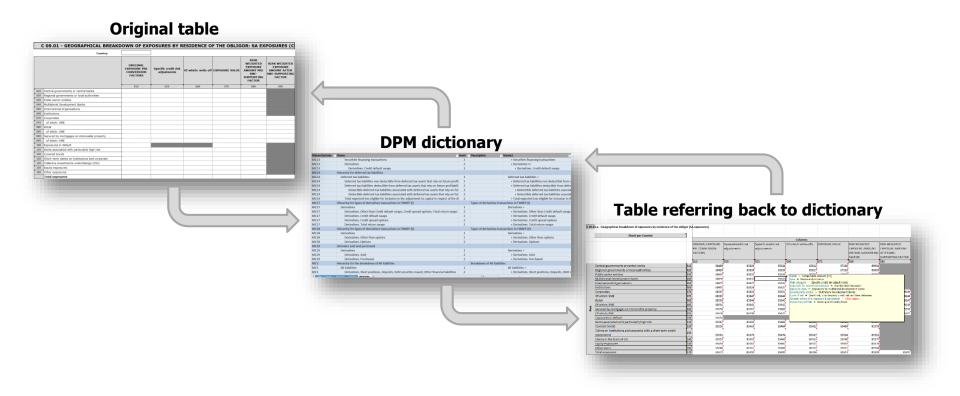
DPM tutorial

Thinking Forward.





Relation between EBA deliverables







Domains

DomainName	IsOpen	Description
Metric	FAŁSZ	Details the data type (eg monetary, percentage, string) of the data point. In XBRL, it is the "primary item". Generally, it indicates the "metrics" of the Main category provided (ie answers the question how is measured?). It should be defined for each data point. In the case of monetary values, when the data point is referred to a period of time (ie duration), the member name shall finish in "(flow)". When the member name has other terminations, the data point is referred to a date (ie "stock" or "instant").
Base items	FAŁSZ	Defines the basic conceptual meaning of a data point. Identifies the framework in which a data point is included. For FINREP, it indicates in which group of element of the financial statement should be included the data point (eg assets, liabilities, equity, income, expenses). For COREP, it indicates whether the data point should be computed in the numerator (own funds) or the denominator (exposures) of the Pillar I solvency ratio. It determines whether the data point has a "debit" or a "credit" attribute.
Main category	FAŁSZ	Specifies the nature of the item reported (ie answers the question: what is reported?). For financial instruments, defines the instrument (eg deposits, debt securities issued) or range of instruments reported. It should be defined for each data point.
Legal entity	PRAWDA	An association, corporation, partnership, proprietorship, trust, or individual that has legal standing in the eyes of law
Security	PRAWDA	Financial instrument that represents: an ownership position in a publicly-traded corporatio (stock), a creditor relationship with governmental body or a corporation (bond), or rights to ownership as represented by an option.
Securitisation	PRAWDA	Pool of individual assets packaged as a security
M Tables Domains Dimensions / Members / Hie		

- Set of information that share semantic meaning (should be easy to describe)
- When adding a new information (domain member) it must be clear if:

Existing domain should be used (domains should be mutually exclusive) **New** domain should be added

- **Could be explicit or typed** (used in case of unlimited number of rows/columns/tables)
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Dimensions

