XBRL Risk Taxonomy Meeting:
Introduction

Information Management **software**

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Agenda

- **Questions Before Us Today**

- **Key Causes of Credit Crisis**

- **Six Regulatory Reforms to Improve Market Efficiency**

- **Meeting Agenda and Goals**

Questions for Today

- 1. Is the ORX data model sufficient for Operational Risk reporting on a national level?

- 2. What is the right business model for Operational Risk reporting and who should

- maintain the taxonomy?

- 3. What kinds of key risk indicator data are already collected by financial regulators

- that are either not used on a systemic basis or not shared across the government?

- 4. What is the most efficient method for collecting end of day/week positional data?

- - from market participants directly?

- - via clearing and settlement firms?

- 5. What should be the role of a semantic repository in the construction of risk

- reporting taxonomies?

- 6. How should the regulatory authorities build and maintain regulatory taxonomies?

- 7. How should the world maintain semantic consistency between many regulatory

- taxonomies?

- 8. What should a 21st Century Regulatory Information Architecture look like?

Some Key Causes of Credit Crisis

- **Low interest rates from 2002 to 2005**

  - -"Go Shopping" - George W. Bush

- **Government Policies that promoted mortgage market risk taking***

  - Political pressure on Fannie Mae and Freddie Mac

  - Lending subsidies via FHLB that promoted high leverage

- **2006 changes in loan origination underwriting guidelines that allowed income declarations instead of income documentation.**

  - Dramatic drop in loan quality and huge rise in fraud

- **2006 legislation that encouraged rating agencies to relax standards for measuring risk in subprime securitization.***

- **Government regulations limiting who can buy stock in banks***

- **Prudential Regulation (Basel II) of banks has proven inadequate***

- **Asymetrical Mortgage Market that freezes homeowners in down markets**

*Source: *Financial Innovation, regulation, and reform*, Charles Calomiris

Six Regulatory Reforms to Improve Market Efficiency

1. **Establish systemic risk oversight powers by expanding existing regulatory charters**

2. **Develop new Systemic Risk Councils to enhance macro-economic risk-based decision-making**

3. **Expand prudential oversight to include systemic risk data reporting, measurement, and analysis**

4. **Create a common Regulatory Information Architecture spanning all financial services regulatory agencies**

5. **Standardize financial product descriptions with semantic repositories.**

6. **Address mortgage market asymmetry via Principle of Balance Mortgage model.**

1. *Establish systemic risk oversight powers by expanding existing regulatory charters*

- **FRB, SEC, FDIC, OTC, OCC, etc. all have specialized missions and capabilities**

  - Those should be expanded to include systemic risk oversight in their domains

- **In a democracy, you want dispersed and redundant analysis of risk information**

  - A single control point for data aggregation and analysis is a single point of political control and failure

- **Systemic Risk Councils and common regulatory information architectures can facilitate information sharing and decision-making.**

2. *Develop New Systemic Risk Councils*

- **We've done this before...**

- **In his immediate response to the Recommendations of the 9/11 Commission, the President issued Executive Order 13356, and established a Council to review matters related to the improvement of sharing terrorism information.**

- **The Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA) changed the name of this Council to the Information Sharing Council and provided it responsibilities to advise the President and the Program Manager on the development of ISE policies, procedures, guidelines, and standards, and to ensure proper coordination among federal agencies participating in the ISE.**

- **On October 25, 2005, the President issued Executive Order 13388, Further Strengthening the Sharing of Terrorism Information to Protect Americans, superseding Executive Order 13356, to restructure the Information Sharing Council, bringing it into alignment with the requirements of IRTPA.**

- **The Program Manager chairs the ISC, which meets regularly. There are two standing ISC Subcommittees: a State, Local and Tribal Subcommittee and a Private Sector Subcommittee; and multiple ISC Working Groups.**

Systemic Risk Council Membership

- **Membership in the ISC includes:**

  - Department of Commerce
  - Central Intelligence Agency
  - Department of Defense
  - Director of National Intelligence
  - Department of Energy
  - Federal Bureau of Investigation
  - Department of Health and Human Services
  - Joint Staff
  - Department of Homeland Security
  - National Counter Terrorism Center
  - Department of Interior
  - Office of Management and Budget
  - Department of Justice
  - Department of State
  - Department of Transportation
  - Department of Treasury

