XBRL

Past, present and future

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Agenda

• Brief history of XBRL
  – The Extensible Business Reporting Language

• XBRL & SDMX
  – Differences and similarities

• Future
  – Ongoing XBRL evolution
  – Opportunities for collaboration
Global open standard

- 20+ Years
- 210+ Mandates
- 130+ Regulators
- 60+ Countries
- 25M+ Companies
XBRL Reports

- Dimensional data for
  - Annual financials
  - Tax data
  - Credit risk
  - Water management
  - Sustainability
  - ...

- Each report is an unordered collection of facts qualified by dimensions

- Concept: ifrs-full:RevenueAndOperatingIncome
- Period: 2020
- Unit: iso4217:USD
- Entity: lei:MLU0ZO3ML4LN2LL2TL39
- Value: 49552000000
Inline XBRL Reports (iXBRL)

- HTML enriched with semantic XBRL tags
- Developed for HMRC (UK) in 2010 – 2 million filings/year
- Also required for listed companies in US, Japan, and EU
- Data is publicly available
XBRL Taxonomies

- Concepts
- Dimensions
- Types
- Labels
- References
- Calculations
- Presentation trees
- Cube definitions
- Dimensional assertions
- Pivot table rendering instructions

https://shorturl.at/defU4
https://xbrlview.fasb.org/
### XBRL Report, rendered and validated

#### Scope of consolidation: Consolidated

<table>
<thead>
<tr>
<th>Credit risk at credit performance rating</th>
<th>Commercial</th>
<th>Housing</th>
<th>Other private</th>
<th>Total</th>
<th>Commercial</th>
<th>Housing</th>
<th>Other private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance sheet credit risk</td>
<td>-£1,000,000.00</td>
<td>£1,000,000.00</td>
<td>-£1,000,000.00</td>
<td>-£1,300,000.00</td>
<td>-£1,000,000.00</td>
<td>£1,000,000.00</td>
<td>-£1,000,000.00</td>
<td>-£1,300,000.00</td>
</tr>
<tr>
<td>Off-balance sheet credit risk</td>
<td>-£1.00</td>
<td>-£1.00</td>
<td>£1.00</td>
<td>-£1.00</td>
<td>£999,999.99</td>
<td>£1,000,000.00</td>
<td>-£699,999.99</td>
<td>£1,300,000.00</td>
</tr>
<tr>
<td>Total credit risk at credit performance rating</td>
<td>-£1,000,000.00</td>
<td>£1,000,000.00</td>
<td>-£1,000,000.00</td>
<td>-£1,300,000.00</td>
<td>-£2.00</td>
<td>£1,000,000.00</td>
<td>-£1,000,000.00</td>
<td>-£2.00</td>
</tr>
</tbody>
</table>

Credit risk that is not rated as performing credit

| Non problematic                        | £999,999.99 | -£999,999.99 | -£1,000,000.00 | -£1,300,000.00 | -£1,000,000.00 | £1,000,000.00 | -£999,999.99 | £1,300,000.00 |
| Problematic performing                 | -£1,000,000.00 | -£1.00    | £999,999.99   | -£2.00    | -£1,000,000.00 | £1,000,000.00 | -£1,000,000.00 | £1,300,000.00 |
| Problematic nonperforming             | £1,000,000.00 | £1,000,000.00 | -£1,000,000.00 | -£1,300,000.00 | £1,000,000.00 | -£999,999.99  | -£1,000,000.00 | -£1,300,000.00 |
| Total balance sheet credit risk        | £1,000,000.00 | £1,000,000.00 | -£1,000,000.00 | -£1,300,000.00 | -£1,000,000.00 | £1,000,000.00 | -£999,999.99  | £1,300,000.00 |
| Off-balance sheet credit risk          | £0.00      | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | -£2.00    | £1.00         | £1.00         |
| Total credit risk not at credit performance rating | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | -£2.00    | £1.00         | £1.00         |
| Of which: Performing debts in arrears of 90 days or more | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | £1,000,000.00 | -£2.00    | £1.00         | £1.00         |
| Overall credit risk to the public      | £0.00      | £1.00      | £1.00         | -£1,000,000.00 | -£999,999.99  | £0.00     | -£1.00      | £1.00         |

