

# The Danish Mortgage Credit System and the US Experience

Workshop on the Appropriate Government Role in U.S. Mortgage Markets  
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## Key points

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- The Danish mortgage system could provide input to the reform of the US system
  - Similarities in relation to products offered + capital markets funding
  - Easy wins
    - Eliminate market risk in intermediary
    - Possibility to repay mortgage at market price – eliminate moving costs
    - Create skin in the game
      - Originate to hold without structural subordination
  - More difficult trade offs
    - Reducing credit risk through full recourse loans
      - Lower credit costs
      - Higher liquidity as no incentive to search for private information
    - Implication for social model
      - Possibility to recover from default
      - Social safety net
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# US vs. Danish mortgage system

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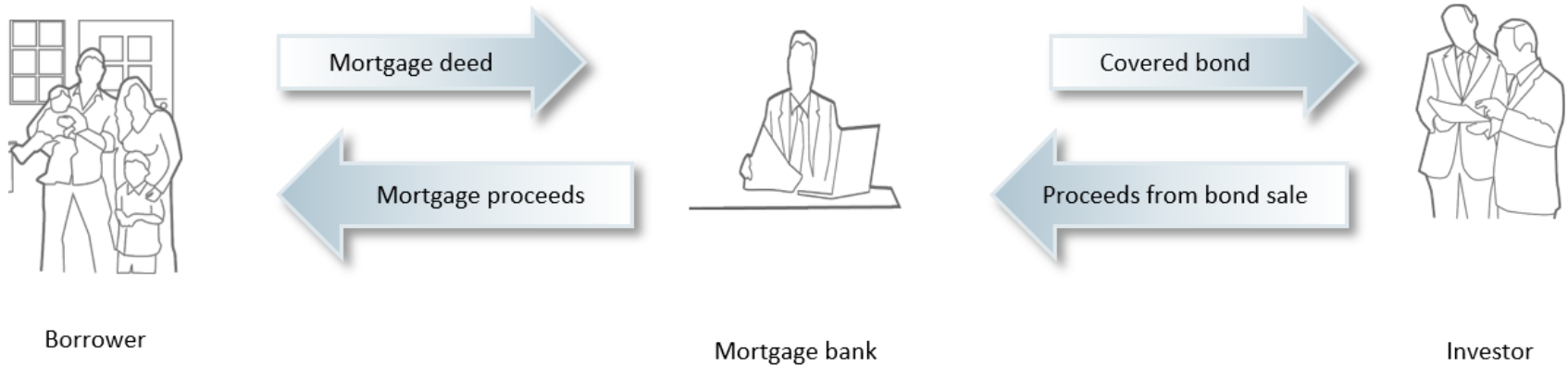
US	Characteristic	DK
Original product is fixed rate with refinancing option (although more products have emerged)	<b>Product</b>	Original product is fixed rate with refinancing option (although more products have emerged)
Capital market financing	<b>Financing</b>	Capital market financing
Determined by issuer	<b>Interest rate</b>	Determined in bond market
Option to redeem at par	<b>Redemption</b>	Option to redeem at par and market price
Reduced by use of derivatives	<b>Market risk</b>	Minimized by match funding requirement
Heterogenous market	<b>Market liquidity</b>	Homogenous market, cf. Limited business model
Originate to distribute	<b>Skin in game</b>	Originate to hold
Securitizations, CDOs, resecuritizations	<b>Transparency</b>	Vanilla bonds, individually referable to specific loans
Recourse to collateral	<b>Legal enforceability</b>	Dual recourse for investors, quick and efficient foreclosure regime.

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And government involvement in the US and not in Denmark