- **Membership in the SRC should includes:**

  - **Federal Reserve Board of Governors**
  - **Securities and Exchange Commission**
  - **Federal Deposit Insurance Corporation**
  - **Office of Controller of the Currency**
  - **Office of Thrift Supervision**
  - **Financial Industry Regulatory Authority**
  - **National Credit Union Administration**
  - **Federal Housing Administration**
  - **Others**

Data Governance Operating Model
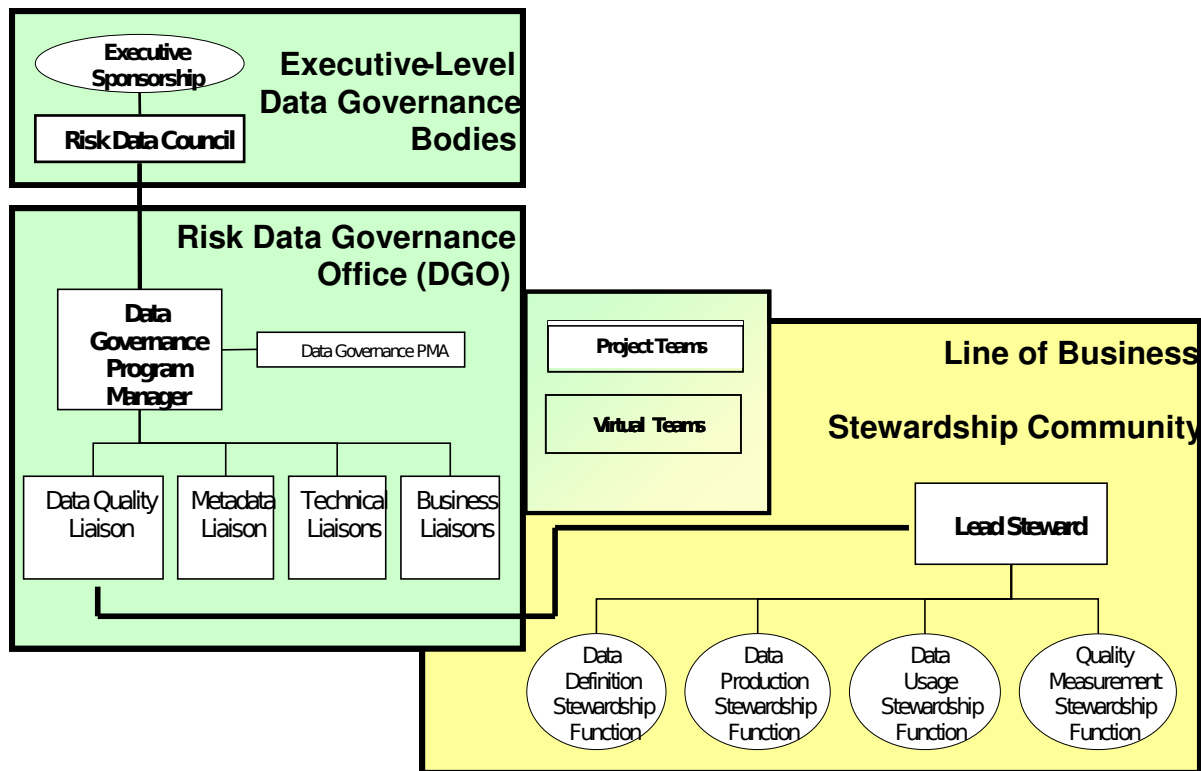
- **Risk Data Council: Decisioning body.**
- **Risk Data Governance Office: Operating entity**
- **Stewardship Community: Distributed data accountability**

3. Expand prudential oversight to include systemic risk data reporting, measurement, and analysis

- **Systemic Risk Reporting Taxonomies in XBRL that provide macro comparisons of incremental exposures**

  - Operational Loss Data Reporting
    - Helps financial institutions to set adequate reserves
    - Helps regulators track systemic impact of marginal losses like loan origination errors or failed trades
    - Can be augmented with supervisory data collection

  - Positional Reports
    - Demonstrate market asset crowding and bubble formation
    - Can be captured via CSDs
    - Challenge is to what level of detail / impact on contracts
    - Can be augmented with supervisory data collection

Some Existing Financial Reports that also need to be integrated, compared, and shared

