# OESTERREICHISCHE NATIONALBANK EUROSYSTEM

# Strategy and Developement In Austrian Bank-reporting

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# Agenda



**Statistics** 

**DeNB** 

- Synergies of one reportingsystem
- Two Concepts One System
- Facing the challenge
- · Problems at the way forward
- Developments in past and future



- Why Data Integration?
- Challenges and Problematic Aspects
- START Objective "Common Reporting Platform"

Data model

**ØNB** 



The Competence Center for Financial Statistics



*<b>ENB* 



#### **Milestones** Timeline





Previous projects to improve

supervisory reporting I

**Risk oriented supervisory reporting** 

effective date: 2007/2008



€)NF

Motivation:

- Promoting cost-efficient off-site analysis instead of expensive on-site inspections
- Changes in the Austrian banking sector (groups, subsidiaries)
- Covering new supervisory and analytical processes (risk orientation)
  - credit risks
  - interest rate risks
  - stock risks
  - maturity risks
  - foreign exchange risks
  - country risks
- Convergence and harmonization at the EU level / adjustments to Basel II requirements
  - COREP / FINREP
- Compliance with international standards (OECD, IMF,...)



## Previous projects to improve

# supervisory reporting II

	Unconsolidated	Consolidated	Foreign subsidiary	Branch abroad
Monthly	Credit register Report on compliance with regulatory standards (CA template, large exposures, …)	Report on compliance with regulatory standards (CA template, large exposures, …)		
Quarterly	Report of condition and income (Balance sheet, profit & loss account and risk disclosure) Report on compliance with regulatory standards (COREP details)	Report of condition and income (Balance sheet, profit & loss account and risk disclosure) (§59a BWG: FINREP) Report on compliance with regulatory standards (COREP details)	Report of condition and income (Balance sheet, profit & loss account and risk disclosure) (§59a BWG: FINREP)	Balance sheet disclosure
Annually	External auditors' prudential report + hidden reserves Annual financial statement	Loss database (on highest consolidation stage) Annual financial statement		
Ad hoc reporting		Banks' primary data		



Previous projects to improve

supervisory reporting III

# **Evolution of the Central Credit Register**

2003

- Credit Risk Mitigation Techniques based on internal risk management
- Guarantess
- Derivative products yes/no
- Long term claims on other banks
- Rating information



2008

- Credit Risk Mitigation Techniques according to Basel II
- Derivative Products (including Credit Derivatives)
- Positive market values of derivate products (method of measuring inherent credit risk)
- Long term and short term claims on other banks
- Probability of Default
- Risk Weighted Assets (RWA)
- Expected Loss

#### Using the synergies of one reporting-system



<sup>1)</sup> organisational structure1997 - 2012

HST

Department



# **Two Reporting Concepts - One Reporting System**









ECB, OeNB-Economics Dpt., Eurostat, IMF, OECD, Statistics Austria, Public/Press

# **Department of Statistics**

#### Supervisory Statistics, Models and Credit Quality Assessment

statistical analysis and data interpretation for macro- and micro-prudential analysis External Statistics, Financial Accounts and Monetary and Financial Statistics

Secondary statistics and data interpretation for the customers

Statistical Information Systems and Data Management

single point of contact for all reporting entities from all economic sectors, quality assurance

Reporting Entities: financial corporations

non-financial corporations

general government

partnerinstitutions



#### Key features of the "New Statistics Department"



#### institutional and personnel

for data providers and reporting institutions



BANK

*<b>ENB* 

targeting distinct customers of high-end statistical



multi-use of data





## Problems at the way forward

# Legal boundaries regarding data dissemination/quality assurance





*<b>ONB* 

#### **Different accounting standards**



different definitions, concepts, classifications



#### Why Data Integration?





Consistency of the data



Quality of the data



#### START - Objective "Common Reporting Platform"





#### From Smart-Cubes to the Final Products





# Agenda: Data Model



- Organisational set up
  - Mandate and aims
  - Working group
  - Work plan
- Work program
  - Design principles
  - Development steps
  - Time frame



etails

- Data model
  - Principle process
  - Data model and basic cube
  - Smart cube
- General aspects
  - Experiences / Pros and cons
  - Legal aspects
  - Data point model

