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Financial Stability and Financial Sector Policies in Denmark

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The Danish Financial Supervisory Authority

Vienna - November 3, 2017

Agenda

- Why financial regulation and supervision
- Banking models
- Macroprudential policy
- Lessons learned from the financial crisis
- The Danish financial sector
- Strategic focus areas
- Resolution and recovery
- The Danish pension system

Why financial regulation and supervision?

Market imperfections

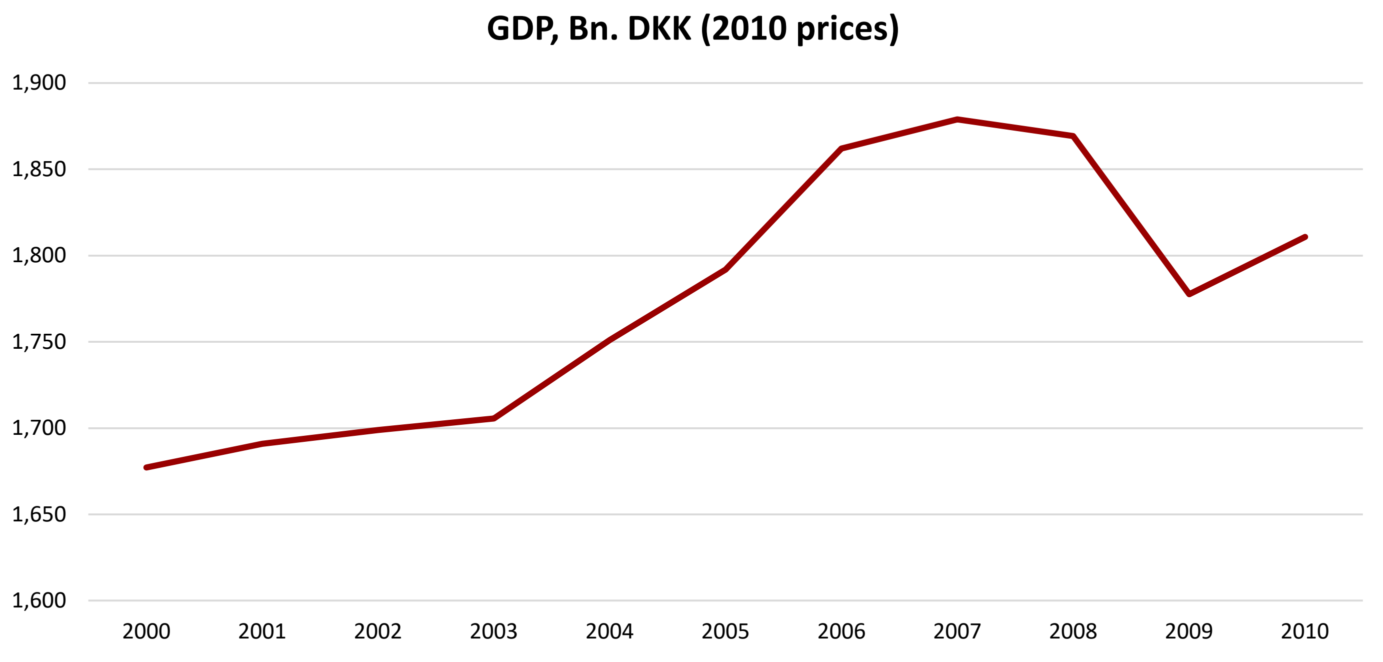
- Two important questions
  - What imperfections?
  - Does the intervention create more problems than it solves?

Asymmetric information

- *“Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time.”* – Arrow

Financial sector can create welfare

Financial sector can also destroy welfare



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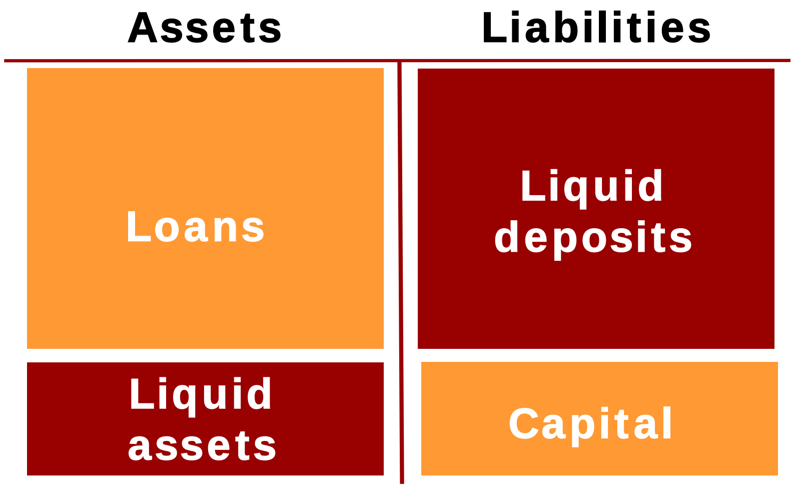
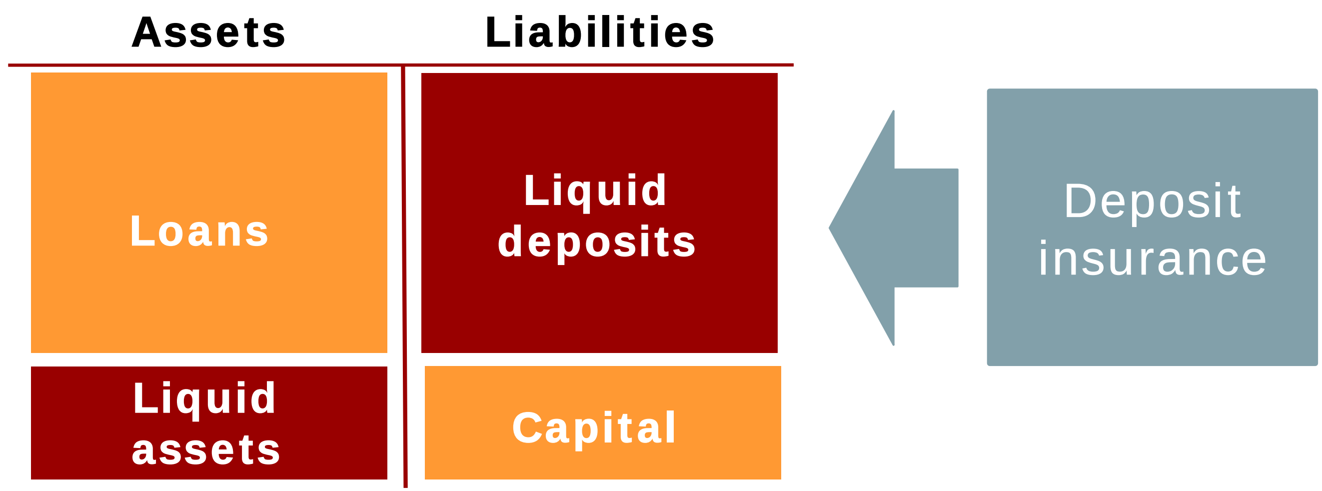
Banking models

Balance sheet of a (simple) bank



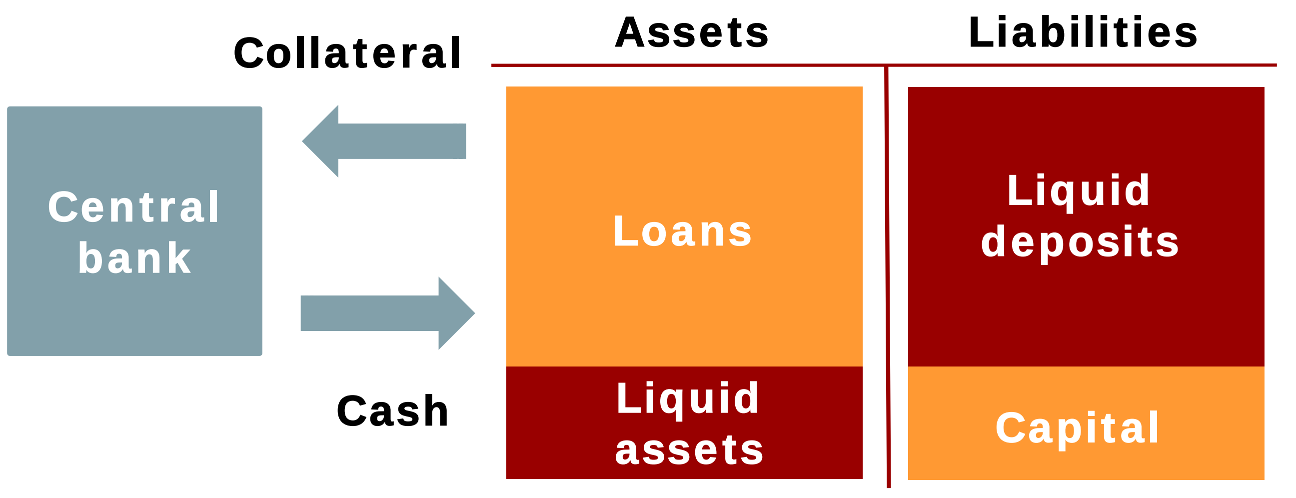
- The role of banking in the economy involves, see for instance Freixas and Rochet (1997), transformation of assets
  - In the maturity dimension, i.e. short deposits into long loans
  - In the credit dimension – monitoring loans
- This enhances economic efficiency and welfare
- … but at the cost of inherently unstable banks

Deposit insurance



- Consumer protection (opaque balance sheet)
- Reduce incentives for a bank run by depositors
- Negative externalities

Central banks as lenders of last resort



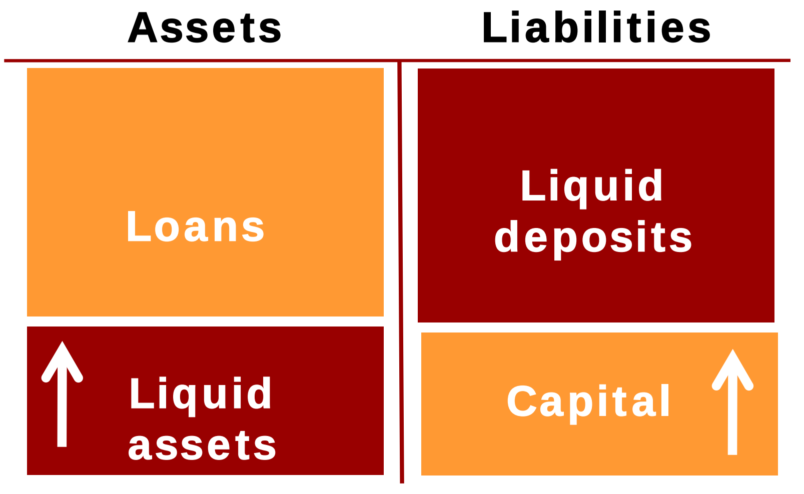
- Central banks provide liquidity using illiquid assets as collateral

The role of financial regulation

- There is scope for financial regulation in our simple model because of numerous possible negative externalities:
  - Depositors have incentives to get out early in the case of a bank run
  - Forced liquidation may lead to contagion through depressed asset prices
  - Managers and risk takers in banks have limited liability and may take on too much risk
  - Bank failures have social costs as credits are cut and projects abandoned

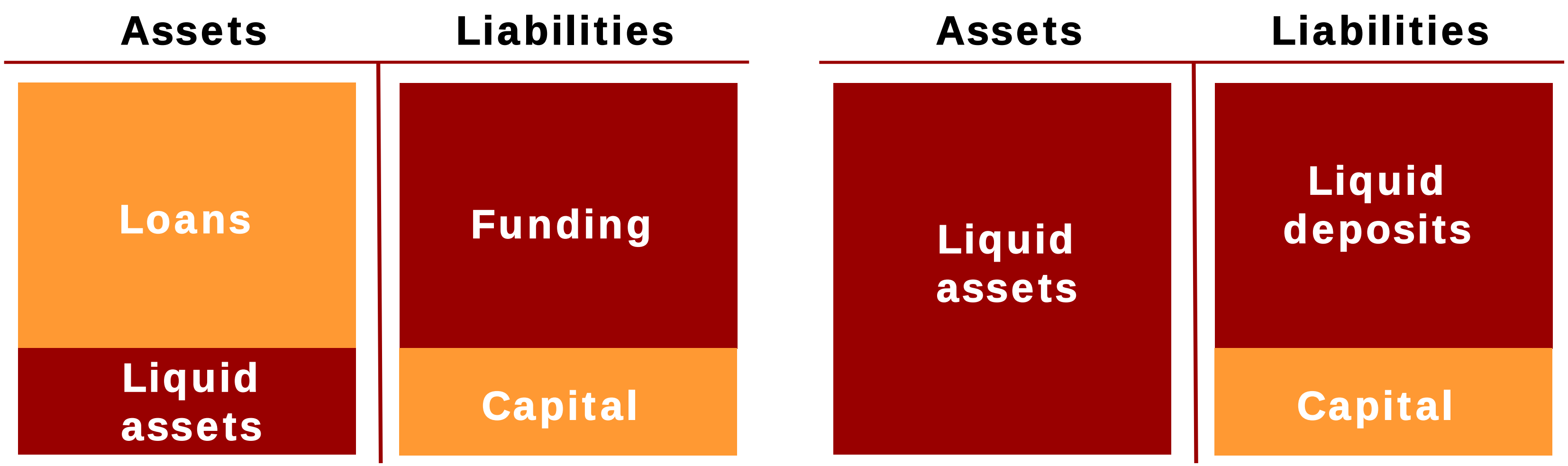
- The externalities are associated both with the asset side and the liability side of the balance sheet
- *The regulatory perimeter is less well defined in relation to the asset side*