FFIEC

FFIEC 002	Report of Assets and Liabilities of U.S. Branches and Agencies of Foreign Banks
FFIEC 002S	Report of Assets and Liabilities of Non-U.S. Branches That Are Managed or Controlled by a U.S. Branch or Agency of a Foreign (Non-U.S.) Bank
FFIEC 009 / FFIEC 009a	Country Exposure Report / Country Exposure Information Report
FFIEC 019	Country Exposure Report for U.S. Branches and Agencies of Foreign Banks
FFIEC 030 / FFIEC 030S	Foreign Branch Report of Condition / Abbreviated Foreign Branch Report of Condition
FFIEC 101	Advanced Capital Adequacy Framework Regulatory Reporting Requirements
FFIEC 102	Proposed Market Risk Framework Regulatory Reporting Requirements

Call Report Forms

FFIEC 031	Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices
FFIEC 041	Consolidated Reports of Condition and Income for a Bank with Domestic Offices Only - replaces FFIEC 032, FFIEC 033, FFIEC 034

Other

Form TA-1	Transfer Agent Registration and Amendment Form

SEC

Submission Type	Description	Tool/Template Number	Filer-Constructed Form Spec.
4, 4/A	Statement of changes in beneficial ownership of securities	OnlineForms	Ownership XML Technical Specification
40-6B, 40-6B/A	Application under the Investment Company Act by an employees' securities company	EDGARLink Template 3	XFDL Technical Specification
40-17F1, 40-17F1/A	Initial certificate of accounting of securities and similar investments in the custody of management investment companies filed pursuant to Rule 17f-1 of the Investment Company Act of 1940 filed on Form N-17F-1	EDGARLink Template 2	XFDL Technical Specification
40-17F2, 40-17F2/A	Initial certificate of accounting of securities and similar investments in the custody of management investment companies filed pursuant to Rule 17f-2 of the Investment Company Act of 1940 filed on Form N-17F-2	EDGARLink Template 2	XFDL Technical Specification
40-17G, 40-17G/A	Fidelity bond filed pursuant to Rule 17g1(g)(1) of the Investment Company Act of 1940	EDGARLink Template 2	XFDL Technical Specification
40-17GCS, 4017GCS/A	Filings of claim or settlement pursuant to rule 17g-1(g)(1)(2) or (3) of the Investment Company Act of 1940	EDGARLink Template 2	XFDL Technical Specification
40-24B2, 40-24B2/A	Filing of sales literature pursuant to Rule 24b2 under the Investment Company Act of 1940	EDGARLink Template 2	XFDL Technical Specification
40-33, 40-33/A	Copies of all stockholder derivative actions filed with a court against an investment company or an affiliate thereof pursuant to Section 33 of the Investment Company Act of 1940	EDGARLink Template 2	XFDL Technical Specification
40-8B25	Document or report	EDGARLink Template 2	XFDL Technical Specification
40-8F-2, 40-8F-2/A	Initial application for deregistration pursuant to Investment Company Act Rule 0-2	EDGARLink Template 2	XFDL Technical Specification
40-APP, 40-APP/A	Applications under the Investment Company Act other than those reviewed by Office of Insurance	EDGARLink Template 3	XFDL Technical Specification

4. Create a common Regulatory Information Architecture spanning all financial services regulatory agencies

- **Transformation of existing stovepipe model to Information sharing model**

- **Consolidation and standardization of existing financial disclosure reports to enable comparability and analysis**

- **Common data reference model with business process to integrate new data sources**

- **Business optimization and analysis center to provide complex computational and analytical support**

- **New Governance Model for analysis and decision-making**

The 9/11 Information Sharing Model has much to offer Systemic Risk Regulatory Architectures

	Legacy Information Sharing Model	New Information Sharing Model
1 Info Sharing Vision (STRATEGIC DRIVERS)	**"Need to Know"** – The legacy model of sharing intelligence data to trusted parties when deemed necessary by the data provider	**"Responsibility to Provide"** – A new mindset to share intelligence data while still addressing the need to protect privacy, civil liberties, and sources and methods
2 Enterprise Scope	**Agency-Centric** – Developed to support a particular agency's needs for particular mission sets	**Enterprise-Centric** – Collaboration/Services marketplace stretches across agencies, partners, and international borders for multiple mission use
3 Collaboration Type	**Static** – Developed in accordance with policies and regulations of particular intelligence product with little change or flexibility	**Mission-Centric "Self Generating"** – Rapidly adapts to changing needs and introduction of new partners (state, local, tribal governments)
4 Security Model (DATA & SECURITY DRIVERS)	**Network-Centric** – Security designed around each network (e.g., DMZ, firewalls)	**Information-Centric** – Security built into the data and environment, i.e., "security in-depth" (e.g., data tags/XML)
5 Access Model	**Compartment-Based** – Access based primarily on security access controls and regulations	**Attribute-Based** – Access based on attributes beyond security classification (e.g., environmental, mission focus, affiliation, etc.)
6 Data Usage	**Data "Owner"** – Cultural mindset of intelligence data owned by the providing agency with strict controls on access, distribution, and sharing mechanisms	**Data "Stewardship"** – Cultural shift to intelligence data stewardship to facilitate multi-dimensional analysis and usage with appropriate security protocols