DomainName	 DimensionName 	Description
Credit quality	Exposures by Credit Quality steps at reporting date	Defines the credit quality of the securitisation exposure position to the Credit Quality Steps
		scale at the reporting date.
Credit quality	Exposures by Credit Quality steps at reporting date of	For liquidity purposes, defines the "Exposures by Credit Quality steps at reporting date" of
	the collateral	the collateral received
Currency	Currency of the collateral	Defines the currencies in which the collateral (or given or received) is denominated
Currency	Currency of the exposure	Defines the currency in which the item is denominated
Currency	Currency with significant liabilities	Defines the currencies of the significant liabilities
Event type	Event Type	Defines the type of event that has generated an operational loss.
Exposure classes	Exposure class	Defines the exposure class for capital requirement purposes
Exposure classes	Exposure class before reassignment	Defines the Exposure class an exposure was assigned to before reassignment to the current
		exposure class. Applicable for the exposure classes "Exposures in default" and "Exposures
		secured by mortgages on immovable property" in the Standardised Approach.
Exposure classes	Exposure class of the collateral given	For Liquidity purposes, defines the exposure class of the collateral given
Exposure classes	Exposure class of the collateral received	For Liquidity purposes, defines the exposure class of the collateral received
Exposure classes	Exposure classes used for weightening purposes	For Leverage Ratio templates, defines the assimilated EC used for weightening purposes
External ratings	Credit rating agency /Covered bond regime	For each issuance of covered bonds, specifies both the credit rating that rates the issuance
		and the local statutory regime
External ratings	Use of external ratings	Defines the type of credit external ratings applying to the exposure.
Geographical area	Country of the market	Defined the country in which is located the market on which the instrument is traded.
Geographical area	Country where the exposure is generated	Defines the country where the exposure is generated.
Geographical area	Residence of counterparty	Defines the geographical area where the counterparty of the contract or transaction resides.
Impairment	Forbearance status	Identifies the financial assets and off-balance sheet items with forbearance measures and, if
mpannene		applicable, the type of forbearance measures
Impairment	Impairment status	Status for monitoring credit quality of financial assets and off-balance sheet items (eg past
inputtione		due, impaired, defaulted).
Impairment	Performing status	Identifies the performing status of financial assets and off-balance sheet items (performing,
	sions Members Hierarchies	

- Perspective to analyze the domain (should be easy to describe)
- More than one dimension could be used to determine a meaning of one domain
- Single dimension can't refer to more than one domain

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Domain members

DomainName	 MemberName 	DataType 👻	PeriodType 👻	Restricted To Members In Hierarchy
Metric	Compliance with the retention requirement	Boolean [b]	Stock/Instant [i]	
/letric	Institution or equivalent	Boolean [b]	Stock/Instant [i]	
Metric	Is a group	Boolean [b]	Stock/Instant [i]	
Metric	Is a transaction where there is an exposure to underlying assets	Boolean [b]	Stock/Instant [i]	
Metric	Accounting standard	Code [e]	Stock/Instant [i]	AS1
/letric	Accounting treatment of the securitisation	Code [e]	Stock/Instant [i]	ZZ1
Metric	Approach used for the securitised exposures	Code [e]	Stock/Instant [i]	AP23
ietric	Origination date of the securitisation	Date [d]	Stock/instant [i]	
Metric	Maturity value (days)	Integer [i]	Stock/Instant [i]	
/letric	Number of breaches during reporting period	Integer [i]	Stock/Instant [i]	
/letric	Value used for market risk, to be deducted from own funds	Monetary [m]	Stock/Instant [i]	
/letric	VAR	Monetary [m]	Stock/Instant [i]	
/letric	Applicable percentage limit for institutions	Percentage [p]	Stock/Instant [i]	
/letric	Average risk weight	Percentage [p]	Stock/Instant [i]	
/letric	Name of Holding entity	String [s]	Stock/Instant [i]	
/letric	Prudential consolidation	String [s]	Stock/Instant [i]	
/letric	Scope of data (levels of consolidation code)	String [s]	Stock/Instant [i]	
ase items	Assets			
ase items	Equity			
Aain category	Capital conservation buffer			
Aain category	Capital conservation buffer, Conservation buffer due to macro-prudential or systemic risk			
	identified at the level of a Member State			
Aain category	Capital instruments recognised temporally equivalent as minority interests			
Aain category	Capital instruments recognised temporally equivalent as minority interests and instruments			
	including minority interests			
Aain category	Capital ratio			
Main category	Capital ratio including Pillar II adjustments			
N Tables / Domains / Dimensions , Members	Hierarchies 🖉 🖉 🔲 🛛 🖉			

Members of two domains are not typical:

Metric. Members of this domain cover: (i) Data type information (also specific case when value is restricted to members of predefined subdomain) and (ii) Period type

Base items. Members of this domain are potential containers of debit/credit attribute

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Hierarchies of domain members

