The Danish mortgage banking system

3rd Workshop on housing finance in transition economies

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Agenda

- The Danish mortgage banking system
  - Introduction to Danish mortgages today
  - History
  - Financial risk regulation - The balance principle
  - Credit regulation
  - Funding technique and investor appeal
- The advantages and benefits of the Danish system

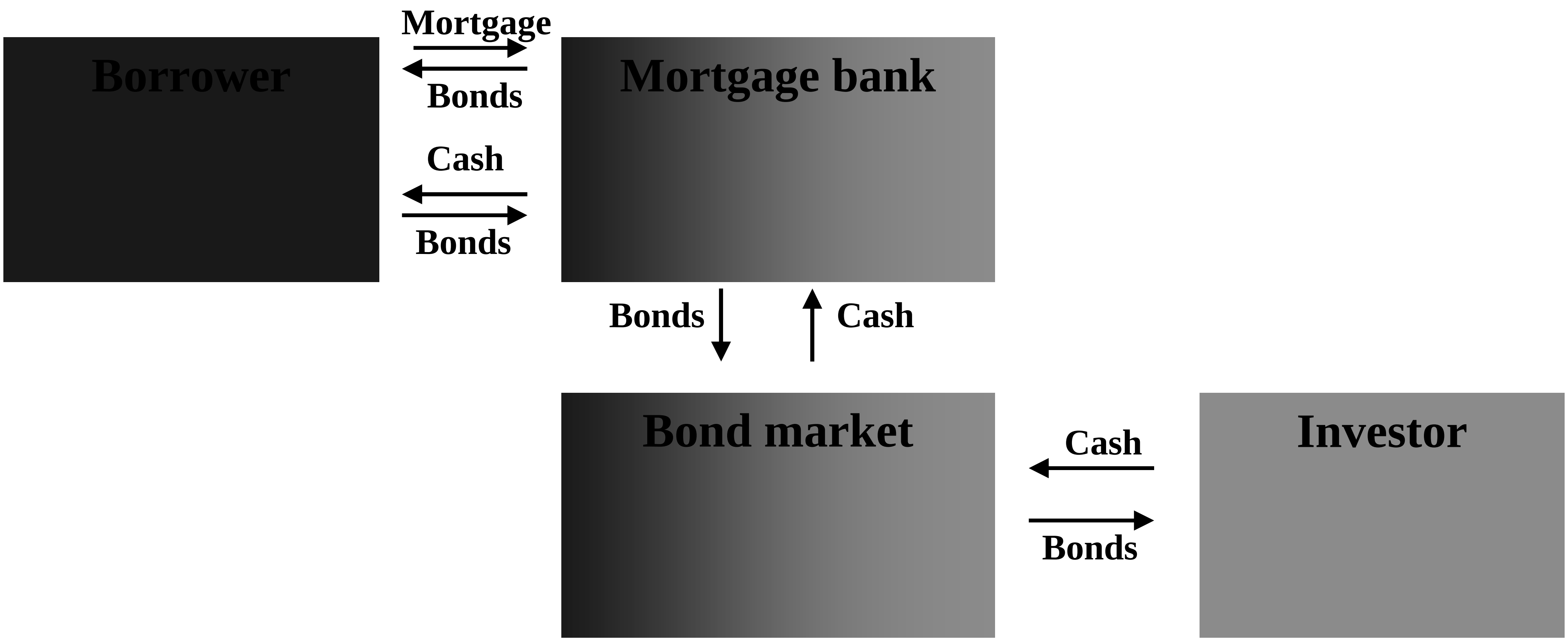
Mortgage banks’ business areas

- Mortgage banks are specialised institutions committed by law to mortgage lending only
  - Auxiliary business (eg banking, insurance or asset management) must be carried out through subsidiaries
  - Mortgage banks are prohibited from issuing guarantees
- All lending must be funded by mortgage bonds and vice versa

Overall principles governing the mortgage credit market

- Loans granted through the issuance of bonds
- Bonds backed by mortgages
- Mortgages registered in the land register
- Maximum LTV (Mortgage Credit Act)
- Balance principle (cash flow on mortgages matches cash flow on bonds)
- Quick and effective legal procedures to handle defaults
- Strong legal framework and strict regulation by the DFSA