# Danish Mortgage Banking - The basics of the system

## Mortgage origination



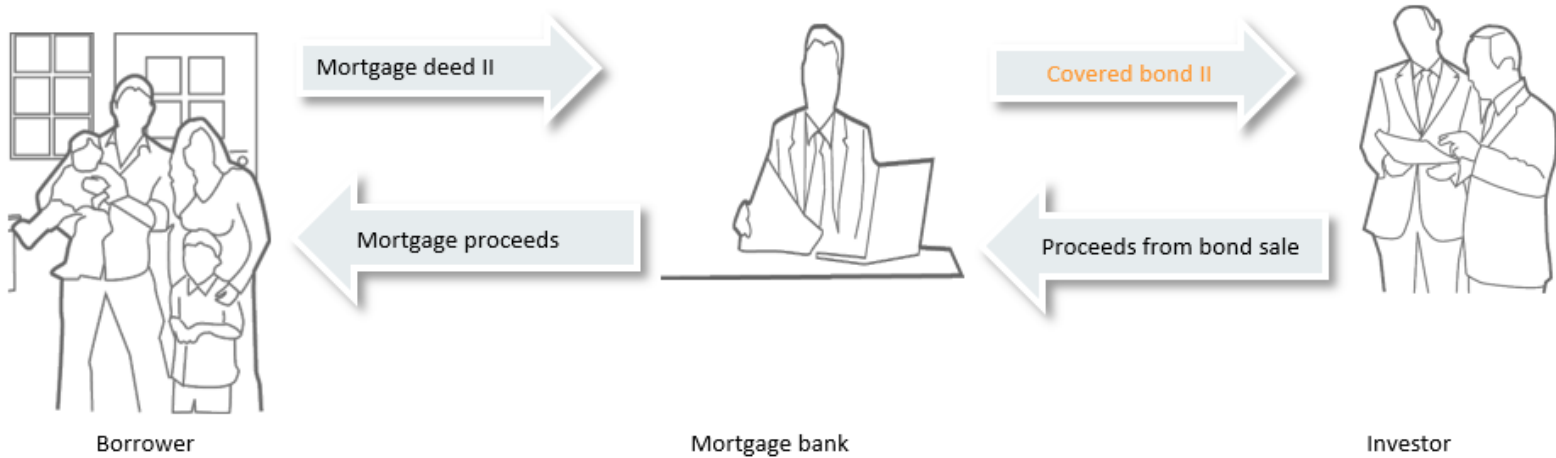
## Payments



Interest rate set in bond market and no market risk

# Danish Mortgage Banking - The basics of the system (continued)

## Remortgaging Origination of new mortgage



## Prepayment of old mortgage



Possibility to repay mortgage at market price; eliminate moving costs + create liquidity

# The Danish Mortgage Model – stylized balance sheet

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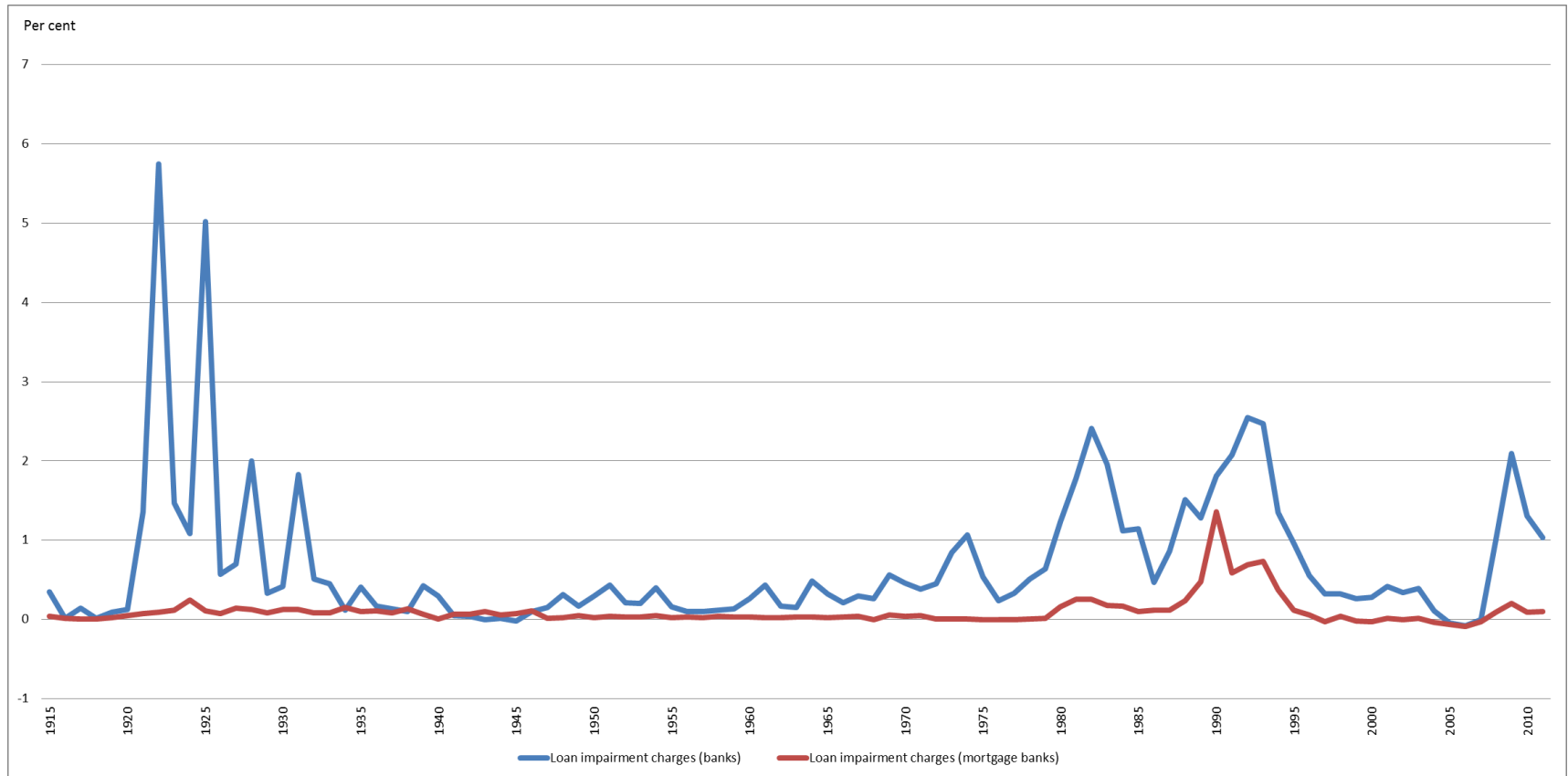
Assets	Liabilities
Loans	Bonds
Liquidity	Capital