Capital and liquidity buffers



- Regulatory response so far has concentrated on capital and liquidity
  - Increase the amount of capital. Capital buffers provide cover for loan losses
  - Increase the amount of liquid assets. Liquidity buffers offer protection against forced liquidation and act as buffers for capital

Narrow banking



- Separate deposit taking from other financial intermediation activities

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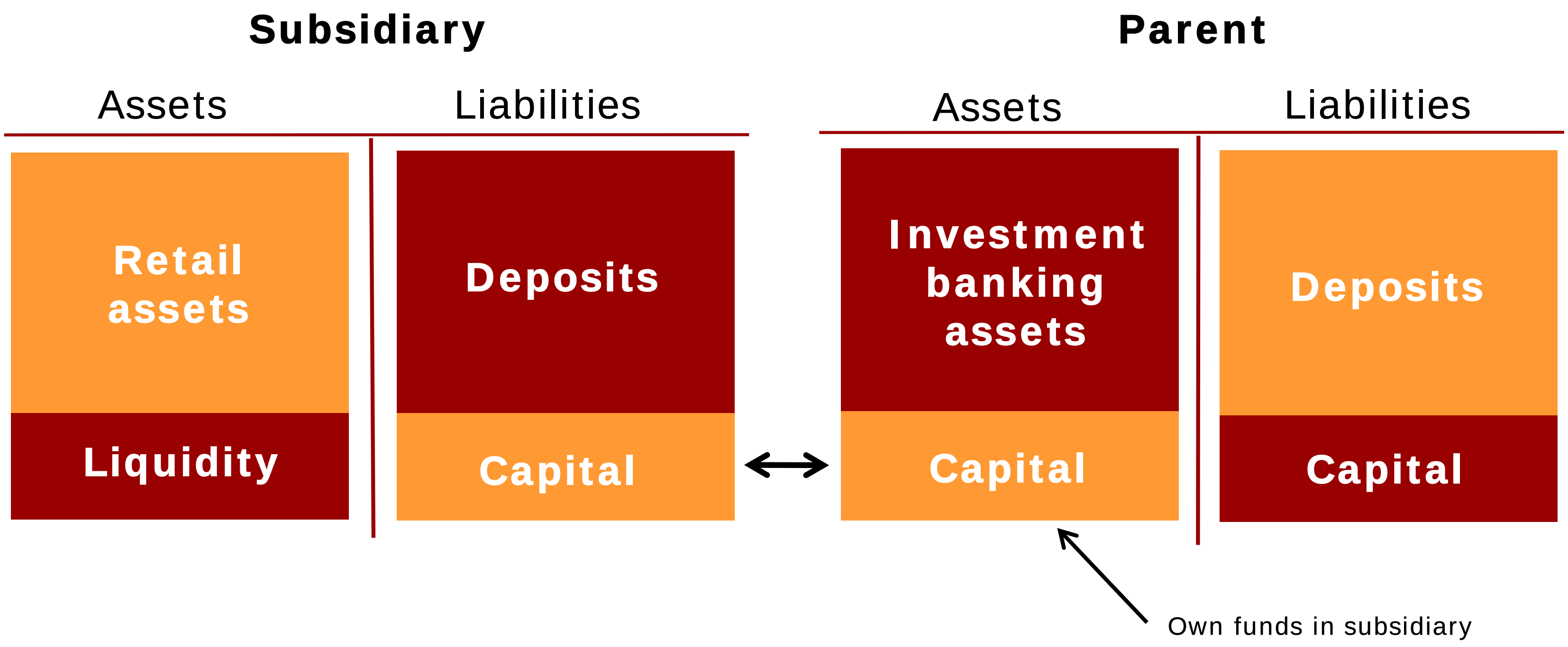
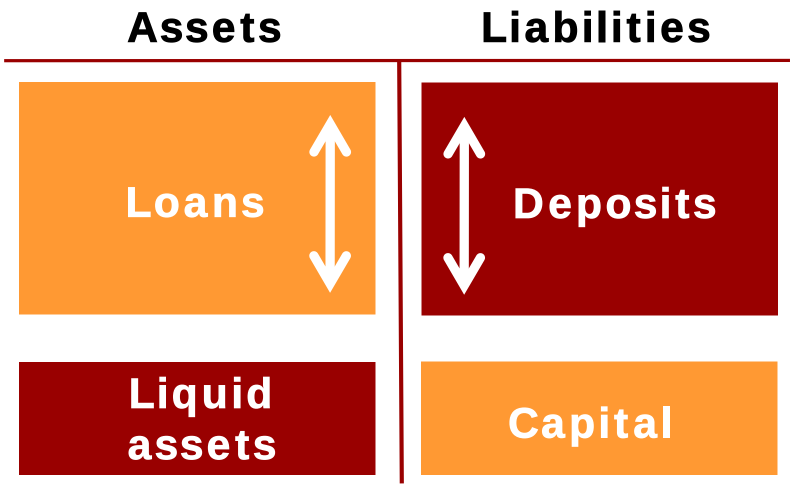
Ringfencing



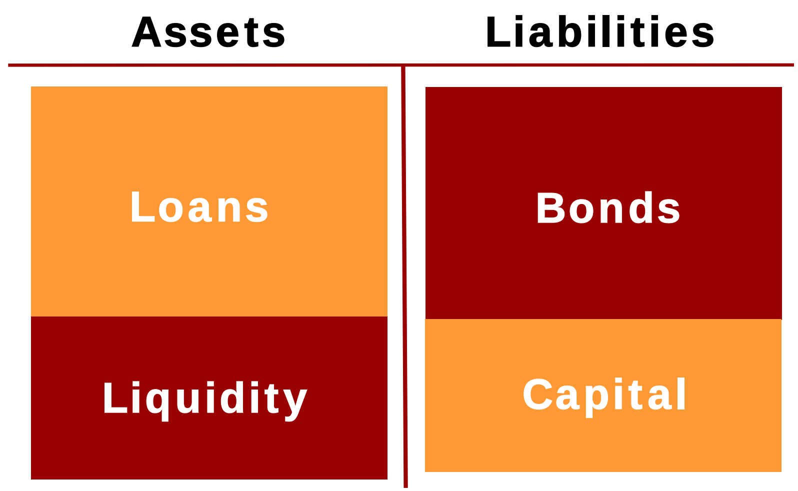
- Risk to deposits only in relation to subsidiary activities

Changing the deposit contract



- Deposit contracts can be made similar to mutual funds
  - The depositor will have a claim on a share of assets rather than a nominal amount

The Danish Mortgage Model I



- Bond holders are personally liable for their debt and borrowers pay cost of bond refinancing.

- Lending limits of 60 or 80 percent of market value of the mortgaged property depending on property segment

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Macroprudential policy

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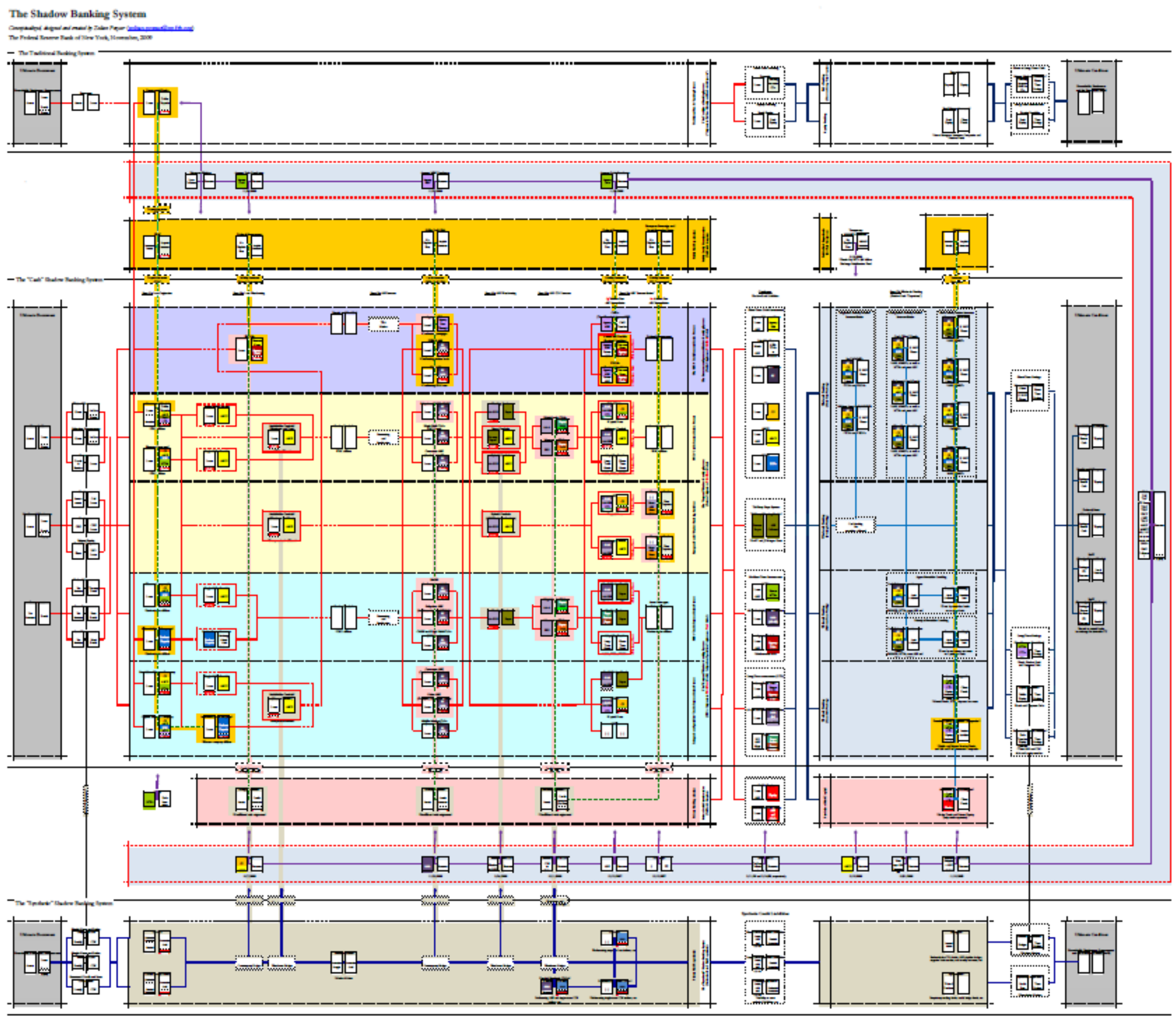
The shadow banking system



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What is macroprudential policy?

"*Prudential measures are primarily concerned with sound banking practice and the protection of depositors at the level of the individual bank. Much work has been done in this area – which could be described as the 'micro-prudential' aspect of banking supervision. [...] However, this micro-prudential aspect may need to be matched by prudential considerations with a wider perspective. This* ***'macro-prudential'*** *approach considers* ***problems that bear upon the market as a whole as distinct from an individual bank, and which may not be obvious at the micro-prudential level***." [emphasis added]

Source: Alexandre Lamfalussy, 1979, cf. BIS Quarterly Review, March 2010

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What is the difference between macro- and microprudential?

Table 1

Macro- versus microprudential perspectives

	Macroprudential	**Microprudential**
Proximate objective	limit financial system-wide distress	limit distress of individual institutions
Ultimate objective	avoid macroeconomic costs linked to financial instability	consumer (investor/depositor) protection
Characterisation of Risk	"endogenous" (dependent on collective behavior)	"exogenous" (independent of individual agents' behavior)
Correlations and common exposures across institutions	Important	Irrelevant
Calibration of prudential controls	in terms of system-wide risk; top-down	in terms of risks of individual institutions; bottom-up

Source: Borio (2003).