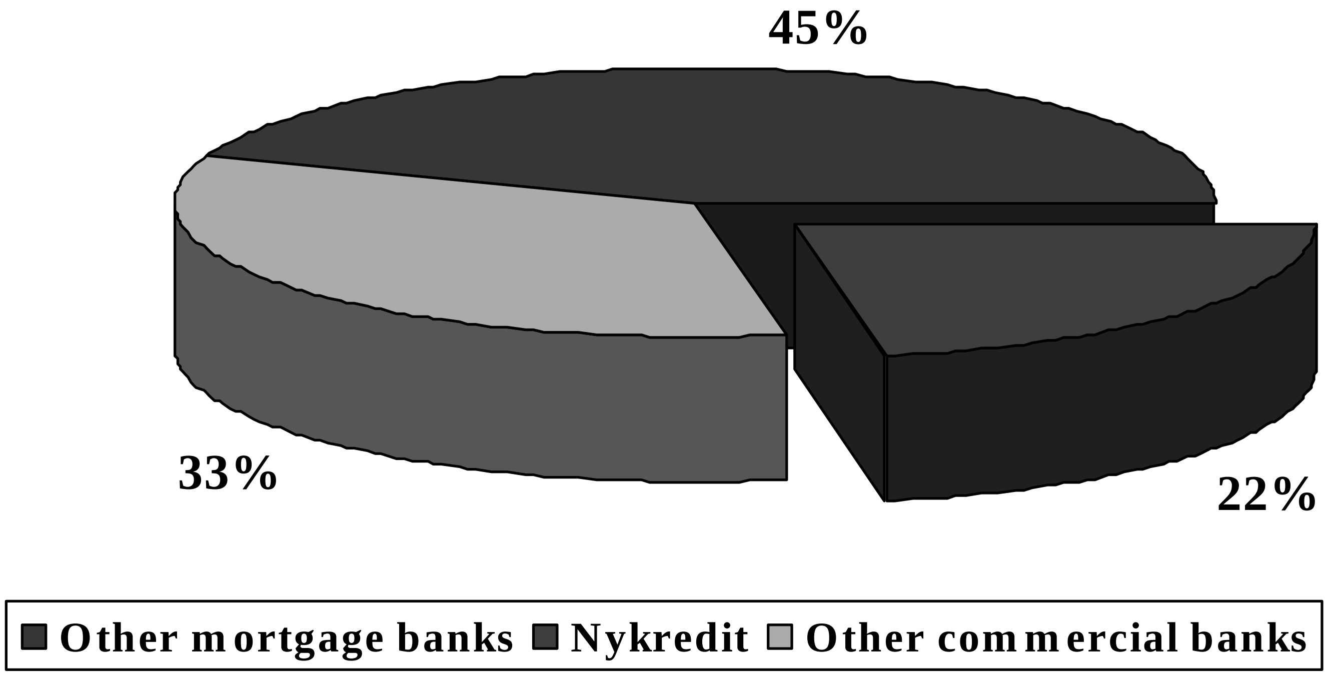
Basic principle of the mortgage system

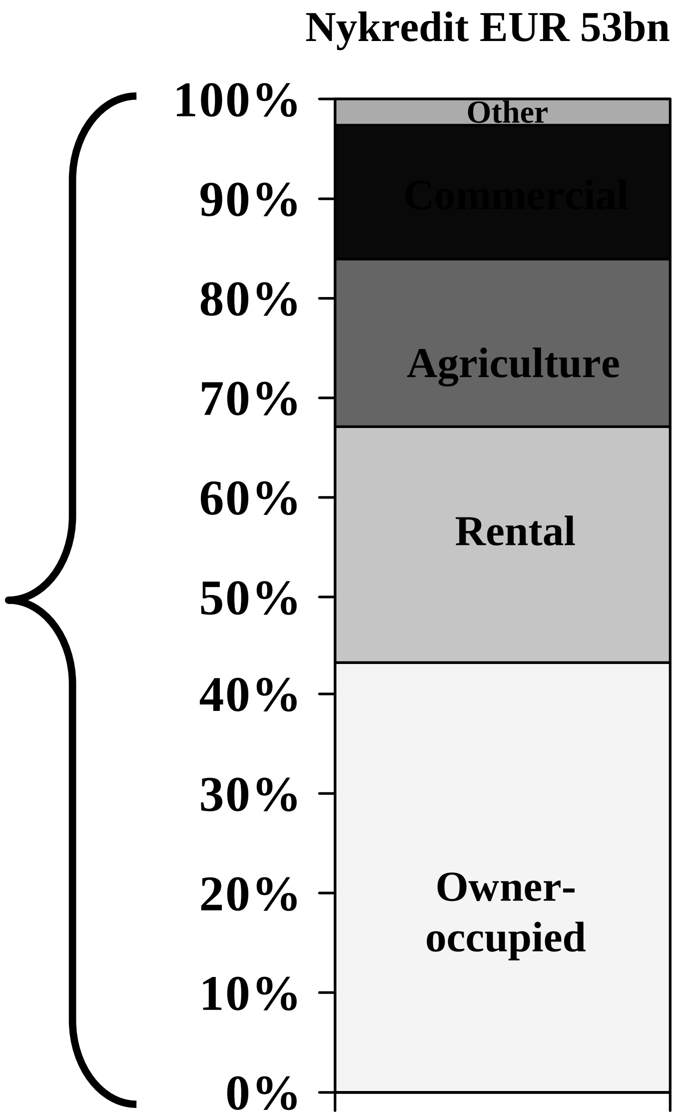


- One-to-one relation between a loan and the bonds issued to fund the loan
- Origination, funding and servicing functions integrated in the mortgage bank