GREATER COLLABORATION

Soure: *US Intelligence Community Information Sharing Strategy*, 2008

That model created these Information Sharing Strategic Goals that have already been achieved

Strategic Goal	Description
Goal #1: Institute Uniform Information Sharing Policy and Governance	Enable the transformation of culture necessary for information sharing: policies, governance models, standards, personnel evaluation and awards, and compliance mechanisms.
Goal #2: Advance Universal Information Discovery and Retrieval	Advance information search, discovery, retrieval, dissemination, and pervasive connectivity through common metadata tagging, security markings, and networks throughout the Intelligence Community.
Goal #3: Establish a Common Trust Environment	Put in place uniform identity attributes, identity management, information security standards, information access rules, user authorization, auditing, and access control to promote common trust.
Goal #4: Enhance Collaboration Across the Community	Develop the tools and incentives necessary at the institutional, leadership, and workforce levels to collaborate and share knowledge and expertise and information.

Soure: *US Intelligence Community Information Sharing Strategy*, 2008

The questions they posed also apply to a Financial Regulatory Information Architecture

	Description	Key Questions
Governance — The "environment" influencing sharing	Oversight and leadership that help govern information sharing. How managers drive initiatives within organization and across agencies. Standards and guidelines to ensure a consistent approach.	• Is there a clear value proposition for sharing among partners, i.e., quid pro quo or negotiated trade-offs? Are MOUs or service-level agreements required? • Do people understand how to abide by the law and policies? • How are information sharing disputes resolved? • Who are the key stakeholders?
Policy — The "rules" for sharing	National policies, internal policies, rules of engagement, standards, and role of players internal and external to the organization.	• Are laws, regulations, policies, and procedures in place that authorize, mandate and/or enable the organization to share? Is the organization complying with these mandates? • Do laws/regulations/policies/procedures impede or constrain the organization/people from sharing? • Are privacy and civil liberties sufficiently protected?
Technology — The "capability" to enable sharing	The technology, systems, and protocols that provide the platform for enabling the sharing of information and that address security and privacy issues.	• Are there common data standards and systems for organizing, identifying, and searching? • Can participants push and pull data across networks? • How is information protected; is the system auditable? • Are tools/mechanisms available to manage identities; authorize, authenticate, and audit users; and ensure confidentiality?
Culture — The "will" to share	The organizational approach and philosophy around sharing information and its ability to realign and adapt as circumstances change.	• How do we motivate people and create incentives to collaborate and share information across organizations? • Does the organization communicate across all levels? • How does the organization adapt to change, and how responsive is it to stresses and opportunities? • How are decisions and conclusions reached?
Economics — The "value" of sharing	Ability to obtain and provide resources for information sharing initiatives, and external pressures (e.g., budget) that influence how resources are allocated and managed.	• Has sufficient funding been appropriated to support the initiative? • Have incentive structures been developed? • Is the funding reaching the appropriate level within the enterprise to fully implement the sharing program? • How do we measure performance?

Soure: *US Intelligence Community Information Sharing Strategy*, 2008

4. Financial Product Standardization

- **The lack of semantic consistency between firms and regulatory authorities is a feature of financial innovation.**

  - It is designed to maximize risk and minimize oversight potential

- **Non-standard product semantics also increase product development costs and market risk**

- **Semantic Standards can increase market transparency and reduce information asymmetries.**

- **XBRL lacks a semantic repository of common and synonymous terms.**

- **As more XBRL Taxonomies are created, semantic links and governance models for changes will be needed.**

IBM

Core Problem: Lack of Common Identifiers

- Unique identification – the key to supply chain management and the building blocks for effective data management

  - **Unique instrument identification** (1968 "paper crisis," T+1/STP, multiple listings, best execution, derivatives and short term instruments)