What is financial stability?

”Denmark's Central Bank defines financial stability as a condition, where the financial system as a whole is so robust that possible problems in the financial sector does not spread and inhibit the financial system in functioning as an efficient intermediary of capital and financial services”

Source: Finansiel Stabilitet, 2011.

See the ball, have the skills to hit it, have the guts and have a bat

”0.348”

Source: Highest batting avarage in MLB 2016

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See the ball I

Number of times ‘SIV’ and ‘Conduits’ are mentioned in financial stability reports

Financial Stability Report	SIV	Conduit
IMF Spring 2007	0	0
IMF Fall 2007	26	30
ECB Spring 2007	0	0
ECB Fall 2007	28	26
BoE Spring 2007	0	0
BoE Fall 2007	33	21
BIS 2007	0	0
BIS 2008	5	3

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Have the skills to hit it

In contrast to the monetary policy literature, research on macroprudential policy is still in its infancy and appears far from being able to provide an analytical underpinning for policy frameworks. This may be due to three main reasons. First, as discussed above, the macroprudential approach has come to play a visible role in policy discussions only very recently and pinning down the definition of financial stability and goal of macroprudential policy is much less obvious.[13] Secondly, we lack a thorough understanding and established models of the interaction between the financial system and the macroeconomy. Thirdly, there is no clear consensus on the relationship and delineation between microprudential policy and macroprudential policy.[14]

Kilde: BIS WP 337, 2011

Have the guts

European "plan" for systemic regulation?!?

European Parliament/ ECOFIN

"Steering Committee" (12 members)

European Systemic Risk Board (61 members!)

?

Advisory Technical Committee

ECB Secretariat

Plus

No Binding Powers and No Tools
"Explain or Comply"

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Have a bat I

- determining and/or **collecting and analysing** all the relevant and necessary information;
- **identifying and prioritising** systemic risks;
- **issuing warnings** where such systemic risks are deemed to be significant and, where appropriate, make those warnings public;
- **issuing recommendations** for remedial action in response to the risks identified and, where appropriate, making those recommendations public;
- when the ESRB determines that an emergency situation may arise **issuing a confidential warning** addressed to the Council and providing the Council with an assessment of the situation, in order to enable the Council to adopt a decision addressed to the European Supervisory Authorities (ESAs) determining the existence of an emergency situation;
- **monitoring** the follow-up to warnings and recommendations;
- **cooperating closely** with all the other parties to the European System of Financial Supervision (ESFS); where appropriate, providing the ESAs with the information on systemic risks required for the performance of their tasks; and, in particular, in collaboration with the ESAs, developing a common set of quantitative and qualitative indicators (risk dashboard) to identify and measure systemic risk;
- **participating**, where appropriate, in the Joint Committee of the ESAs;
- **coordinating** its actions with those of international financial organisations, particularly the International Monetary Fund (IMF) and the Financial Stability Board (FSB) as well as the relevant bodies in third countries on matters related to macro-prudential oversight;
- carrying out **other related tasks** as specified in Union legislation.

Source: ESRB Tasks

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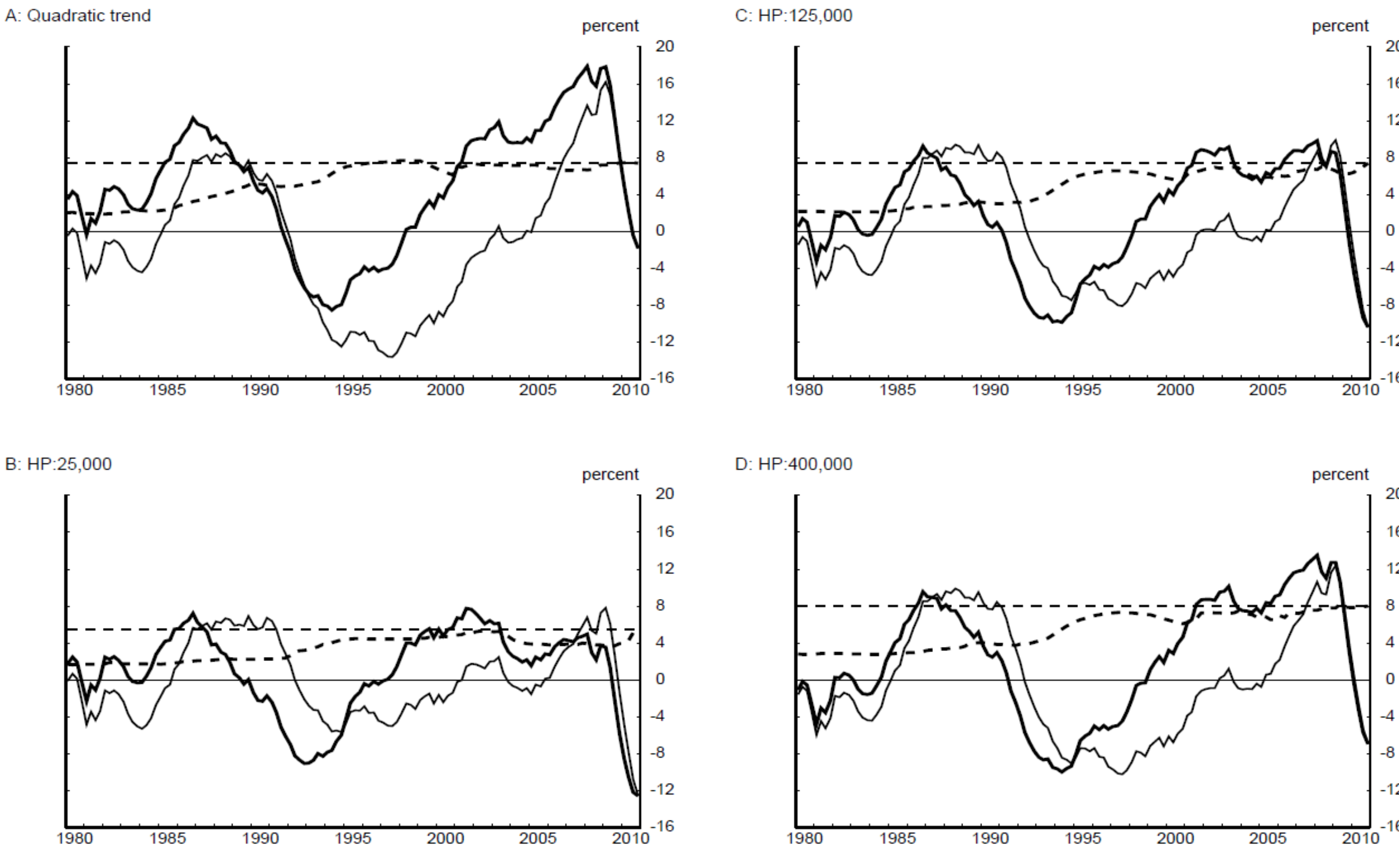
Have a bat II

Fig. 4: Credit-to-GDP Ratio Gaps and Series 90th Percentiles



Legend: Quasi real-time gap (thick, solid), Quasi real-time 90th percentile (thick, dashed),
Final gap (thin, solid), Final 90th percentile (thin, dashed),

Source: Edge and Meisenzahl, 2011

Is there no hope?

Don Kohns three conditions

- First, policymakers must be able to identify bubbles in a timely fashion with reasonable confidence.
- Second, a somewhat tighter monetary policy must have a high probability that it will help to check at least some of the speculative activity.
- And third, the expected improvement in future economic performance that would result from the curtailment of the bubble must be sufficiently great.
- Source:Vice Chairman Donald L. Kohn, at the Cato Institute's 26th Annual Monetary Policy Conference, Washington, D.C., November 19, 2008, Monetary Policy and Asset Prices Revisited

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The intellectual insight I

- In the simplest terms, one can characterize the macroprudential approach to financial regulation as *an* ***effort to control the social costs associated with excessive balance sheet shrinkage on the part of multiple financial institutions hit with a common shock****. To* make a compelling case for macroprudential regulation, two questions must be answered. First, what are the costs imposed on society when many financial firms shrink their assets at the same time? Second, why do individual firms not internalize these costs?

- Generalized asset shrinkage has **two primary costs: credit-crunch and fire-sale effects**. If banks shrink their assets by cutting new lending, operating firms find credit more expensive and reduce investment and employment, with contractionary consequences for the economy. If a large number of banks instead shrink their assets by all dumping the same illiquid securities (think of toxic mortgage-backed securities) the prices of these securities can drop sharply in a “fire sale”

- Kilde: Hansson et al, J. of Econ Perspectives, Winter 2011.

The intellectual insight II

- ..if the goal of regulation is to **prevent financial firms from shrinking their balance sheets excessively** in an adverse state of the world, a simple accounting identity imposes a lot of discipline on our thinking. In particular, when a bank is hit with a shock that depletes its capital, there are only two ways to prevent it from shrinking its assets:

  1) it can raise new capital to replace that which was lost; or

  2) it can let its ratio of capital to assets decline

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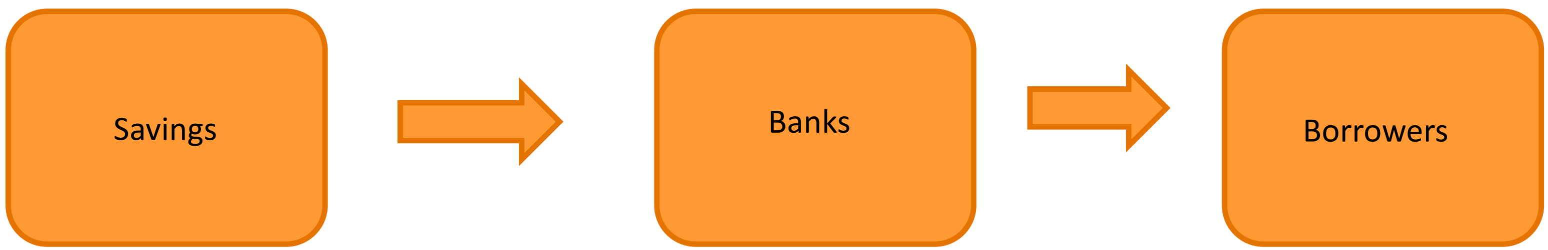
The Danish financial sector

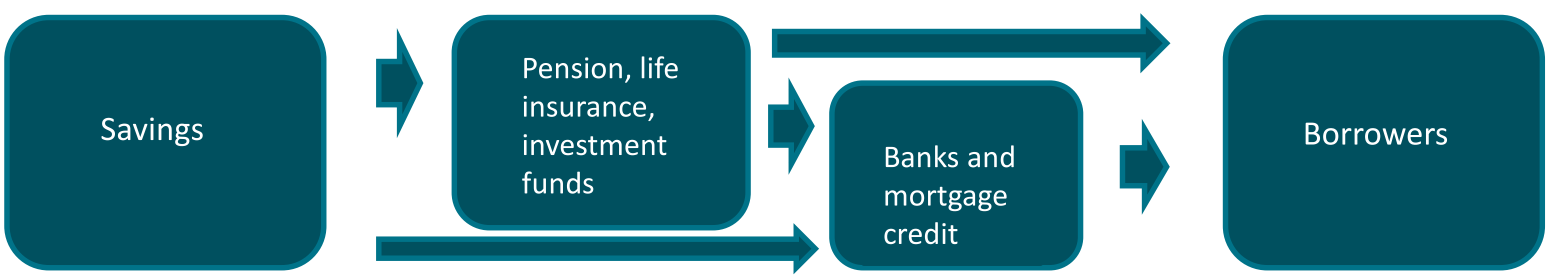
Denmark is an outlier on pension and mortgage credit