Total domestic lending - Denmark

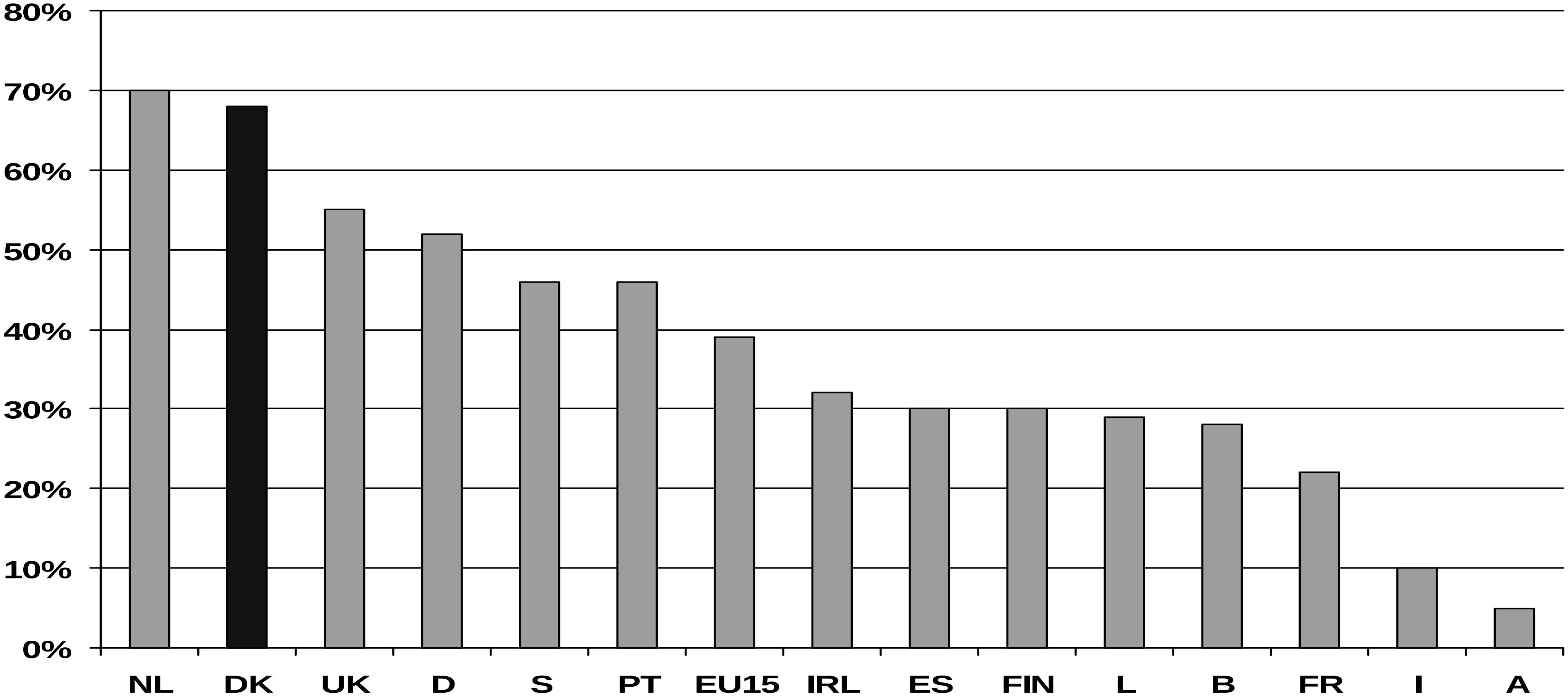
End 2001





Size of the mortgage