- Not deposit funded
- Lending limits of 60 or 80 percent of market value of the mortgaged property depending on property segment
- Incentive for originator to provide refinancing/credit risk and not market risk with originator

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Skin in the game - Originate to hold without structural subordination

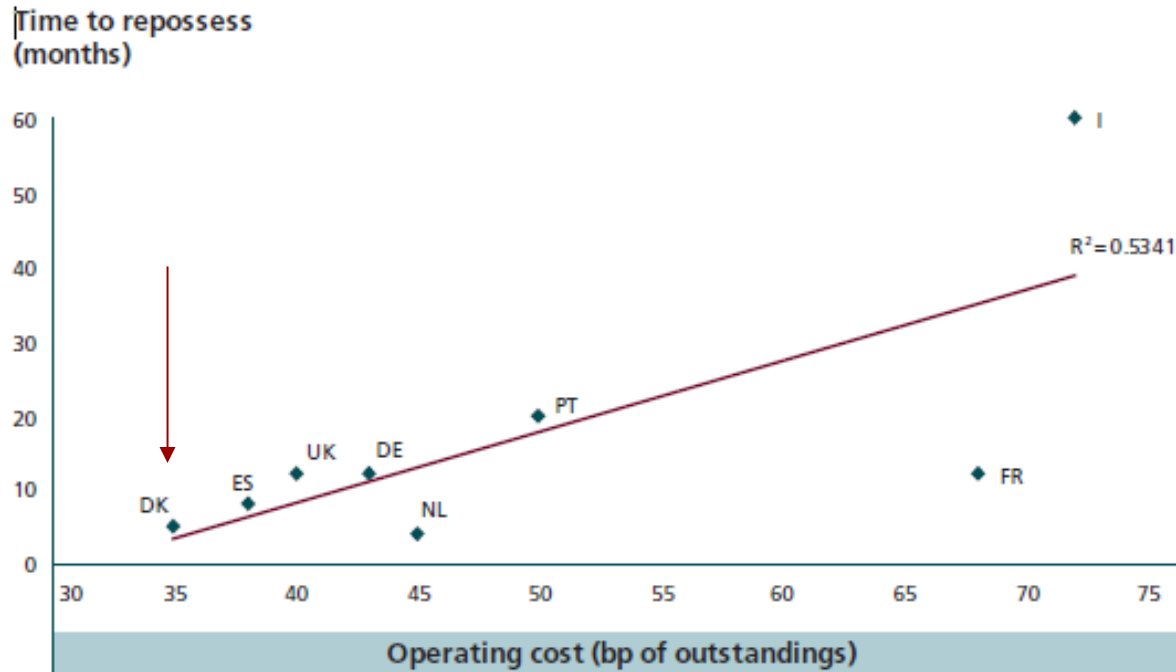
## Low historical impairments (Loss provisions)



- Danish mortgage institutions have experienced very low impairments on loans financed by covered bonds – also during economic and financial stress periods.