The American model

The European model



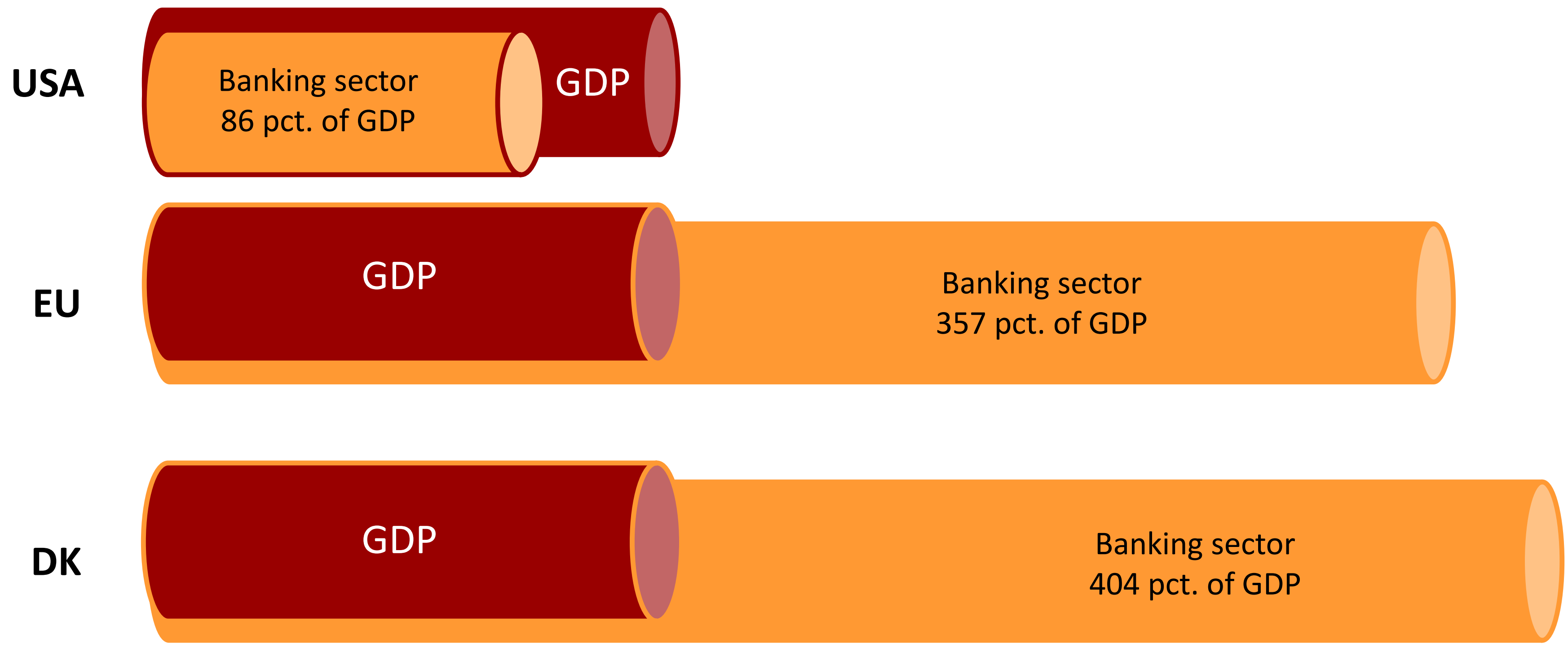
The Danish model



Risk of being run over in an international setting

Relative size of the banking sectors differs

- The banking sector in the EU and Denmark is much larger than in the USA



Reflects an underlying difference in the financial structures

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The Quant Perspective – Danish Financial balances

Danish GDP = 1.985 Bn DKK, pct. of GDP ult. 2015		
	Banks	
	Assets	Liabilities
Deposits	15%	84%
Bonds	42%	19%
Loans	83%	24%
Shares and other equity	8%	19%
Other	24%	34%
	Mortgage institutions	
	Assets	Liabilities
Deposits	37%	0%
Bonds	10%	139%
Loans	134%	34%
Shares and other equity	0%	10%
Other	1%	2%
	Pensions and insurance	
	Assets	Liabilities
Deposits	2%	0%
Bonds	60%	0%
Loans	3%	21%
Shares and other equity	26%	10%
Other	9%	151%
	Investment funds	
	Assets	Liabilities
Deposits	1%	41%
Bonds	21%	0%
Loans	0%	0%
Shares and other equity	17%	0%
Other	4%	2%

Source: Reporting to the Danish FSA

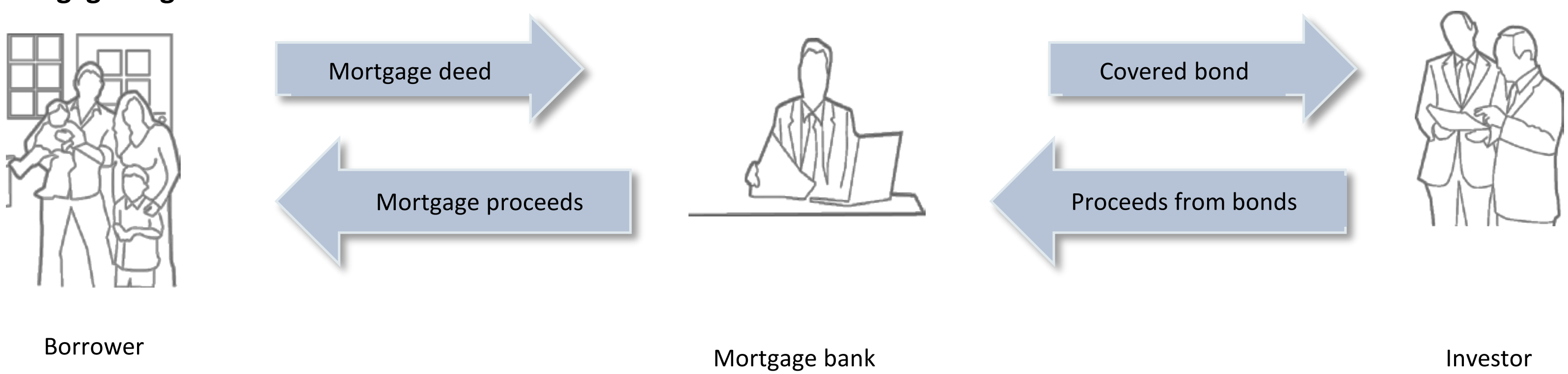
The specialized Danish mortgage banking model

- First mortgage bank established in 1797

- Mortgage banks only allowed to grant loans against mortgage on real property
- Loans may only be funded through issuance of covered bonds or mortgage bonds
- Mortgage banks cannot take deposits or access the money market
- Only lending within max. lending limits of 60 or 80 percent of market value of the mortgaged property depending on property segment
- This model does not always fit very well into international bank regulation!

The Basics of the System

Mortgage origination



Payments

The Basics of the system - The Balance Principle

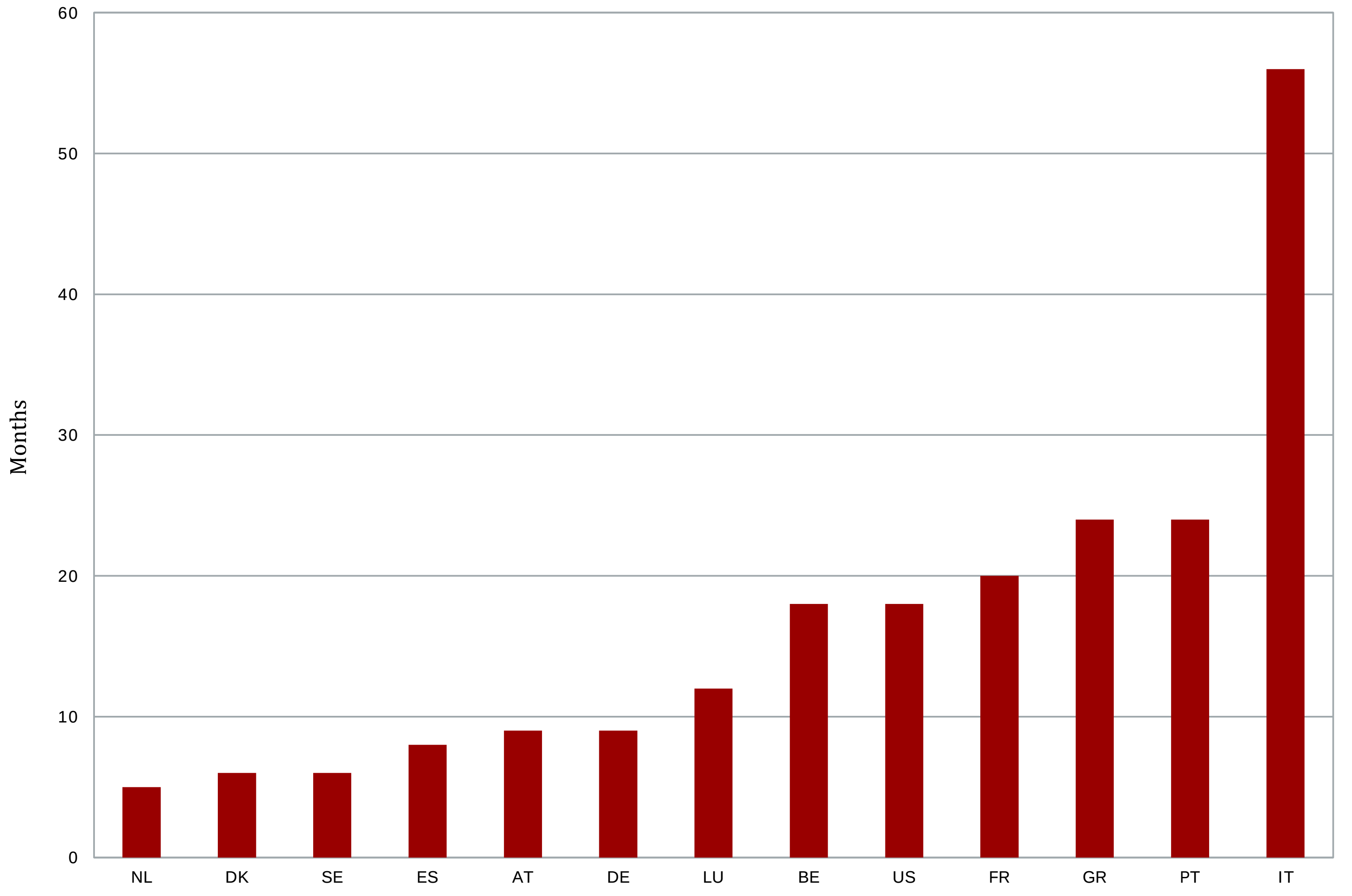
- Cash flow on the loan = cash flow on bonds issued to fund the loan
  - Eliminates all financial risks for the issuer
  - Borrower assumes price risk at refinancing (if any)

- Tap issuance
  - Bonds issued daily to fund new loans = No pipeline risk
  - Daily bond buybacks to match redeemed loans
  - Issuer active as market maker, seller and buyer every day

- Price transparency

- Product transparency and standardisation
  - All loan features embedded in the bonds

Typical duration of a foreclosure procedure



Source: ECB & Nykredit

Balanced Mortgage Bond Asset Liability Management

Assets

- Long duration property loan (asset)
- Real property mortgage (collateral)

Liabilities

- Balanced Mortgage Bonds

ALM Risks

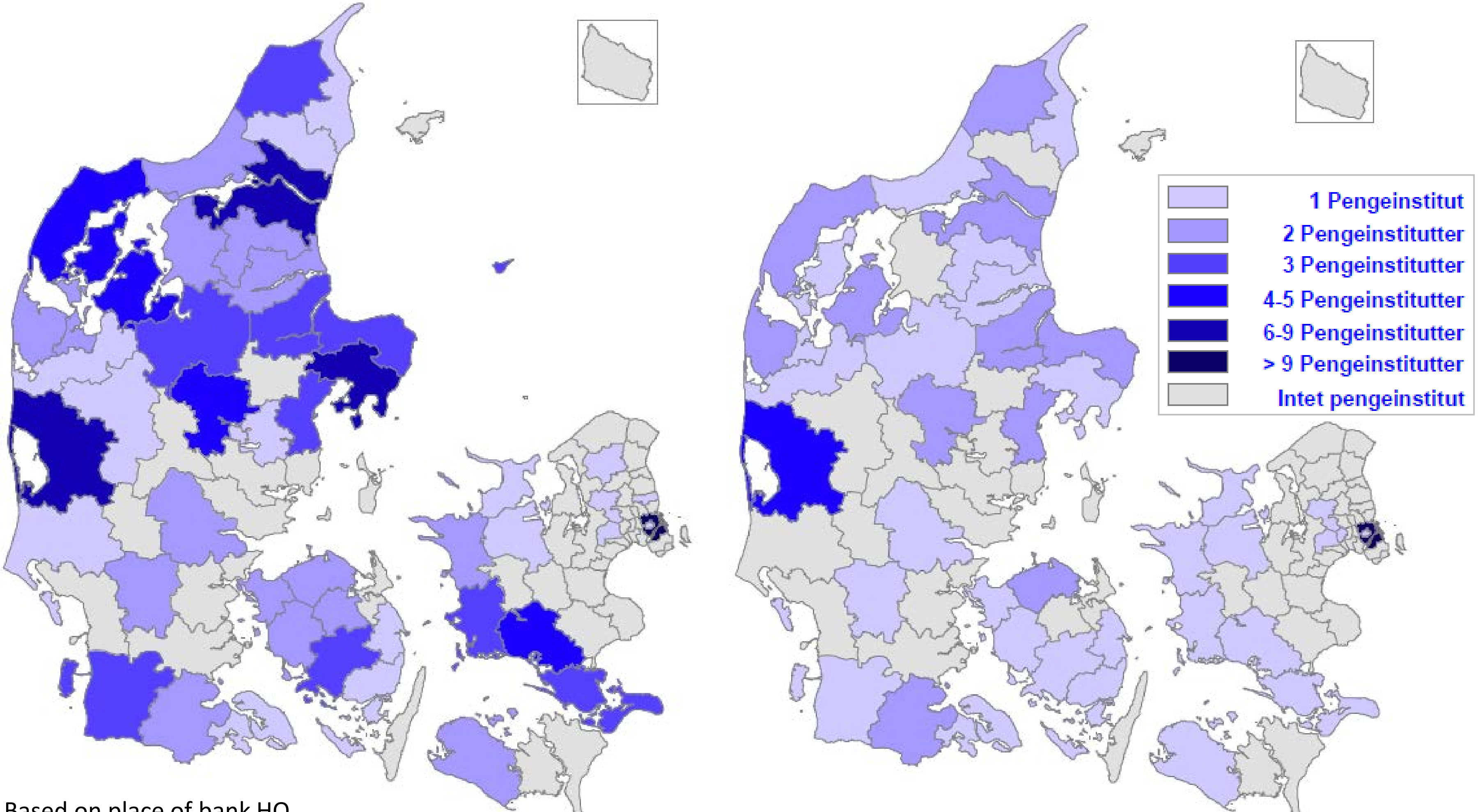
- Credit risk
- ~~Maturity mismatch~~
- ~~Interest rate mismatch~~
- ~~Currency mismatch~~
- ~~Hedging/CDO/insurance mismatch & counterparty risk~~
- ~~Refinancing risk~~
- ~~Prepayment risk~~
- ~~Legal risk~~