Framework

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Set up of a joined working group:

Organisational set up

Start of a cooperation between OeNB and banks: 1<sup>st</sup> quarter 2012

• Mandating of a working group



- a logical data model, including
  - all micro data necessary to fulfil legal reporting requirements,
  - all master file data (securities, counterparties) necessary for the production of reports
  - supplemented by passive data
- algorithms to produce reports: enrichment and aggregation
- checking procedures
- Members:
  - experts of commercial banks and OeNB
  - All important banks represented





Set up of a joined working group:

Working program

- Development principles
  - Entity relationship model
    - Third normal form
      - No redundancy: One EURO is only once in the system
    - Complete and disjoint
      - No grouping, no "thereof" Information
- Development steps
  - 1. step: reports before "calculation engine RWA"; before consolidation
  - 2. step: considering consolidation
  - 3. step: expanding the model to data after "calculation engine RWA"
  - 4. step: integration of all aspects
- Time Frame
  - 1<sup>st</sup> and 2<sup>nd</sup> step: to be finished by end of January 2013
  - 1<sup>st</sup> draft of the complete model: end of March 2013
  - Finalisation by end of June 2013





#### Data model: principle process

From the IT system of the reporting bank (savings, loans, ...) data are uploaded into the

Basic-Cube; data warehouse for reporting purposes: The reporting agent's view

Smart-Cube (in the reporting bank): The central bank's view

Generated by summarising and aggregating of data in the basic cube

(reported) Smart-Cube(s) (in the OeNB) (including Data for checking purposes)

OeNB-views, derived from Smart Cubes for different purposes

Credit register & Supervisory statistics

External statistics, Financial Accounts, Securities



#### Data model, basic cube, data warehouse:







#### Data model, basic cube: main components

- The main tables of the **BASIC CUBE** data model are
  - Contract Table
  - Counterparty Table
    - Reporting bank's view
    - Central bank's view
  - Value types
- The **BASIC CUBE** represents the data from the view of a client of the data ware house
  - A client of the data ware house might be
    - An Austrian bank without foreign branches
    - A branch of an Austrian bank abroad
    - A subsidiary company in Austria or abroad
    - A Financial Vehicle Corporation (in case of asset trading)
- The **BASIC CUBE** is a structured presentation of the banking business from a bank's point of view for reporting purposes
  - Data are snap shots at end of period



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#### Data model: Contract table

- The **CONTRACT TABLE** of the data model (basic cube, data warehouse) includes
  - All contracts (accounts) of a bank, inter alia all
    - Savings accounts, loans, deposits, securities, derivatives, promissory notes on a business by business level
  - Connects all contracts to the counterparty table
  - Connects all contracts to the IT-System of the bank (bank internal reference table)
  - Connects all contracts to the securities master data where applicable
  - Connects all contracts to auxiliary tables as there are
    - Events (change of interest rate, change of credit line, …)
    - Redemption plan
    - Lifetime Types (estimated repayment rates for saving accounts etc.)
    - Relations to other contracts
    - Collateral value risk composition
  - Main attribute (columns of the Contract table) are inter alia
    - Contract classification, important features of a contract depending on the contract classification, like closing date, usage for loans, etc.
    - Up to 70 different attributes have been identified until now

AUSZUG



#### Data model: Counterparty table

- The COUNTERPARTY TABLE (MS) of the data model (basic cube, data warehouse) includes all attributes related to the counterpart of a contract, from the bank's point of view
  - Main attributes (columns of the Counterparty table) are inter alia
    - ESA2010 Code, Nace, Country of residence, different identifications as link to various registers, etc. ...
    - Up to 30 Attributes have been identified till know
  - One important link is the link to the <u>register of the OeNB</u>: The classification of counterparties as documented in the register of the OeNB and the Austrian NSI will be made accessible for the banks
  - The counterparties can be grouped (Counterparty relations)
  - The counterparties can be part (consolidation object mapping) of a consolidation object (summarising all companies to be consolidated due to a special concept)





#### Data model, basic cube: Value table

- The VALUE TYPES TABLE of the data model (basic cube, data warehouse) includes all amounts related to a single contract, as there are e.g.:
  - Stock at
    - nominal value,
    - market value,
    - asset value,
    - risk weighted asset,
  - Transactions like
    - new lending business,
    - net changes, transactions,
    - x-change rate adjustments,
    - price adjustments,
    - reclassifications,
  - Other information like
    - loan loss provisions,
    - general allowances, if allocated to individual contracts