HierarchyCode	- Name	level	 Description 	Name2
MC23	Securities financing transactions	2		+ Securities financing transactions
MC23	Derivatives	2		+ Derivatives >=
MC23	Derivatives. Credit default swaps	3		+ Derivatives. Credit default swaps
MC24	Hierarchy for deferred tax liabilities			
MC24	Deferred tax liabilities	1		Deferred tax liabilities =
MC24	Deferred tax liabilities non deductible from deferred tax assets that rely on future profit	2		+ Deferred tax liabilities non deductible from
MC24	Deferred tax liabilities deductible from deferred tax assets that rely on future profitabili	2		+ Deferred tax liabilities deductible from defe
MC24	Deductible deferred tax liabilities associated with deferred tax assets that rely on fut	3		+ Deductible deferred tax liabilities associa
AC24	Deductible deferred tax liabilities associated with deferred tax assets that rely on fut	3		+ Deductible deferred tax liabilities associa
MC24	Total expected loss eligible for inclusion in the adjustment to capital in respect of the d	i 2		+ Total expected loss eligible for inclusion in t
MC27	Hierarchy for types of derivatives transactions in FINREP (I)		Types of derivatives trans	sactions in FINREP (I)
MC27	Derivatives	1		Derivatives =
AC27	Derivatives. Other than Credit default swaps, Credit spread options, Total return swaps	2		+ Derivatives. Other than Credit default swap
MC27	Derivatives. Credit default swaps	2		+ Derivatives. Credit default swaps
MC27	Derivatives. Credit spread options	2		+ Derivatives. Credit spread options
MC27	Derivatives. Total return swaps	2		+ Derivatives. Total return swaps
VIC28	Hierarchy for types of derivatives transactions in FINREP (II)		Types of derivatives trans	sactions in FINREP (II)
MC28	Derivatives	1		Derivatives =
MC28	Derivatives. Other than options	2		+ Derivatives. Other than options
MC28	Derivatives. Options	2		+ Derivatives. Options
AC29	Derivates sold and purchased			
AC29	Derivatives	1		Derivatives =
ИС29	Derivatives. Sold	2		+ Derivatives. Sold
AC29	Derivatives. Purchased	2		+ Derivatives. Purchased
ИСЗ	Hierarchy for the breakdown of All liabilities		Breakdown of All liabiliti	es
ЛСЗ	All liabilities	1		All liabilities =
ИСЗ	Derivatives, Short positions, Deposits, Debt securities issued, Other financial liabilities	2		+ Derivatives, Short positions, Deposits, Debt
비 Tables 🖌 Domains 🖌	Dimensions 🖌 Members 🚬 Hierarchies ⁄ 🕲 🗸		•	III

- Informs about relation (also arithmetical) between members of subdomain
- There could be more than one hierarchy disaggregating a domain member (so called alternative hierarchies)
- Members of subdomain could be potential value of a metric



How to refer the CRR/CRDIV DPM dictionary from tables?

Sheet per Country								
Sheet per Country					Columns			
		ORIGINAL EXPOSURE	General credit risk	Specific credit risk		EXPOSURE VALUE	RISK WEIGHTED	RISK WEIGHTED
		PRE CONVERSION	adjustments	adjustments			EXPOSURE AMOUNT	EXPOSURE AMOUN
		FACTORS		1			PRE SME-SUPPORTING	AFTER SME-
							FACTOR	SUPPORTING FACT
		010	050	055	060	075	080	090
Central governments or central banks	010	88489	85823	85824	85812	87188	89004	
Regional governments or local authorities	020	88499	85838	85839	85817	87193	89009	
Public sector entities	030	88497	85835	85836	Metric = Computable	amount [mi]	00000	`
Multilateral Development Banks	040	88495	85832	85833	Base = Memorandum	items		
International Organisations	050	88493	85829	85830		ific credit risk adjustments purposes = Standardise	d	
Institutions	060	88491	85826	85827		sures to multilateral develo		
Corporates	070	88507	85850	85851	Counterparty sector =	Multilateral Development	Banks	
Of which: SME	075	88505	85847	85848		isk, counterparty credit ris		
Retail	080	88503	85844	85845		Banking and trading book	ey value>	
Of which: SME	085	88501	85841	85842				
Secured by mortgages on immovable property	090	85558	85467	85468				
Of which: SME	095	85536	85440	85441				
Exposures in default	100	85555						
Items associated with particularly high risk	110	85567	85485	85486		00010	00007	
Covered bonds	120	85556	85463	85464	85422	85499	85576	
Claims on institutions and corporate with a short-term credit	130							
assessment	150	85561	85473	85474	85427	85504	85581	
Claims in the form of CIU	140	85557	85465	85466	85423	85500	85577	
Equity exposures	150	85554	85461	85462	85421	85497	85575	
Other items	160	85568	85487	85488	85434	85511	85588	
Total exposures	170	85571	85492	85493	85436	85513	85590	85

• Is information from dictionary explicitly reflected in "Table Layout and Data Point Categorization" file?