Lessons learned from the financial crisis

Number of Danish banks – before and after the financial crisis

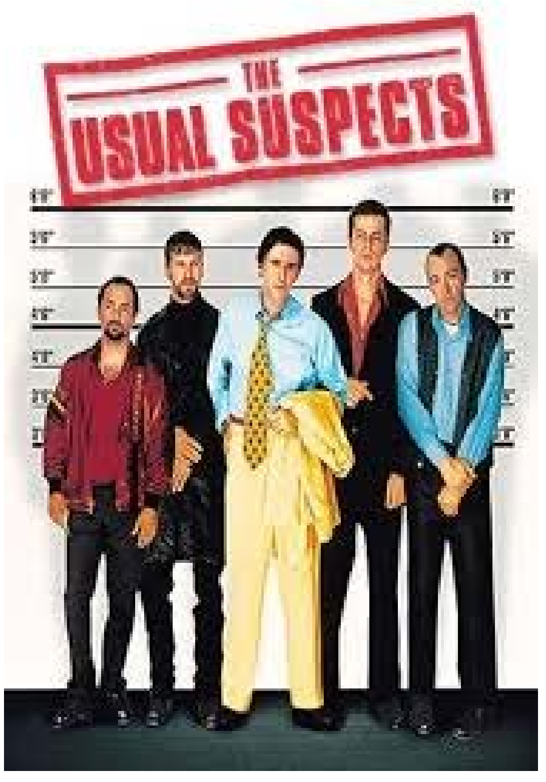
Ultimo 2007: 145 banks

Primo 2017: 74 banks



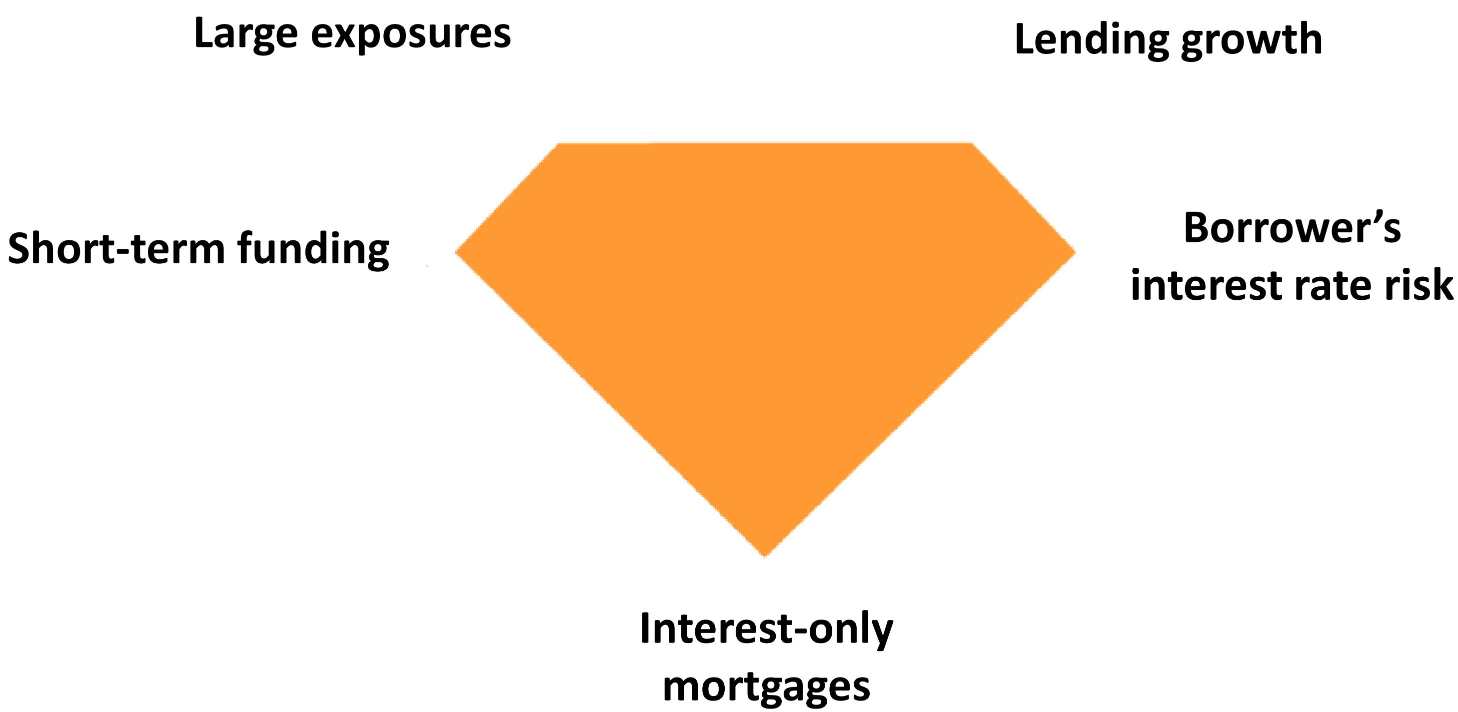
Based on place of bank HQ

History repeats itself



- Defaulted banks, characteristics:
  - High growth at the expense of credit quality
  - Misjudgment of credit risk impact
  - Large exposures and concentration

Sustainable business models …



… yield stable financial systems

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FSA strategy towards 2020

”Justified confidence”

Framework for the FSA's new strategy

- The financial system is vulnerable, interconnected and complex
- Significant uncertainty about future economic developments
- Risk is shifting from the collective level to the individual creditor or pension saver
- Financial regulation is increasingly decided at international level
- New digital business models prevail

New strategy aims at ensuring justified confidence

Our job is to help ensure that consumers and corporations are able to make financial choices in the knowledge that we are there to protect their interests.

Seven strategic focus areas

1. Supervision in good times

2. Supervision with a systemic perspective

3. Well-functioning capital markets

4. Technology, cyber risk and new business models

5. Consumer protection

6. Safeguarding Danish interests in international fora

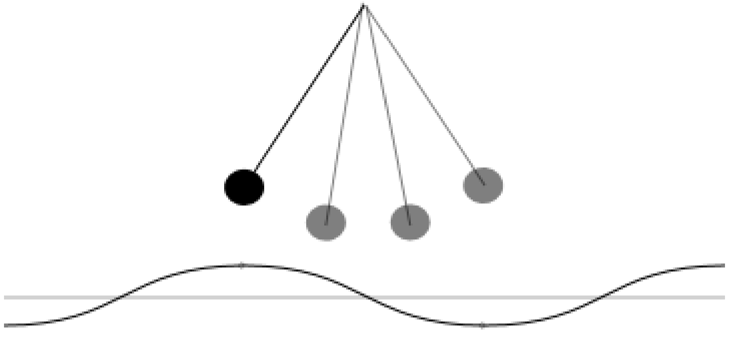
7. Prevention of money laundering and financing of terrorism

Supervision in good times

We must be Denmark's financial memory.

Continued caution in spite of smaller profits

- The pendulum will swing back and impairments will increase once more, regardless of prudent lending.



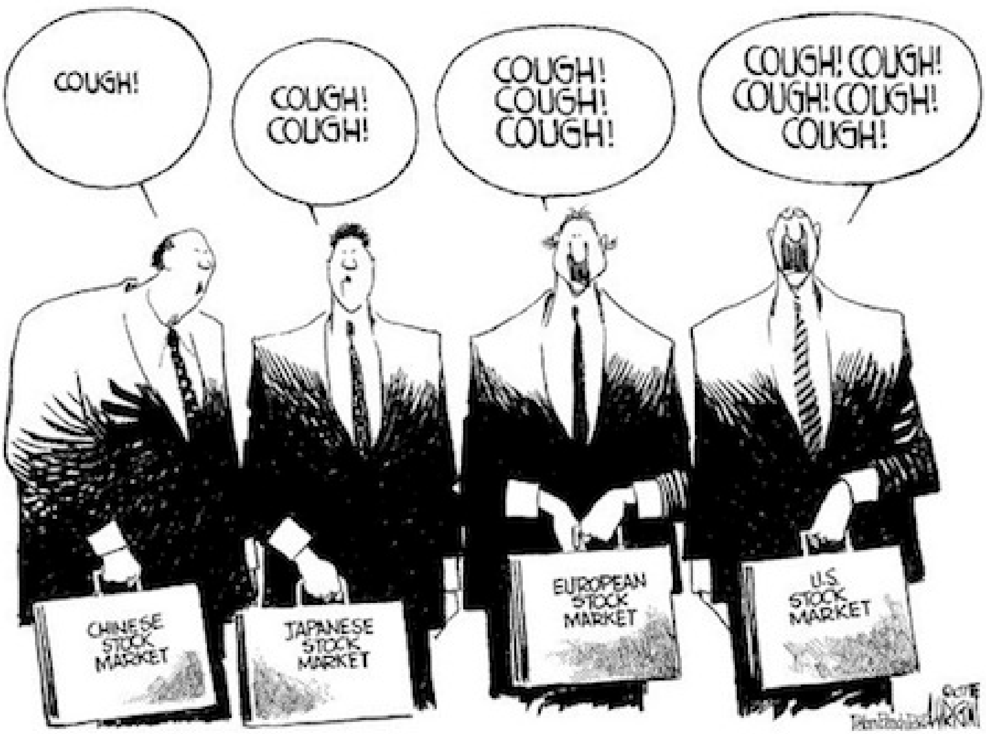
- We have yet to see the last crisis.
- But next time it should not be a bank crisis.

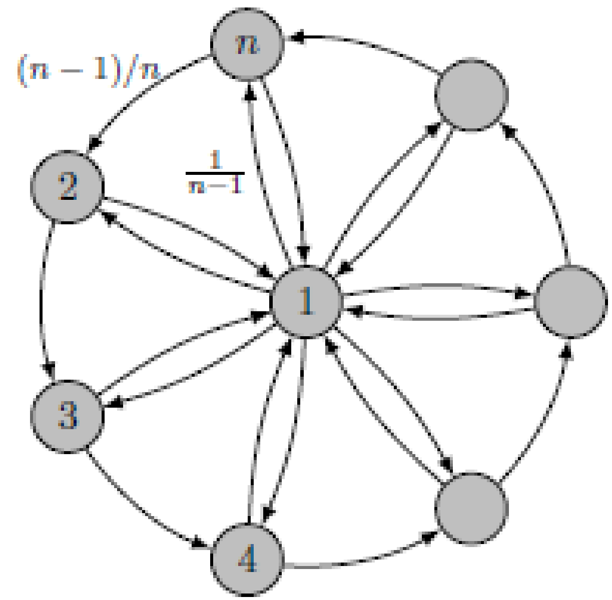
Supervision with a systemic perspective

Data and analysis ensure that risks are seen together.