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#### From the basic cube to the smart cube

- Data loaded from the bank's IT-system into the basic cube are enriched and transferred.
  - Examples:
    - Original and residual maturity according to the maturity ranges for reporting purposes are calculated from the single business dates
    - The volume of new business for each contract is calculated, where necessary
- balance has to be kept between
  - calculation and derivation of data within the model
  - calculation of data in the front systems of the banks (and loading up of the results into the basic cube)
  - Example
    - Should the calculation of own funds (standardized approach) be a function of the data model or not?



#### Data model: principle process

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(reported) **Smart-Cube(s)** (in the OeNB) (including Data for checking purposes)

OeNB-views, derived from smart cubes for different purposes

Credit register & Supervisory statistics External statistics, Financial Accounts, Securities



#### The smart cube(s): basic ideas

- Presentation of content to be reported from the receivers (the NCB's) point of view
- Derivation of smart cubes from one consistent data base
  - Selection of contracts (e.g.: on balance; off balance)
  - Selection of dimensions (attributes in the basic cube)
  - Selection of granularity (all countries, country group)
  - Selection of amount types (book value, market value, ...)
  - Application of aggregation rules (sum, weighted average)
- Each Contract should be represented only once:
  - No aggregated sums
  - No "thereof"-positions
- As few smart cubes as possible, as many smart cubes as necessary



## Expected advantages

- Increase in efficiency and improvement in quality
  - Less errors
    - due to more precise and <u>formal</u> definitions supplementing the verbal descriptions
    - due to standardized application of definitions
    - one work stream / data flow
    - unified data structure defines a common language
    - better consistency
  - Less checking and correction effort
  - Reconciliation of different concepts and views
  - More flexibility for analysis
    - Easier introduction of new requirements
    - Easier formulation und faster realisation of ad-hoc requests
  - Possible use of the data for bank internal reporting



# **€NB**

## Advantages: less errors

## • due to more precise definitions

- Although a lot of efforts are made to formulate clear reporting instructions, these instructions are implemented heterogeneously in the programs of the banks
  - On a more technical level:
    - Rounding procedures
    - Selection process
  - On a business level
    - Definitions of collateral
- The process of defining a data ware house and its functions in cooperation of banks and central bank reveals different interpretation of reporting requirements and allows sharpening of reporting rules
- A more formal definition supports a more standardized technical implementation of reporting rules



## Advantages: reconciliation of

# different concepts and views

#### Host-Country Principle

Home-Country Principle

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Advantages: reconciliation of

different concepts and views









### Possible risks: legal situation

- Does the legal situation allow to combine reporting requirements based on different regulations?
  - For national regulations
    - Foreign exchange law
    - Banking act
    - Central bank act
  - For EU regulations
    - May ITS standards be adapted for national purposes?
- In case of sufficient legal flexibility the smart cubes (to be forwarded to the OeNB) will be more granular and cover a broader field of requirements
- In case of more strict interpretation of the legal situation more smart cubes will be defined, each of which tailor made for more restricted purposes





## Possible risks: technical restrictions

- The technical risks are the same:
  - on the reporting agents side
  - on the compilers side
- Data Volume
  - All contracts have to be loaded into the basic cube (data ware house on the reporting agents side)
    - All saving accounts
    - All loans
  - Because of the higher granularity of the reports (smart cubes) higher data volume has to be processed also on the compilers side
    - Timeliness!
  - Challenge
    - Loading time, processing time, checking algorithms
  - Solutions
    - Improve computing capacity
    - Pre-aggregation







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# Way forward

- These days the banks have decided
  - Intensify the work on the integrated data model
  - To finalise the specifications by mid 2013
  - To consider also COREP and FINREP
  - To prepare for including the calculation of the of own funds (standardized approach) as a function of the data model
- Growing international interest
  - Contact with JEGR
  - Presentation at Centre for Central Banking Studies (CCBS): The future of regulatory data and analytics, London, January 2013
- There is now doubt: data models will play a crucial role in the future for reporting purposes