Yes: dimension, domain member

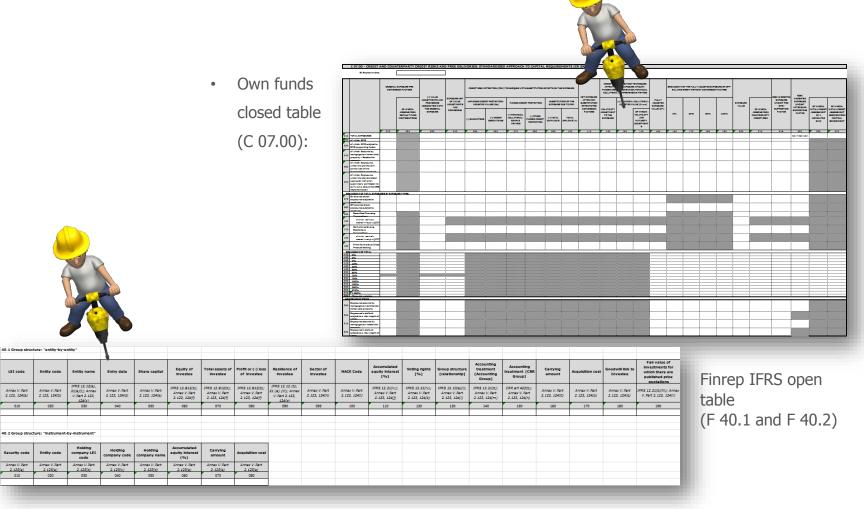
No: domain (only implicitly), hierarchy

• "Table Layout and Data Point Categorization" should not be analyzed in isolation from the hierarchical information about domain members









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Sol2 DPM

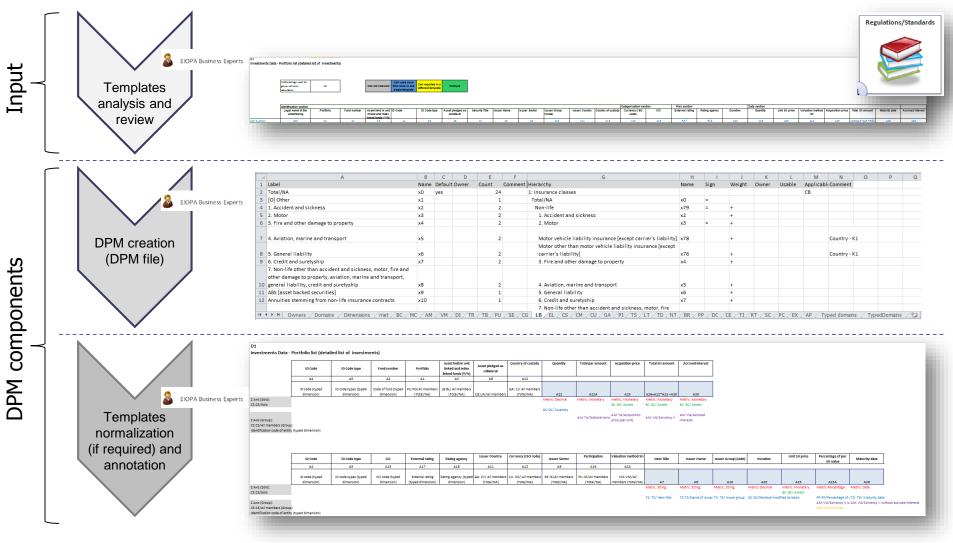
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Sol2 DPM components







DPM dictionary file – details (1)