Nonperforming assets

| Nonperforming debts                    | -£999,999.99 | £0.00     | £0.00         | -£1,300,000.00 | -£1.00     | £1.00     | £1.00         |
| Assets received in respect of credit repaid | £999,999.99  | £1,000,000.00 | -£1,000,000.00 | £1,000,000.00 | -£1,000,000.00 | -£2.00 |
| Total public non performing assets      | £0.00       | £1,000,000.00 | -£1,000,000.00 | £0.00         | -£1,000,000.00 | £1,000,000.00 | -£1,000,000.00 | £1,000,000.00
XBRL’s historic strengths & weaknesses

- **Reliability**
  - Comprehensive validation

- **Flexibility**
  - Proven in many countries and domains

- **Extensibility**
  - Mix international, national and company-specific metadata

- **Interoperability**
  - Large range of mature commercial and open source software
  - Conformance suites and certification

- **Verbosity**
  - XML, XML Schema, XLink

- **Complexity**
  - DTS, DRS, Linkbases, arcroleTypes, substitution groups

- **Comparability**
  - Company-specific extensions can be overused

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Recent improvements

• **Open Information Model (OIM)**
  – Syntax-independent dimensional model
  – Drops complex, low-value features

• **xBRL-JSON**
  – Simplest, clearest expression of the model

• **xBRL-CSV**
  – Suitable for granular data ("microdata" in SDMX)
## SDMX vs XBRL – Common features

<table>
<thead>
<tr>
<th>Feature</th>
<th>SDMX</th>
<th>XBRL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data document</td>
<td>Message</td>
<td>Report</td>
</tr>
<tr>
<td>Data item</td>
<td>Observation</td>
<td>Fact</td>
</tr>
<tr>
<td>Metadata document</td>
<td>DSD + MSD</td>
<td>Taxonomy Package</td>
</tr>
<tr>
<td>Metadata subsets</td>
<td>Dataflow + Metadataflow</td>
<td>Entry point</td>
</tr>
<tr>
<td>Metric definition</td>
<td>Indicator</td>
<td>Concept</td>
</tr>
<tr>
<td>Dimension definition</td>
<td>Dimension</td>
<td>Dimension</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Code List</td>
<td>Explicit Domain</td>
</tr>
<tr>
<td>Value restrictions</td>
<td>Uncoded (optional format)</td>
<td>Type (XML Schema facets)</td>
</tr>
<tr>
<td>Cube definition</td>
<td>Concept scheme, constraints</td>
<td>Hypercubes</td>
</tr>
<tr>
<td>Value scaling</td>
<td>Unit multiplier</td>
<td>Scale (iXBRL only)</td>
</tr>
<tr>
<td>Dimensional validation rules</td>
<td>VTL</td>
<td>XBRL Formula</td>
</tr>
</tbody>
</table>
SDMX vs XBRL – Differences

• Attributes have no direct counterpart in XBRL
  – Can be modelled using facts/footnotes and links
• XBRL doesn’t have a built-in dimension for geographic area
  – Entity dimension might be appropriate
• XBRL doesn’t typically model “frequency”
  – Could be a custom (taxonomy-defined) dimension
• SDMX has standardized APIs
• XBRL has an HTML embedding
• XBRL captures precision, supports interval arithmetic
• XBRL metadata & extension mechanisms seem more flexible
Upcoming XBRL features

• OIM taxonomies (non-XML)
• Formula language improvements
• Digital signatures
XBRL Resources

- https://xbrl.org/
  - https://specifications.xbrl.org/
  - https://software.xbrl.org/
  - https://taxonomies.xbrl.org/
  - https://filings.xbrl.org/
Collaboration opportunities

- SDMX-XBRL converters
- Learning from each other
  - Adding features
  - Improving terminology
  - Sharing best practice
- Eventual convergence?
THANK YOU

Any questions?