markets in the EU economies

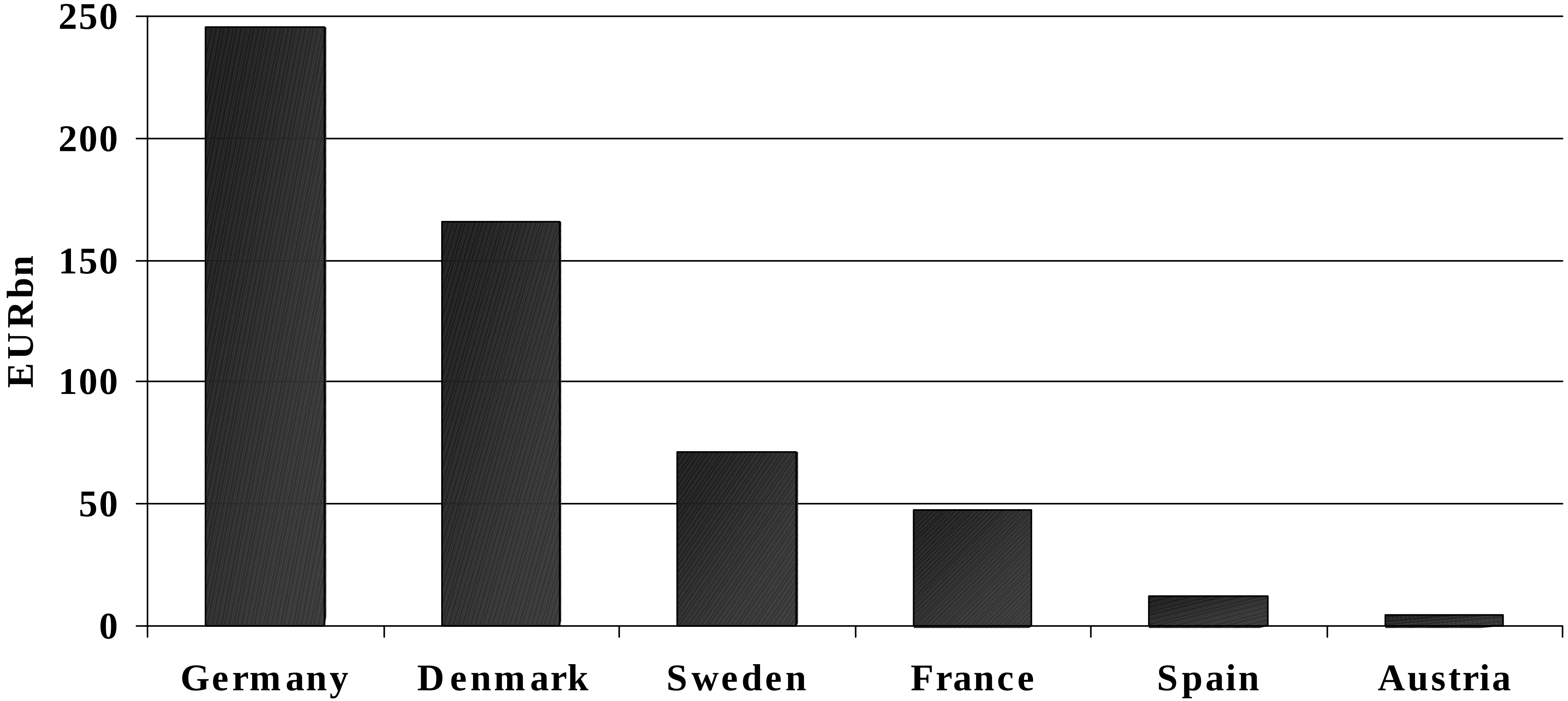
Loans outstanding as a % of GDP, end-2000