  - **Business entity identification** (KYC, risk mitigation/credit exposure, transactions audit, post trade processing, capital adequacy, management information, operational efficiency)

  - **Data attribute identification** (compare multiple sources, feed analytical models, generate research, sector classification, scenario development, relief from mapping)

- Systemic change (hard enough) plagued by bureaucracy, commercial mismanagement and structural inhibitors – a regulatory imperative is needed to pull all the pieces together

ENTERPRISE DATA MANAGEMENT
EDM
C O U N C I L

Semantics Repository

- Goal: standardize terms and definitions of every reference data attribute stored in master files and communicated among supply chain participants

- Value: precise nomenclature translates into a common language between systems and sources, reduces the cost of doing business and promotes confidence in data among business users

- Structure: Funded by the EDM Council as an open and collaborative resource for industry (www.hypercube.co.uk/edmcouncil)

  - Initially structured around the ISO 10962 classification of financial instruments standard (modified and extended to reflect reality)
  - Content was pulled from pre-existing data dictionaries from public sources and financial institutions (normalized and reconciled)
  - Includes a logical data model (facts and relationships) for all financial products and is linked to/viewable in diagrams or spreadsheets
  - Technology independent and factual view of data meaning in the context of business requirements – a semantics model. Does not include any form of technical design

ENTERPRISE DATA MANAGEMENT
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COUNCIL

6. *Mortgage Market Asymmetry*

A successful mortgage reform

1. **Lowers mortgage interest rates**
   - Key to preventing overshooting on price
   - Needs to be available to full range of borrowers, not just high FICO, high down-payment borrowers that currently qualify for agency mortgages

2. **Limits unnecessary foreclosures by reducing number of homes with negative equity**
   - Negative equity must be addressed – there is no other way to limit foreclosures or to avoid excessively low prices for years to come
   - Policies must address issues of fairness and homeowners who have no realistic way to afford current home
   - Must be done at scale, promptly

3. **Puts the system moving forward on a sound basis with well-aligned incentives. Cleanly separates credit risk and interest risk**
   - Advisors to homeowners (brokers and mortgage bankers) should evaluate and share credit risk – *can this person afford this home?*
   - Bond-holders should manage interest rate risk over time – *what happens when interest rates rise or fall, the yield curve changes, or volatility increases or decreases?*

Soure: *Alan Boyce, Absalon*

Rebuilding the system to properly align incentives: The old system needs to be replaced
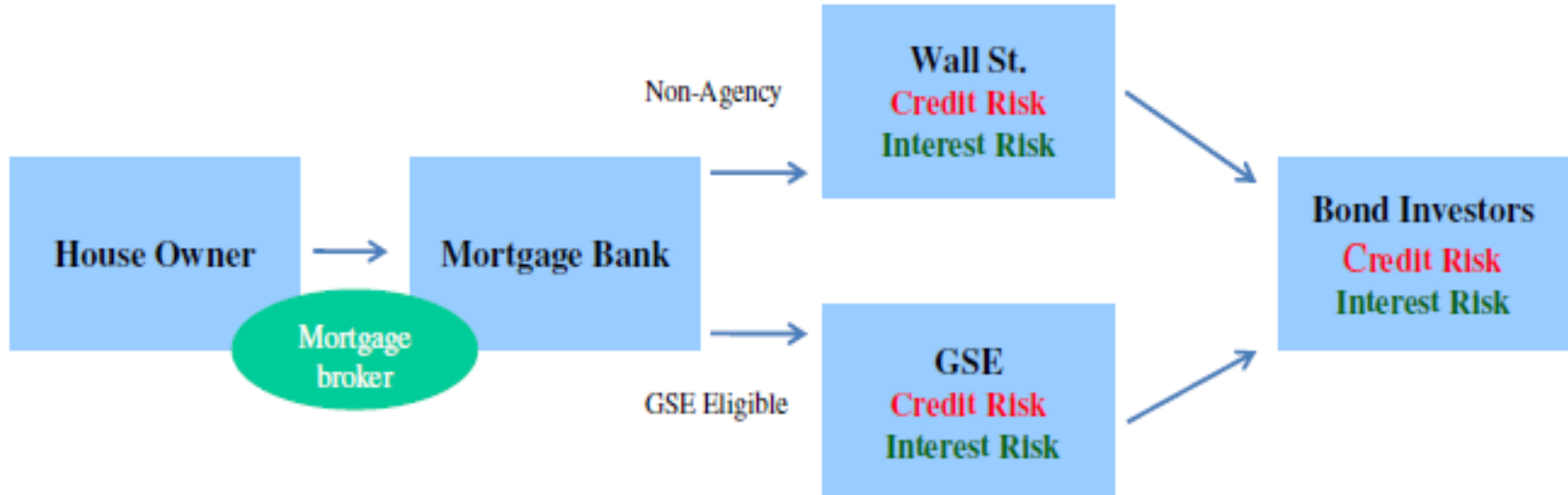
As discussed above, the old system was flawed in many ways and needs to be rebuilt