Vulnerable, connected and complex system

DET SYSTEMISKE
RISIKORÅD





Well-functioning capital markets

Possible sources of finance should increase without damaging financial stability.

Technology, cyber risk and new business models

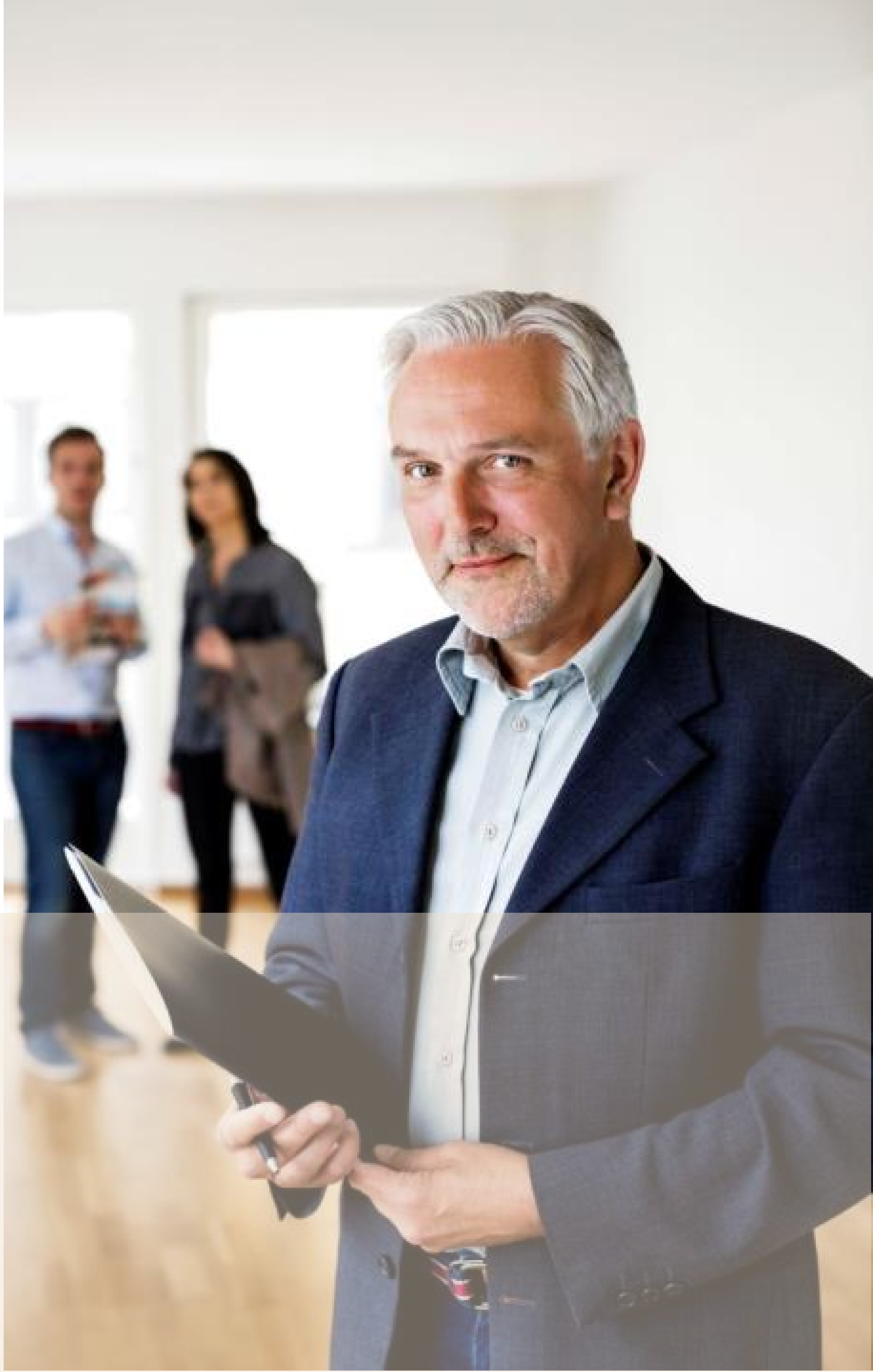
Increased focus on supervision of new tech-based business models and cyber risk in the financial system.

Digitalisation and new business models is already happening

novo nordisk®

FinTech is "the new black"

5. Consumer protection



1. Consumer knowledge
2. Information and counselling
3. Products and conditions

6. Safeguarding Danish interests in international fora

We shall safeguard Danish interests by stepping in in the early phases of negotiations, when topics and frameworks are decided.

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Where does the FSA participate in the EU work?

- The Commission – committees, working groups etc.
- The Council – Negotiations between member states
- The EU Parliament (impact indirectly)

- The new European supervisory – so-called ESA:
    - ESMA: European Securities and Markets Authority
    - EBA: European Banking Authority
    - EIOPA: European Insurance and Occupational Pensions Authority

In all relevant networks

7. Prevention of money laundering and financing of terrorism

1. More money laundering inspections
2. More guidance
3. More collaboration with other authorities

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Resolution and recovery

Never again public money for bailouts.

Bankruptcy or resolution?

1. Bankruptcy

2. Winding up

3. Restructuring

Resolution mechanisms and bail-in

- Going forward: Losses are taken by the banks (stockholders, creditors, etc.) – not the state
- Approach to resolution: Minimize the risk of losses for simple creditors
- That requires padding – therefore MREL-requirements
- EU development: MREL is subordinated to simple creditors

... increases the likelihood of private solutions

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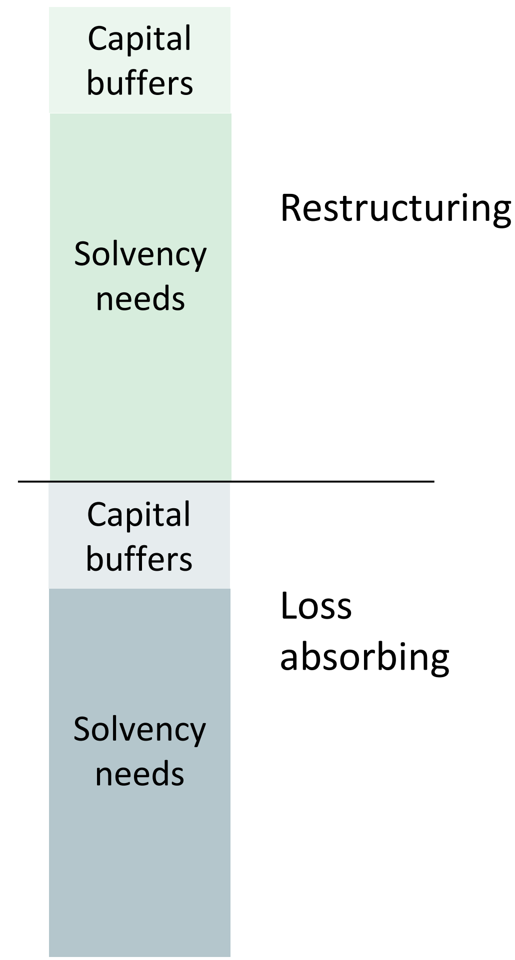
Principles for the resolution of SIFIs

- Restructuring and back to the market.

- The group remains together.

- The MREL is to be set at two-times the total capital requirement (incl. solvency needs and statutory capital buffers), in order to restore solvency and market confidence.

- It must be specified in contracts for senior debt, that it will be converted into equity in a recovery – otherwise it doesn't count towards the MREL.

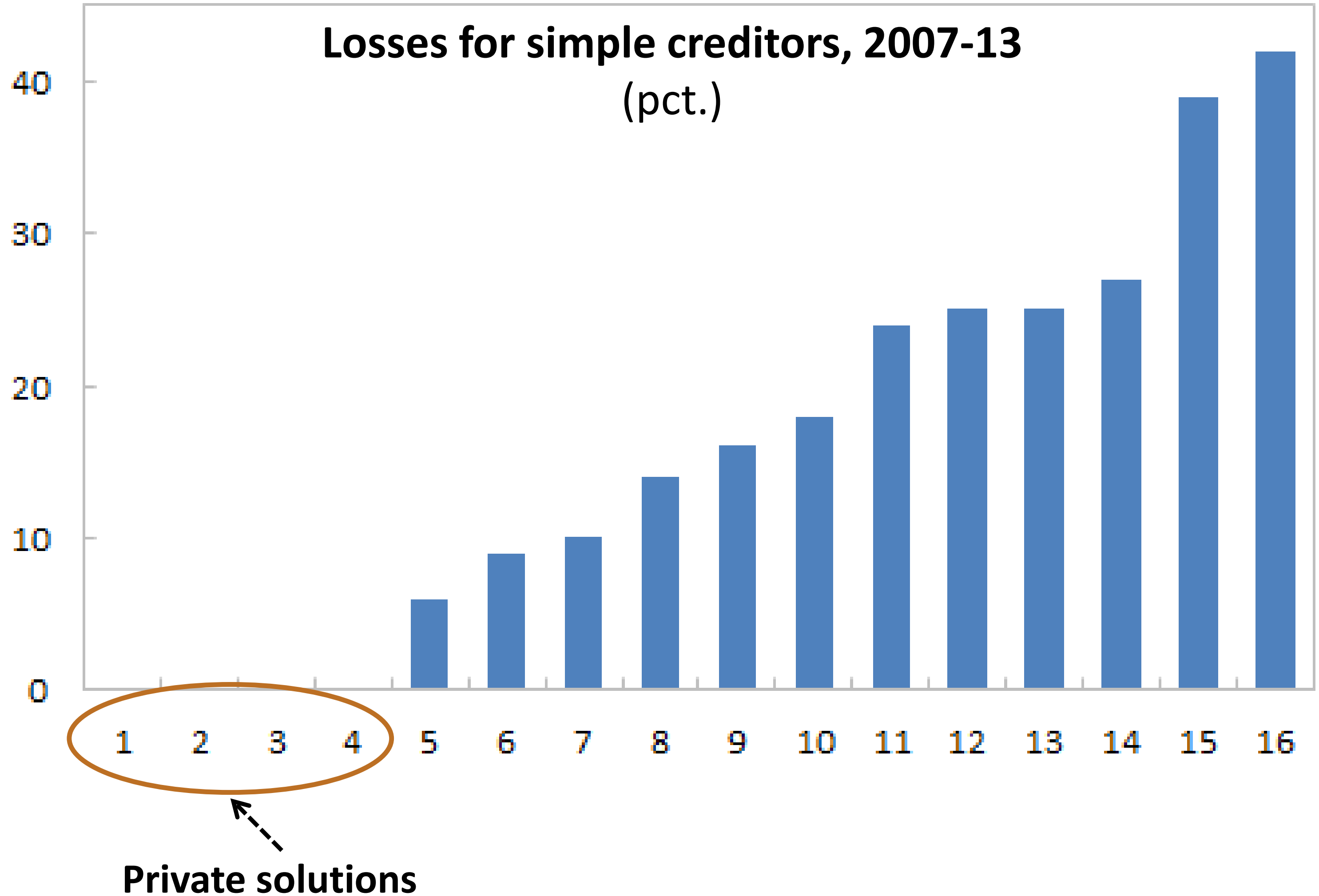


Bail-in ranking

Bail-in ranking without and with contractual conversion

Own funds	Common Equity Tier 1 capital Hybrid core capital Tier 2 capital	Own funds
Senior debt - - - - - - - - - - Other unsecured claims	Senior unsecured debt Eligible deposits from large companies, not recovered by the Guarantee Fund Other claims, including legal requirements	Senior debt with contractual conversion Other unsecured claims
Eligible deposits	Eligible deposits from private individuals and small companies, not covered by the Guarantee Fund	Eligible deposits
Covered deposits	Covered deposits – in practice the Guarantee Fund carries the loss	Covered deposits

Lessons from the financial crises



History shows potentially serious losses

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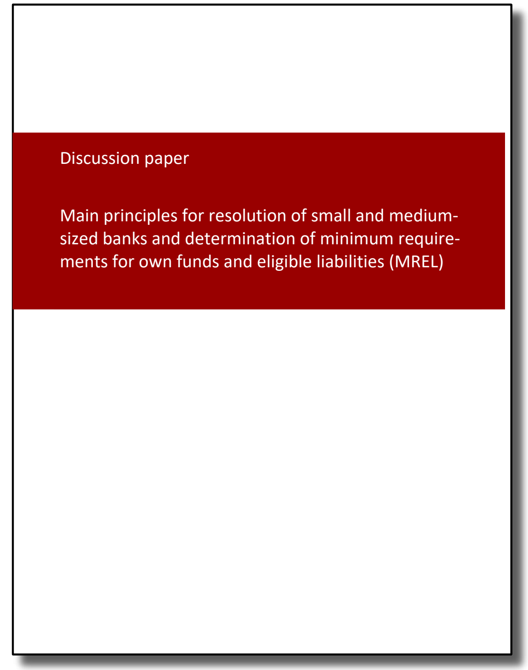
What about institutions that are not systemic?