Source: European Mortgage Federation

Outstanding mortgage bonds in Europe

End-2000



Source: EMF, Hypostat

The first Danish Mortgage Credit Act of 1850

- Danish constitution from 1848 brought freedom of association
- Led to the creation of a large number of “co-op” organisations
  - Savings banks
  - Mutual insurance companies
  - Mortgage credit associations
- Vast need for financing of farm workers’ land acquisitions from the aristocracy
- No access to credit for “middle and down-market” borrowers
  - Very limited savings and no credit history
  - Event risk (harvest) and enforcement of mortgages

The solution: mortgage credit institutions

- Mortgage credit institutions pool borrowers
  - Diversified event risk for lender/investor
  - Individual mortgages vs tradable mortgage bonds for lenders/investors
- Associations of borrowers
  - Uniform loan terms protect against predatory lending...
  - … and facilitated quick foreclosure proceedings and repossession of mortgaged property in case of default
  - Loans/bonds can only be called by the borrower
- Bondholders protected from risk
  - Capital reserves and maximum LTV of market value
  - Borrowers are jointly and severally liable
  - Balance principle protects against financial risks

The solution: mortgage credit institutions II

- The basic principles have remained almost unchanged for 150 years
  - No longer joint and several liability
  - Balance principle modernised
  - A very robust system that have survived several crises

Crisis	Loan loss
1880s farm crisis	Less than 1%
WW I - Denmark remained neutral	No crisis
Dual currency bonds	Intervention
The Great Depression	Less than 1%
WW II - Denmark occupied by Germany	No crisis
Change in macro economic regime in 1980s and ’90s	Less than 1%