-- to separate credit risk and interest risk in origination and securitization
-- to minimize the likelihood of negative equity and ensuing foreclosure
-- to stabilize the market (avoid overshooting on price)

Soure: *Alan Boyce, Absalon*

How the System Could Be Fixed By Emulating Danish System

House Owner	→	**MCI** Credit Risk Originator and Servicer	→	**End Investors** Interest Risk

- How is this system different?
  - **Mortgage Credit Institutions** (MCIs) are required <u>to retain credit risk</u> and service the loans
    - ➢ Bond investors only retain interest risk rather than credit and interest risk
    - ➢ MCIs can participate on equal terms, subject to rigorous regulatory requirements
    - ➢ MCIs act as "liability advisors" to homeowners, seeking to put their customers into the lowest risk adjusted cost loans AND seeking to take advantage of temporary dislocations in the bond market that may allow for an NPV gain for the borrower
  - Mortgage is funded by the issuance of <u>standardized bonds</u>, creating a large and liquid market
  - Bond market deals with familiar and hedge-able risks: level of rates, slope and curvature of yield curve, interest rate volatility, financing and counterparty selection
  - Asymmetric nature of American mortgages is replaced by the Danish <u>Principle of Balance</u>

> **Principle of Balance: Borrowers can retire their mortgages by paying the lower of par or by purchasing the bond at the current market price**

Soure: *Alan Boyce, Absalon*

Current system is not symmetrical or balanced

If interest rates decline

- Home prices go up

- Homeowner **can prepay existing mortgage** by refinancing at new lower rate

- Allows for equity withdrawal

If interest rates rise

- Home prices go down

- Value of the mortgage (in a MBS) drops to the holder of the mortgage

- Even though the value of the mortgage has dropped, the homeowner still owes "par" – the face value of the mortgage. **He cannot prepay existing mortgage at the price the mortgage is selling for in the market**

- ~$5 trillion is currently owed by homeowners of non-agency mortgages. These mortgages are valued by the market at $3.5 trillion.