- 19 January 2017:
  The Danish FSA presents its initial considerations on how small and medium-sized banks should be resolved, and how the MREL can be determined.

- 30 October 2017:
  Presentation of final principles for resolution.
  (Only available in Danish)

Discussion paper


Discussion paper

Main principles for resolution of small and medium-sized banks and determination of minimum requirements for own funds and eligible liabilities (MREL)

See more:
https://www.finanstilsynet.dk/en/Nyheder-og-Presse/Pressemeddelelser/2017/PM-diskussionspapir-om-afviklingsstrategier-NEP-krav-mindre-mellemstore-pengeinstitutter
https://www.finanstilsynet.dk/da/Nyheder-og-Presse/Pressemeddelelser/2017/PM-nepkrav301017

Small and medium-sized banks

- If resolving through bankruptcy, simple creditors, including depositors with larger deposits than those covered by the Deposit Guarantee Scheme, must expect losses as a result of the resolution.

- Other simple claims, such as bank guarantees provided to customers, claims from suppliers of goods, and claims for damages from customers resulting from poor advice etc., will also be written down.

- If bankruptcy is the preferred model for resolution of small and medium-sized banks, this is likely to have consequences for the business model of the banks in question, since customers might leave.

- The authorities and the sector organizations representing the banks share a common understanding that resolution plans should also reduce the risk of losses for simple creditors in the event of a resolution.

Resolution approach: small- and medium-sized institutions

Resolution strategy:

- Orderly winding-up using BRRD tools instead of insolvency

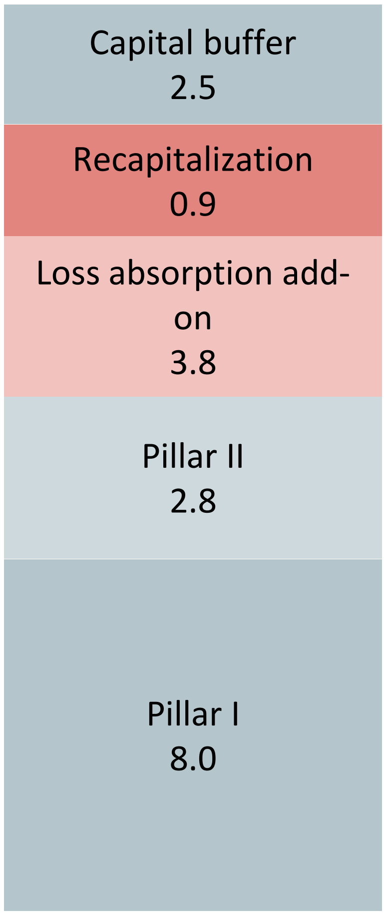
- Aim of the approach:
  - Access to payment services should be maintained and available on Monday morning after the resolution weekend
  - Avoid disruptive and value destructing effects of insolvency proceeding
  - Reduce the risk that simple creditors (including depositors) incur losses in resolution – experience shows that losses can be large

- BRRD tools expected to be used:
  - Sale of assets, while remaining activities are wound down by Finansiel Stabilitet (possibly with a bank license)
  - Write down/Conversion of Own Funds Instruments
  - Conversion of senior debt (subordinated to simple creditors)

Winding up is not free

- History has shown us that there can be significant losses in resolution – additional need for capital in resolution
  - To absorb losses due to a more cautious valuation in resolution (valuation 2)
  - To (re)capitalize the institution consisting of the remaining activities which initially can't be sold
- Conditions for the resolution strategy to be credible:
  - Enough eligible liabilities and own funds – MREL requirement 3½-6 percentage points higher than capital requirements.
  - Subordination: It must be specified in contracts for senior debt, that it will be converted into equity in resolution – otherwise is doesn't count in MREL.
- A 'hard' requirement by end 2022.
  - The expectation is that most institutions will be able to meet the requirement through retained earnings.

What should be the size of the MREL?



- Individual recapitalization amount, needed to continue activities which cannot be sold immediately.
- Individual loss absorption add-on to cover that sale of assets implies that losses will exceed (going concern) capital requirements.
- Total MREL will be between 3½ to 6 percent higher than capital requirements in 2022.
- Higher for institutions with balance sheet > € 3 billion: Starting at 7½ percent increasing as institutions approaches SIFI size.

Averages, in percent of REA

When does the FSA takes action?

Excess capital	Recovery. The bank takes action.
Capital buffers	Early involvement. The FSA can introduce restrictions etc. with short notice.
Recapitalization	Possible transfer of control of the bank to 'Finansiel Stabilitet'. Concrete assessment, but can go fast after the circumstances. Patient approach if non-compliance is due to lack of opportunity to renegotiate.
Loss-absorption	
Pillar II	Immediately transfer of control of the bank to 'Finansiel Stabilitet'.
Pillar I	

When does the FSA takes action?

- In the event of non-compliance with the MREL (incl. capital buffers), there is discretion whether the control of the bank is transferred to 'Finansiel Stabilitet'.
- The FSA is responsible for deciding that a bank is failing or likely to fail and if so, FSA subsequently transfers control of the bank to 'Finansiel Stabilitet'.
- The FSA must make a specific assessment of the consequences that the non-compliance is to have.
- The scope of action for the Danish FSA is severely limited when the objective is to reduce the risk of losses for simple creditors, once the capital buffers are deemed to have been exhausted.
- However, there can be no guarantee that simple creditors will suffer no losses at all - depends on how large the losses turn out to be.

FINANSTILSYNET

The Danish pension system

Justified confidence …

Savings for retirement are important – It is the income when we get old.

The FSA wants focus on product characteristics and consumer protection in unguaranteed products.

… Also for retirement savings?

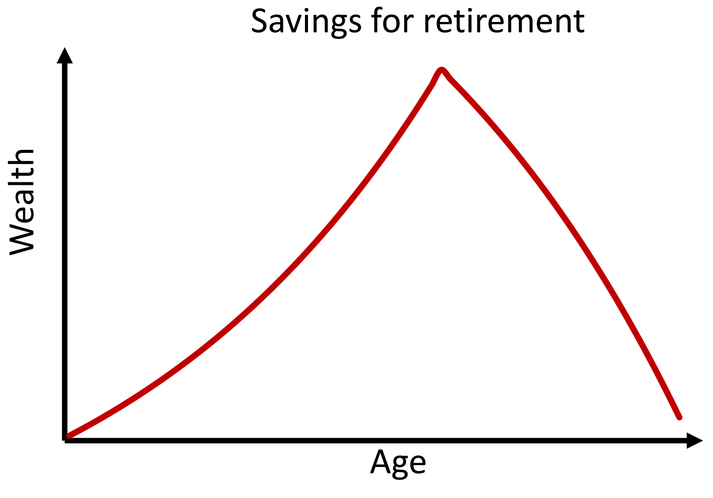
What is pension?

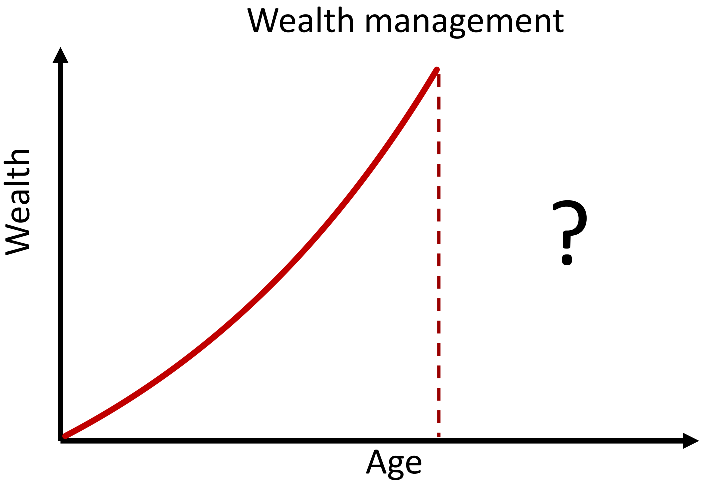
Savings for retirement:

- Phases for savings and payout
- Often shared risk of lifetime
- Solvency II

Wealth management:

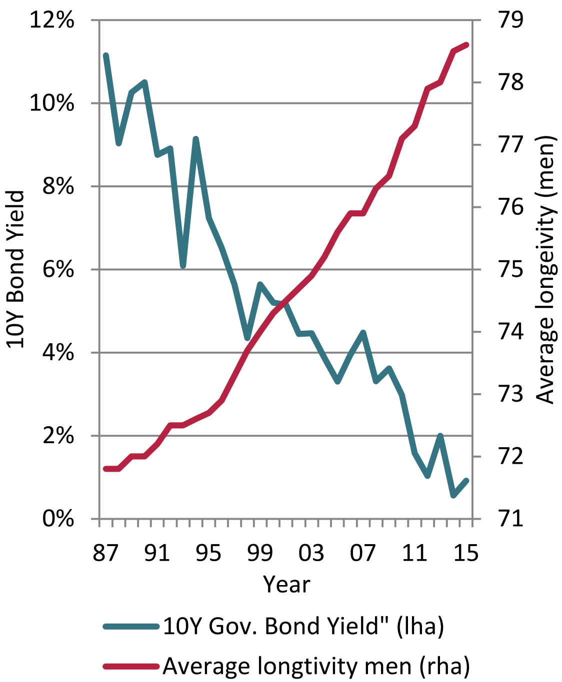
- Savings
- No shared risk
- MiFID





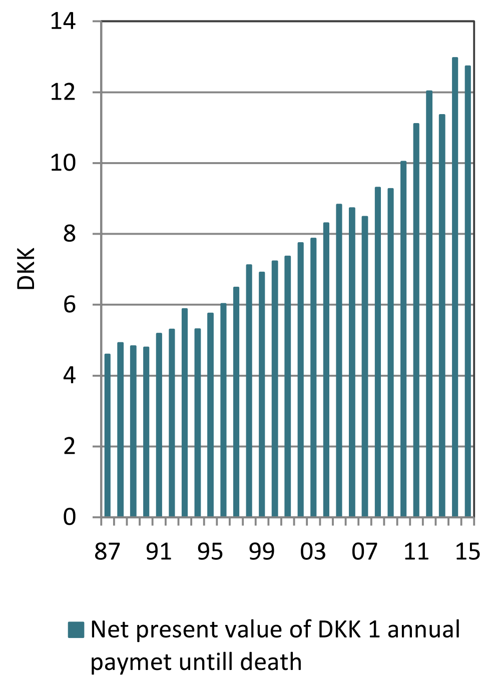
Changes in the pension sector

Decreasing interests and increasing lifetime



Source: Statistics Denmark

… increase the value of pension guarantees …



… and increase the capital requirements for guarantees

Source: Calculations by the Danish FSA based on data from Statistics Denmark

… A shift from guaranteed to unguaranteed products

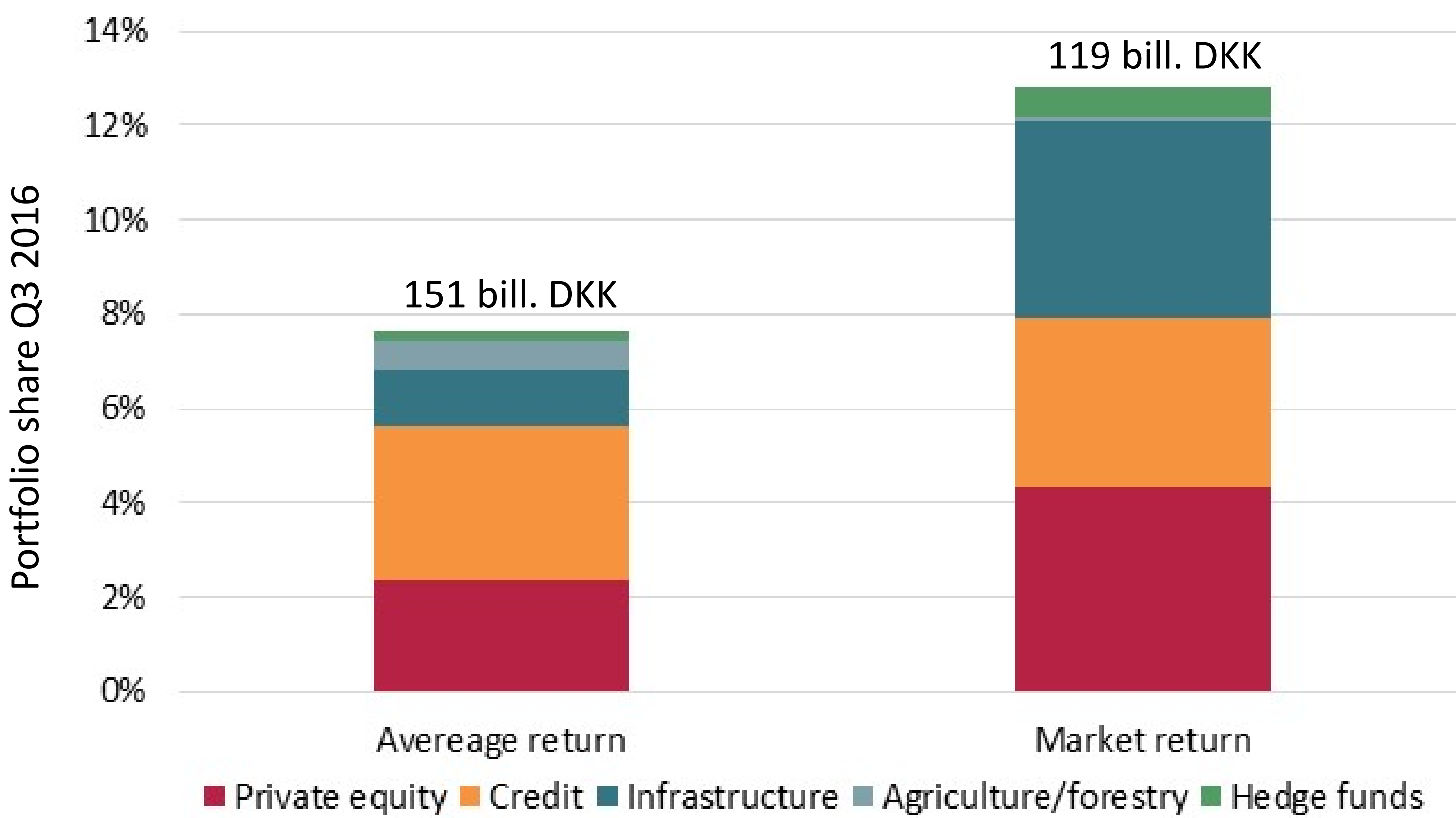
FINANSTILSYNET

Market return-products without guarantees on the rise …

Source: Reportings to the Danish FSA

… Strengthen by new decision of existing arrangements

Returns through alternative investments



Source: Reportings to the Danish FSA

... especially in market returns

FINANSTILSYNET

Solvency II regulation does not have the same impact on unguaranteed products…

Solvency II

Pillar I

Quantative requirements

Pillar II

Requirements for

- Governance
- Risk Management
- Prudent person

Pillar III

Requirements for

- Disclosure
- Transparency

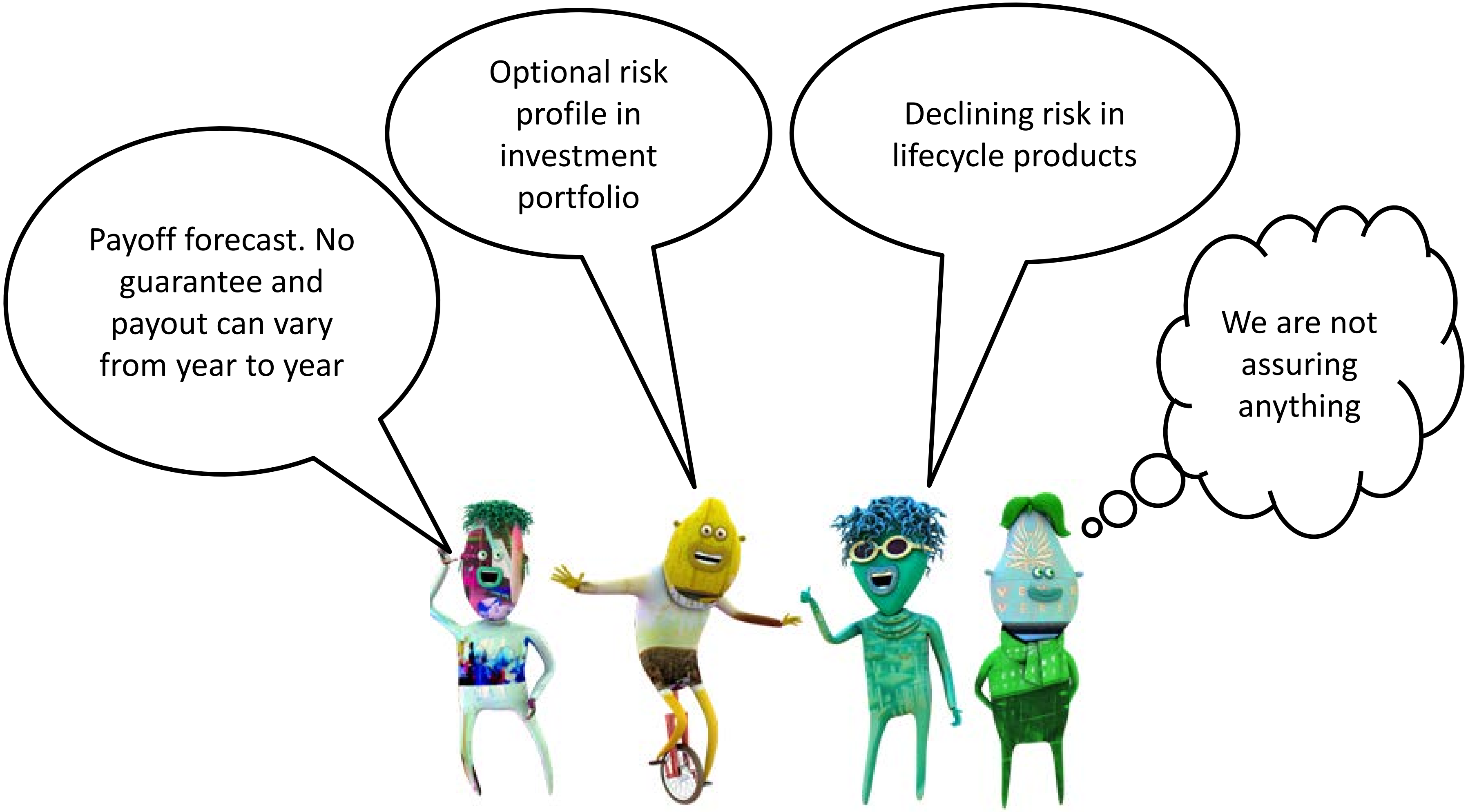
… "No hand on the heat" for unguaranteed products

Prudent Person Principle

- From Solvency II directive:
  - Pension companies must invest their assets, so that the customers' interests are held in the best possible way.
  - The company must invest in assets with risk, which the company can identify, measure, monitor, manage, control and report on.
  - The investment strategy must reflect what the customers have been assured.

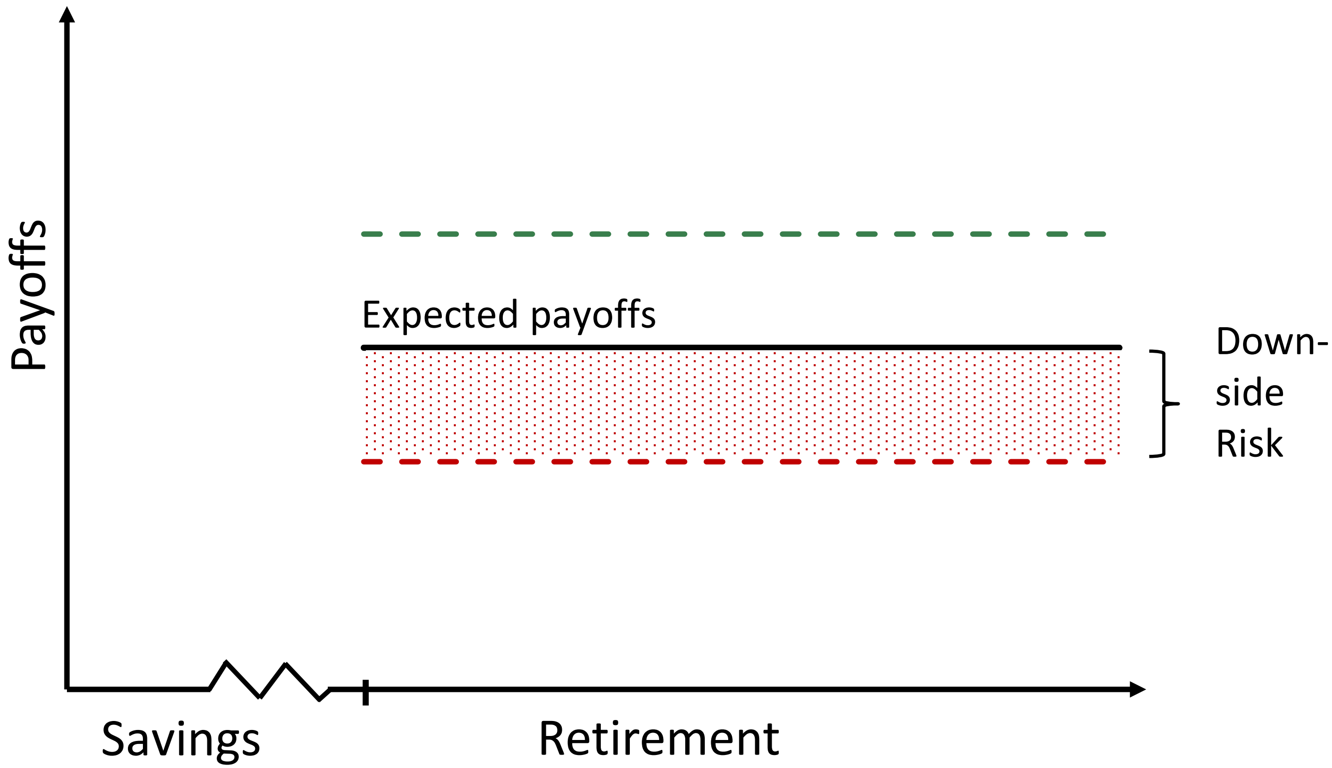
No exact requirements towards assuring customers

What are customers assured in unguaranteed products?

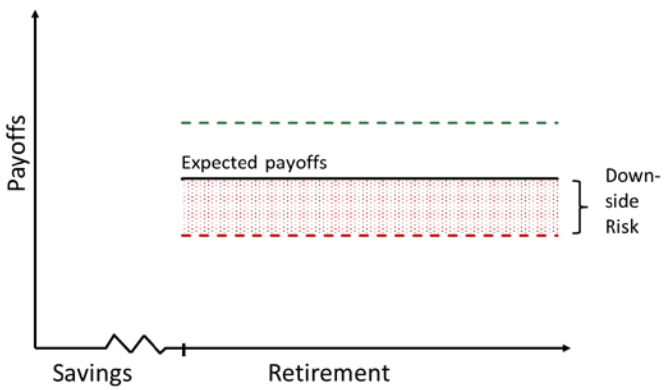


Often a risk profile in market returns

What is must important to know for the customer?



Consumer protection in unguaranteed products



Possible approaches:

- Requirements for the company to take more precise position regarding product characteristics relating to unguaranteed products?

- Requirements for information to the customers regarding yearly payoffs and relating risk?

- Regulated boundaries for the risk, in relation to yearly payoffs, that a customer can have?

What is the need?

Consumer protection – if pension savings were subject to MiFID

… Customers with portfolio management arrangements had to **take a test*** to clarify, whether the product is suitable for the customer based on individual information:

- Knowledge and experience with the product
- Willingness to take risk
- Purpose and horizon with investment
- Economic ability to bear a loss

*) Investorbekendtgørelsen §16

Debate regarding unguaranteed products

- The FSA has held a conference with the sector and made a discussion paper

- The FSA wants a debate regarding …
  - Product characteristic
  - Risk management
  - Consumer protection
- … for unguaranteed products where the risk is "individualized"

Major takeaways

1. Financial regulation and supervision is justified by asymmetric information and externalities
2. Banking suffers from structural instability
3. Excessive expectations to macroprudential policies?
4. Financial crisis was a rerun of unsustainable models
5. Denmark has two peculiarities:
   - Covered bonds dominate financing
   - Pension funds are large

6. Mission of the FSA is to facilitate a well functioning financial system with few serious crises
7. New strategy aims at ensuring justified confidence: Seven focus areas
8. Resolution and recovery: Never again public money for bailouts.
9. Risks in pension systems have been individualized.