1 Label					E	F	G	H		J	(L	M	N	0
		Name	Default	Owner	Count	Comment	Hierarchy	Name	e Sign	Weight Ow	ner Usabl	e Applicable dim	Comment	
2 Total/NA		x0	yes		17	7	1: Type of assets and/or liabilities					AL		
3 Article 223 deduction		x1			1	2	Total/NA	x0	=					
4 Article 228 deduction		x2			1	2	Derivatives	x32	=	+				
5 Article 229 deduction		x3			1	2	Credit derivatives	x25		+				
6 Article 71 POF1 [1] d	eduction	x4			1	2	Derivatives other than credit derivatives	x37		+				
7 Article 71 POF1 [1] [2	deduction	x5			1	2	Equity instruments, loans and bonds	x43	=	+				
8 Article 71 POF1 [2] d	eduction	x6			1	2	Equity instruments	x39		+				
9 Bonds		x7			3	3	Loans and bonds	x82	=	+				
10 Bonds/Debt - collater	alised	x8			1	2	Loans and bonds other than structured notes and collateralised	s x83		+				
11 Bonds/Debt - uncolla	teralised	x9			1	2	Structured notes and collateralised securities [other than tradak	x138		+				
12 Bonds securities othe	r than structured notes and collateralised secu	u x10			3	3	Structured notes and collateralised securities [tradable that are	x140		+				
13 Cash		x11			2	2	Other than derivatives, equity instruments and loans and bonds	x95	=	+				
14 Claim provisions [oth	er than local GAAP specific]	x12			1	1	Deferred tax	x30		+				
15 Claim provisions othe	er than new [other than local GAAP specific]	x13			1	1	Other than derivatives, equity instruments, loans, bonds and def	e x96		+				
16 Claims recoverables		x14			1	2	2: Type of transaction					Π	IGT1, IGT2,	IGT3, IGT4
17 Closed	Owners Z Domains Z Dimensions Z met HD Z m			1 / 101 / 1				x0	=		CC / DC /			

٠

List of dimensions: perspectives for subdomains analysis (i.e. Original currency or Reporting currency)
List of Metrics used in the dictionary. Each represents different data type List of basic concepts identifying the most generic information of every data point (i.e. Assets, Claims paid)

- It is a dictionary of information used in tables (later explicitly indicated in annotation) identifying the content of every datapoint and its relation/differences to other datapoints:
 - **Domains** (unstructured list of domain members, default member can be identified)
 - **Subdomains** (could be hierarchical, identifying arithmetical relation between domain members)
 - **Dimension** (perspective to analyze a domain members, could be **typed** or **explicit**)





DPM dictionary file – details (2)

List of all domain members of particular **domain**

Information about hierarchy of domain members of **subdomain**

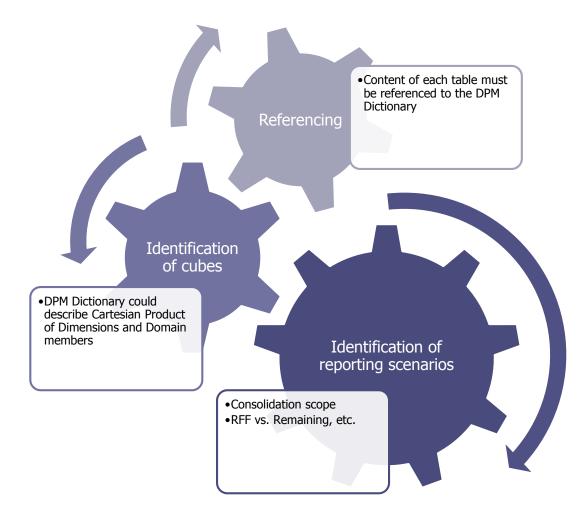
Dimension (perspective for domain/subdomain analysis)