Soure: *Alan Boyce, Absalon*

The Danish System: refinancing on the way down

If interest rates decline

- Home prices go up

- Homeowner **can prepay existing mortgage** by refinancing at new lower rate
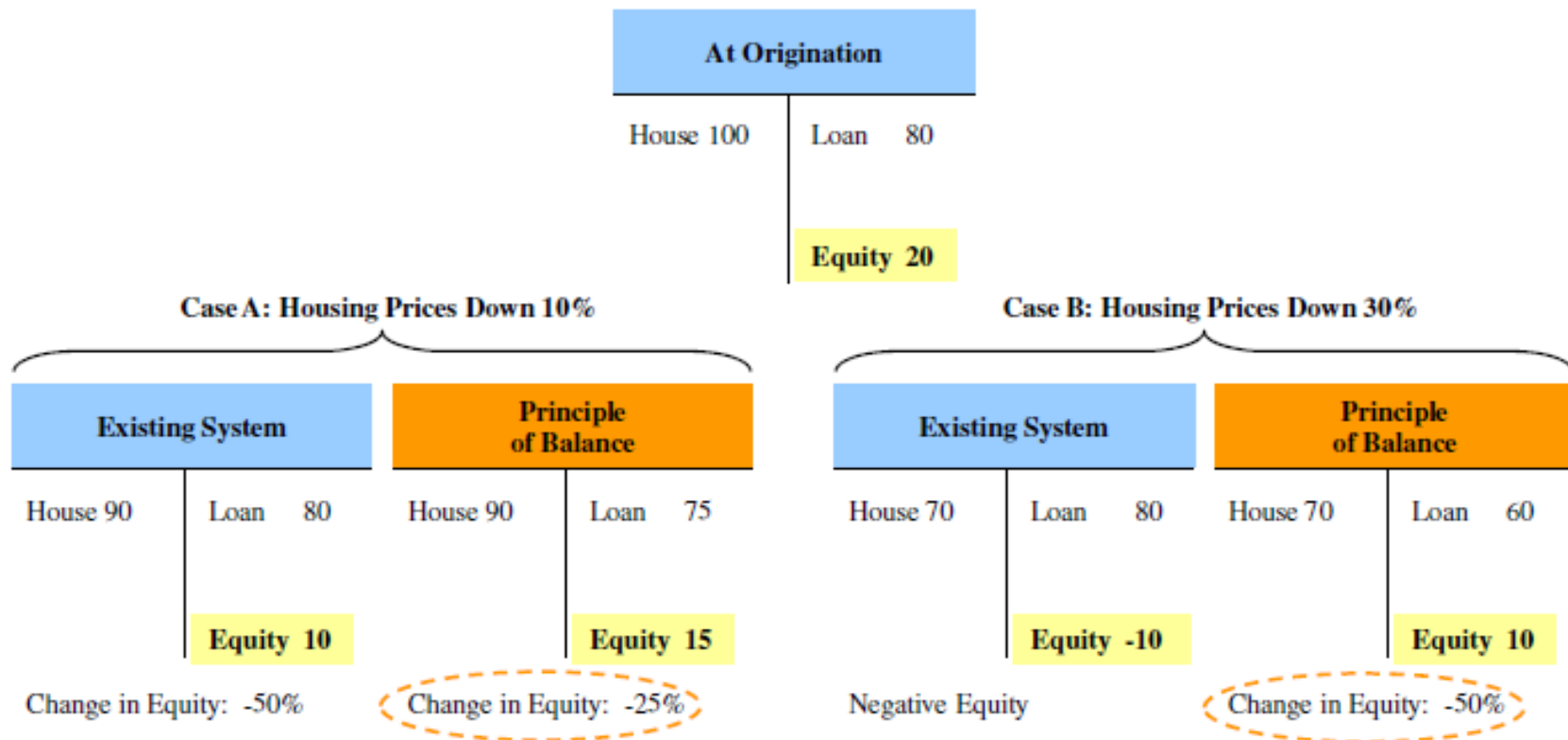
- Allows for equity withdrawal

If interest rates increase

- Home prices go down

- Value of the mortgage (in a MBS) drops to the holder of the mortgage

- Assuming credit worthiness, a homeowner **can prepay** by purchasing back his or her mortgage at the current discounted price

- This maintains equity in the home

- The key is new, standardized mortgage pools

Soure: *Alan Boyce, Absalon*
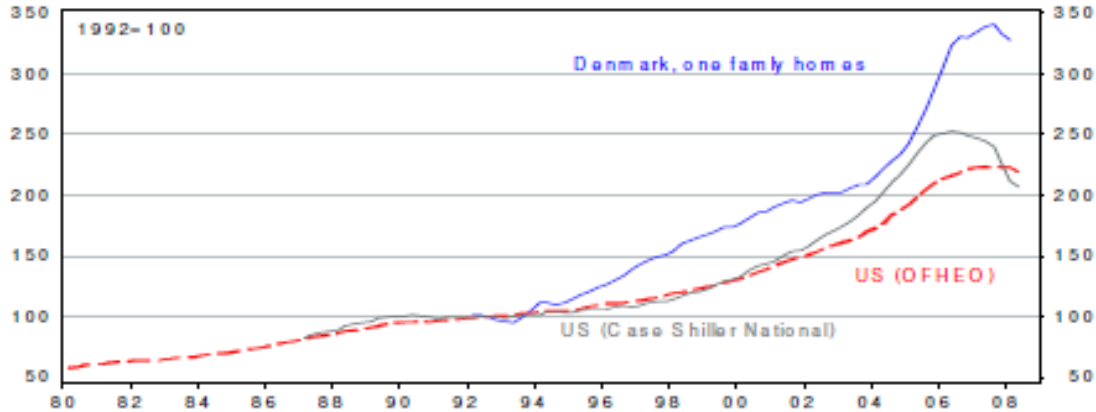
Which Reduces Risk of Negative Equity

- Typical homeowner scenario:
  - Borrower pays $100,000 for a house with an 80% LTV, loan originated at par
  - In Case A, housing prices have fallen 10% and mortgage bond prices have fallen to 94
  - In Case B, housing prices have fallen 30% and mortgage bond prices have fallen to 75