Credit risk reduced through full recourse loans

# Legal enforceability



Source: EMF, Mercer Oliver Wyman

## DK

- Avg foreclosure takes 6 months
- Loss will constitute a personal claim
- Community rehousing obligation

## EU

- Foreclosures take 6 years in Italy at the extreme
- Social consideration given more weight in some jurisdictions

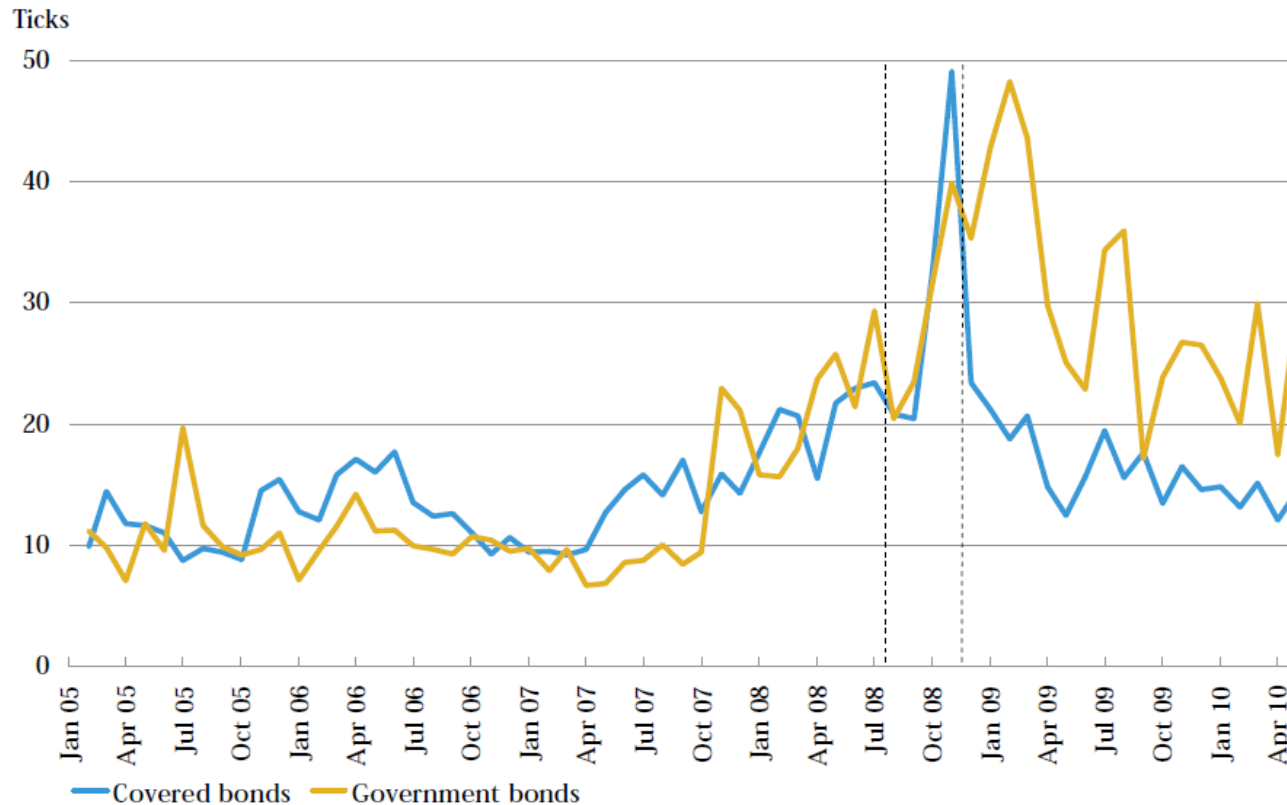
And strong creditor protection



# Development in bid-ask spread during the crisis

LONG-TERM BONDS – BID-ASK SPREAD (ROLL )

Chart 11



Note: Only bonds with an outstanding nominal amount of at least EUR 1 billion and trades of at least DKK 10 million have been included.

Source: Nasdaq OMX, Danish FSA and Danmarks Nationalbank.

High liquidity as no incentive to search for private information

## Questions to be answered

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- **Full recourse or no recourse?**
    - Implications for costs
    - And social model
  - **Accept or no accept of tail risks?**
    - Implications for role of public authorities or not
  - **And then the easy ones...**
    - Originate to distribute or to hold?
    - Market risk in intermediary or not?
    - Deposit funded or market funded?
    - Refinance option at market price or not?
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