Label	Name	Default Owner	Count Comm	n Hierarchy	Nan	ne <u>SigW</u> eij	ght Owner	Applicable Comment
Total/NA	хO	yes s2c	24	1: Insurance classes			s2c	CB
1. Accident and sickness	x1	s2c	2	Total/NA	x0	=		
2. Motor	x2	s2c	2	Non-life	x75	= +		
3. Fire and other damage to property	x3	s2c	2	1. Accident and sickness	x1	+		
4. Aviation, marine and transport	x4	s2c	2	2. Motor	x2	= +		
5. General liability	x5	s2c	2	Motor vehicle liability insurance [except carrier's liabili	ity] x74	+		S.04.01
6. Credit and suretyship	x6	s2c	2	Motor other than motor vehicle liability insurance exce	pt carriex72	+		S.04.01
7. Non-life other than accident and sickness, motor, fire and othe	x7	s2c	2	3. Fire and other damage to property	х3	+		
ABS [asset backed securities]	x8	s2c	1	4. Aviation, marine and transport	x4	+		
Annuities stemming from non-life insurance contracts	x9	s2c	2	5. General liability	x5	+		Table,
Annuities stemming from non-life insurance contracts and relati	<mark>٤×10</mark>	s2c	8	6. Credit and suretyship	x6	+		
Annuities stemming from non-life insurance contracts and relati	£x11	s2c	8	7. Non-life other than accident and sickness, motor, fire and	d other c x7	+		where the
Assistance [direct business and accepted proportional reinsurar	: x12	s2c	8	Life	x60	= +		information
Branch	x13	s2c	1	 The life insurance referred to in points [a][i], [ii] and [iii] 	of Artic x48	+		iniomation
Casualty [accepted non-proportional reinsurance]	x14	s2c	8	 Marriage assurance, birth assurance; 	x49	+		is required
CDO [collateralised debt obligations]	x15	s2c	1	III. The insurance referred to in points [a][i] and [ii] of Artic	tle 2[3], x50	+		is required
CDOp [credit default options]	x16	s2c	1	IV. Permanent health insurance, referred to in point [a [iv]	of Articl x57	+		
CDS [credit default swaps]	x17	s2c	1	V. Tontines, referred to in point [b][i] of Article 2[3];	x12	1 +		
CLN [credit linked notes and deposits]	x18	s2c	1	VI. Capital redemption operations, referred to in point [b][i	i] of Arti x12	3 +		
CLO [collateralised loan obligations]	x19	s2c	1	VII. Management of group pension funds, referred to it poi	nt [b][iii x12	4 +		
CMBS [commercial mortgage backed securities]	x20	s2c	1	VIII. The operations referred to in point [b][v] of Article 2[3]]; x12	5 +		
CMO [collateralised mortgage obligations]	x21	s2c	1	IX. The operations referred to in Article 2[3][c]	x58	+		





Purpose of annotated templates

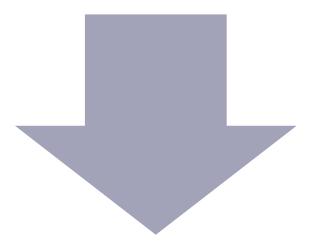




Pros and cons for highly dimensional DPM

Pros

- High quality of the model
- Explicit dependencies between concepts
- Change management with stable Metrics
- Use of breakdowns for internal purposes (databases, BI...)
- Potential bridge with other reporting frameworks
- No need for arbitrary decisions (Metrics vs. Dimensions)
- Data centric model (template independent)



Cons

- Less readability of taxonomies
- Larger instances and lower performances (more breakdowns used)
- More time and resources required for preparation on NSA side
- More complex formulas / assertions with requirement to use dimension filters

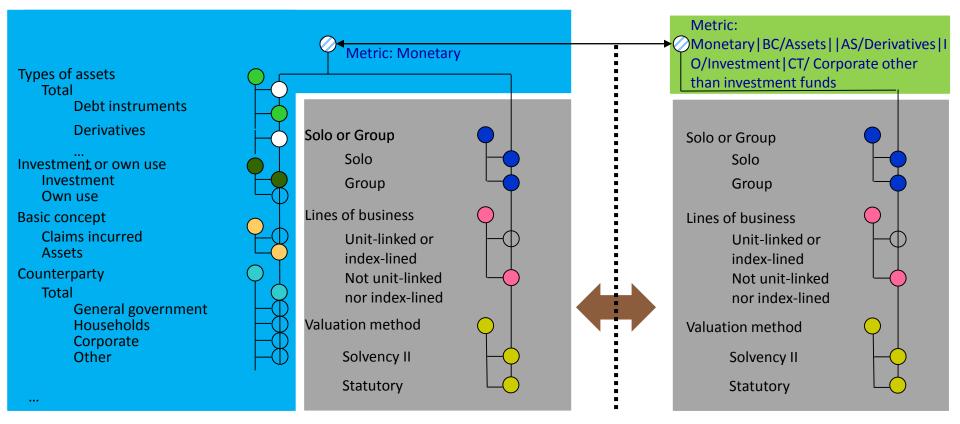




Organization into two layers

Highly dimensional approach (HD)