At Origination

House 100 | Loan 80

Equity 20

Case A: Housing Prices Down 10%

Existing System	Principle of Balance
House 90	Loan 80	House 90	Loan 75

Equity 10   Equity 15

Change in Equity: -50%   Change in Equity: -25%

Case B: Housing Prices Down 30%

Existing System	Principle of Balance
House 70	Loan 80	House 70	Loan 60

Equity -10   Equity 10

Negative Equity   Change in Equity: -50%

Absalon 9

Soure: *Alan Boyce, Absalon*

Denmark Experienced a Larger Housing Bubble...

...But Has Avoided Widespread Foreclosures
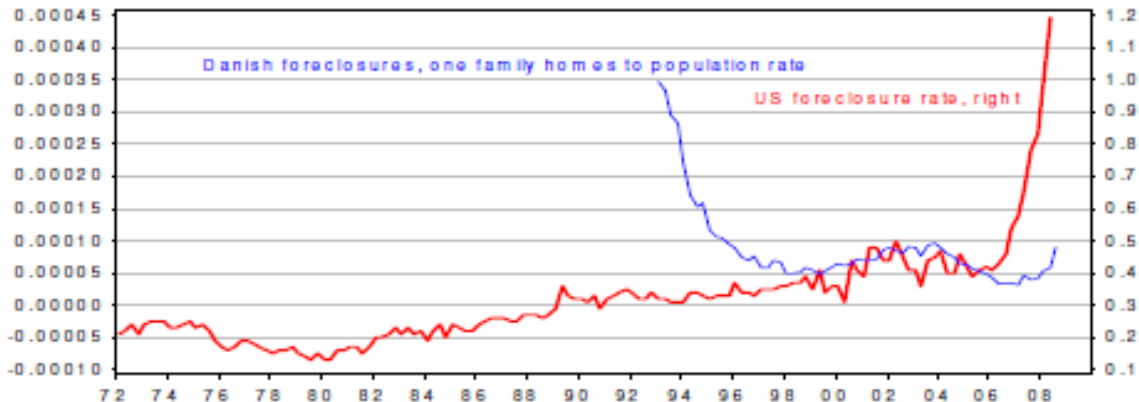
Soure: *Alan Boyce, Absalon*

Our Tasks Today

- **Review the Operational Risk Reporting Taxonomy**

  - How to classify Causality?

  - Are Basel II Events sufficiently granular?

  - Should Operational Events be linked to Credit and Market Impacts?

  - What data for industry vs regulators?

- **Create the Outlines of Positional Reporting Taxonomy**

  - Equities, Bonds, Derivatives

  - Positions vs Performance?

  - Sources and granularity

IBM Data Governance Council

May 13, 2009

XBRL Risk Taxonomy Meeting

Standards for the Future of Risk Measurement and Reporting

The Levin Institute
116 East 55th Street
New York, NY

Forum Topics

Operational Risk Taxonomy
Positional Reporting Taxonomy

Meeting Agenda

Time	Topic	
08:00:00 AM	**Meeting Introduction**	
08:30:00 AM	SEC/FRB Regulatory Round-table -Systemic Risk Requirements -Data Reporting -Information Architecture	
09:30:00 AM	XBRL Taxonomies and Risk - Complimentary Example (OCEG GRC) - Opportunities for collaboration	
10:30:00 AM	Breakout Discussions	
	OpRisk	**Positional Reports**
	The OpRisk Taxonomy - Data Model - Schema - Frequency - Business Model	Positional Reporting - Equities, Bonds, Derivatives - Classification - Benefits - Challenges
11:30:00 AM	Basel II - Schema Problems - Alternatives	The Role of CSD's - Reporting Holdings without counter-party data
12:30:00 PM	**Working Lunch**	
01:30:00 PM	Semantic Repositories -Who governs the semantics of XBRL? - How are taxonomies related to each other?	
02:30:00 PM	Breakout Discussions Continued	
	OpRisk	**Positional Reports**
	The OpRisk Taxonomy - Data Model - Schema - Frequency - Business Model	Positional Reporting - Equities, Bonds, Derivatives - Classification - Benefits - Challenges
04:30:00 PM	Breakout Presentations - What Teams Discussed and Discovered - Next Steps	
05:30:00 PM	**End of Event**	