Moderate dimensional approach (MD)



Common part of Dictionary





Let's analyze the Sol2 DPM

$ \begin{array}{ $						
$ = \frac{1}{100} = \frac{1}{100} + \frac{1}{100} + \frac{1}{100} = \frac{1}{100} + \frac$	4		C			
Image: Internet	1 Label	Name (Owner Data type Period type			
$ = \frac{1}{1000} \frac{1}{1$						
$ \begin{aligned} & Match bank for the many prove of status match and and and and and and and and and and$						
$ \frac{1}{1} = \frac{1}{1} \frac$	Metric: Date [TD:TD/Date of formal approval of internal model	dis4 s			450	Matrix: String 15: TS/Valuation basis for statutory accounts value [111] Matrix: Strin 75: TS/Valuation basis for a
Inter- Part Value Value Construction Part Value <		di15 i	(Solvency II		and a second to a second of a second second second (1) where so is it is the second second second second second
		pi16 1	Assets			
Image: Addition in the problem in the prob						
Image: International	9 Metric: Decimal (DCDC/Age of beneficiaries (years)			1853575		
	Metric: Decimal [DCDC/Age of beneficiaries (years) Metric: Decimal [DCDC/Residual modified duration	pils 1	Goodwill		value	Metric: Monetary IBC BC/Assets I I MC A5/Goodwill I PU IO/Other than inves Metric: Mon RC BC/Assets MC 45/Goodwi
$\frac{1}{100}$ (m)		pi18 1			value AS1	
$\frac{1}{100} = \frac{1}{100} $		pi18 1 1119 1 1120 1 1121 1	Deferred acquisition costs	A2	value AS1 AS24	Metric: Monetary(BC/8C/Assets)(MC/AS/Deferred acquisition cost)PU:IO/ Metric: Mon BC/8C/Assets MC/AS/Deferred
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Extending DPMs

DPM tutorial

Thinking Forward.



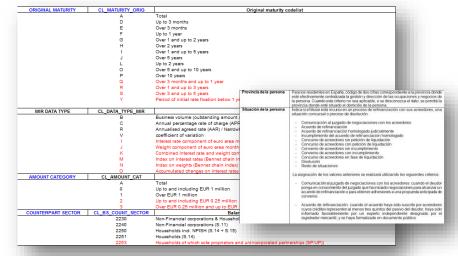


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Extending EBA data model (BdE case) Why?

- To avoid the risk of using multiple sector specific dictionaries
 To benefit from JEGR achievements
- To help banks to understand properly reporting requirements
 Positive feedback after defining ECB and national statistical reporting
 requirements using DPM approach in 2010
- To benefit from stable solutions
 Credit register dictionary
 ECB dictionary

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Extending EBA data model (BdE case) Who?

- Top level business experts responsible for definition of reporting requirements
 - Familiar with data modeling, especially DPM approach

Represented units:

- Supervisory reporting
 - Financial reporting
 - Capital adequacy reporting

Credit register



Statistical reporting (national extension of ECB requirements)





Extending EBA data model (BdE case) How?



Additional information for solo reporting

ECB statistics for balance sheet and interest rates



EBA DPM

- New components added only when it is necessary
- Changes in data model possible on this level
- Dictionary reorganized to reflect EBA DPM architecture
- Reusing definitions of EBA when possible
- Dictionary reorganized to reflect EBA DPM architecture
- Reusing definitions of EBA when possible
- Core of comprehensive dictionary





Extending EBA data model (BdE case) Challenges

• Stability of EBA deliverables

Official tables vs. DPM vs. XBRL taxonomy Change management

• Differences in modelling between EBA and NSA

Is "held for sale" additional member of accounting portfolio or a new dimension?Is EBA modeling the only option or two different modeling approaches are possible (with some mapping option)?

• Application of DPM/XBRL to large open tables

DPM is technology neutral description of metadata so technologies other than XBRL are possible (if necessary)



Let's see how extending EBA DPM looks in practice

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• Work in progress





Thank you

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Thinking Forward.