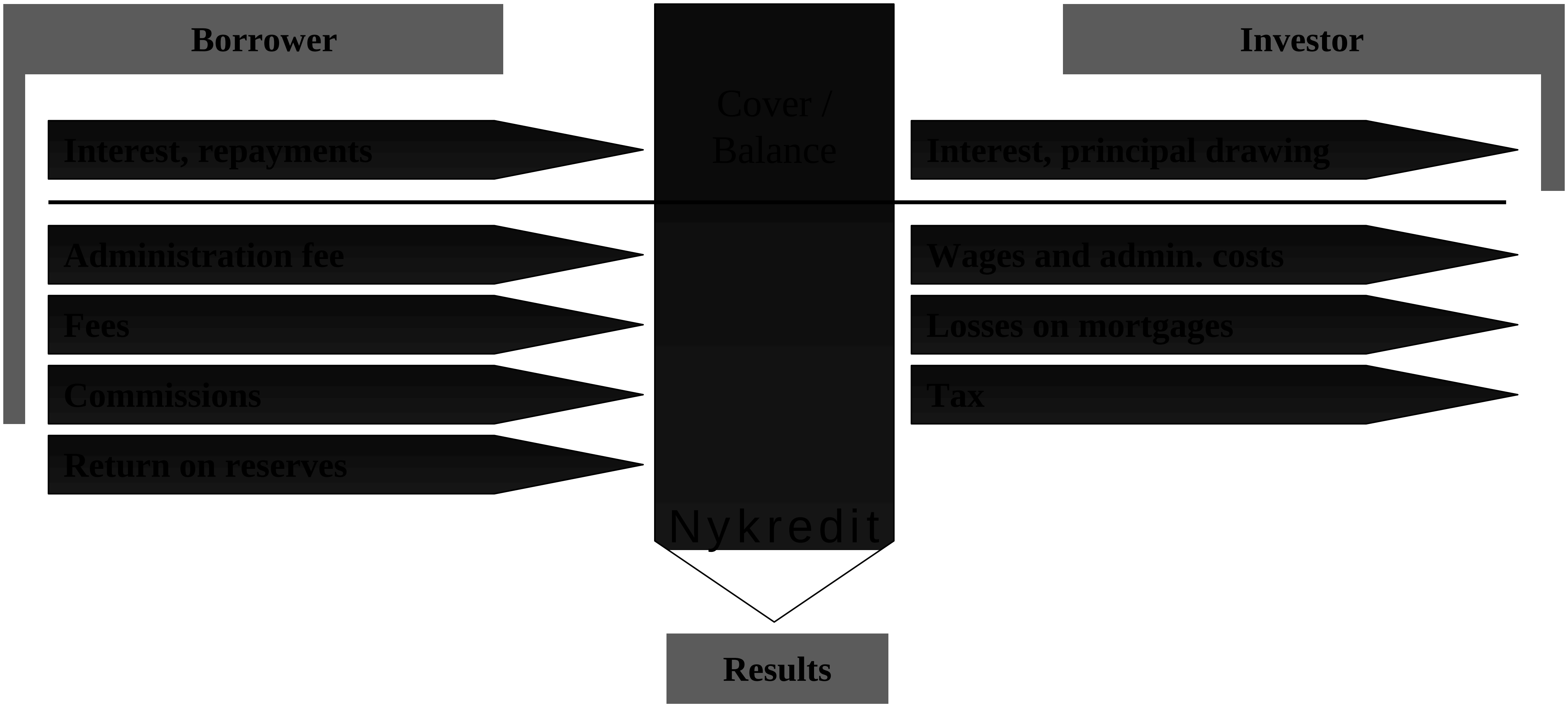
The balance principle I

- “No” currency risk
- “No” interest rate risk
- “No” maturity risk
- “No” repricing and prepayment risks

- Only credit risk

Flow of funds

Cover principle and the balance of payments



The balance principle II

- Currency risk
  - Maximum of 0.1 % (VaR calculation) of capital base
  - In practice, only room for limited pooling of currency transactions
  - No room for structural currency risks
- Interest rate risk
  - Maximum loss in case of interest rate shock of 1 percentage point
  - 1.0 % of capital base measured subject to several stress scenarios including twisting the yield curve
  - No room for structural interest rate risks
- Repricing and prepayment risks
  - Also measured on the basis the interest rate risk rules
  - In practice, only room for a 100 % pass-through system
  - Mortgage customers bear the repricing and prepayment risks

Moody's view on the balance principle

The balance principle (interest rate management). Interest rate risk due to cash flow differences may amount to a maximum of 1% of the capital base. Interest rate risk has to be calculated as a worst-case scenario of six calculations as specified in the executive order issued by the supervisory authority. ***These regulations are the most detailed and restrictive Moody's has seen so far and therefore provide significant support for the Danish mortgage system.***

Moody's Special Comment:
Danish Mortgage Bonds - Highly Secure Financial Instruments

May 2002

Credit risk regulation

- Almost exclusively financing of real property
- Maximum Loan-To-Value spe-cified in the Mortgage Credit Act
- Strict rules governing the valua-tion of properties contained in Act and supervised by the DFSA
- Mortgage banks benefit from very speedy and effective legal procedures regarding forced sales and repossessions

Property categories	*Maximum loan to value*	*Maximum Maturity*
Single family	**80%**	**30 years**
Private rental	**80%**	**30 years**
Subsidised housing	**80% - 93% ***	**30/35 year**
Industrial	**60%**	**(30) 20 yea**
Commercial	**60%**	**(30) 20 yea**
Agriculture	**70%**	**30 years**

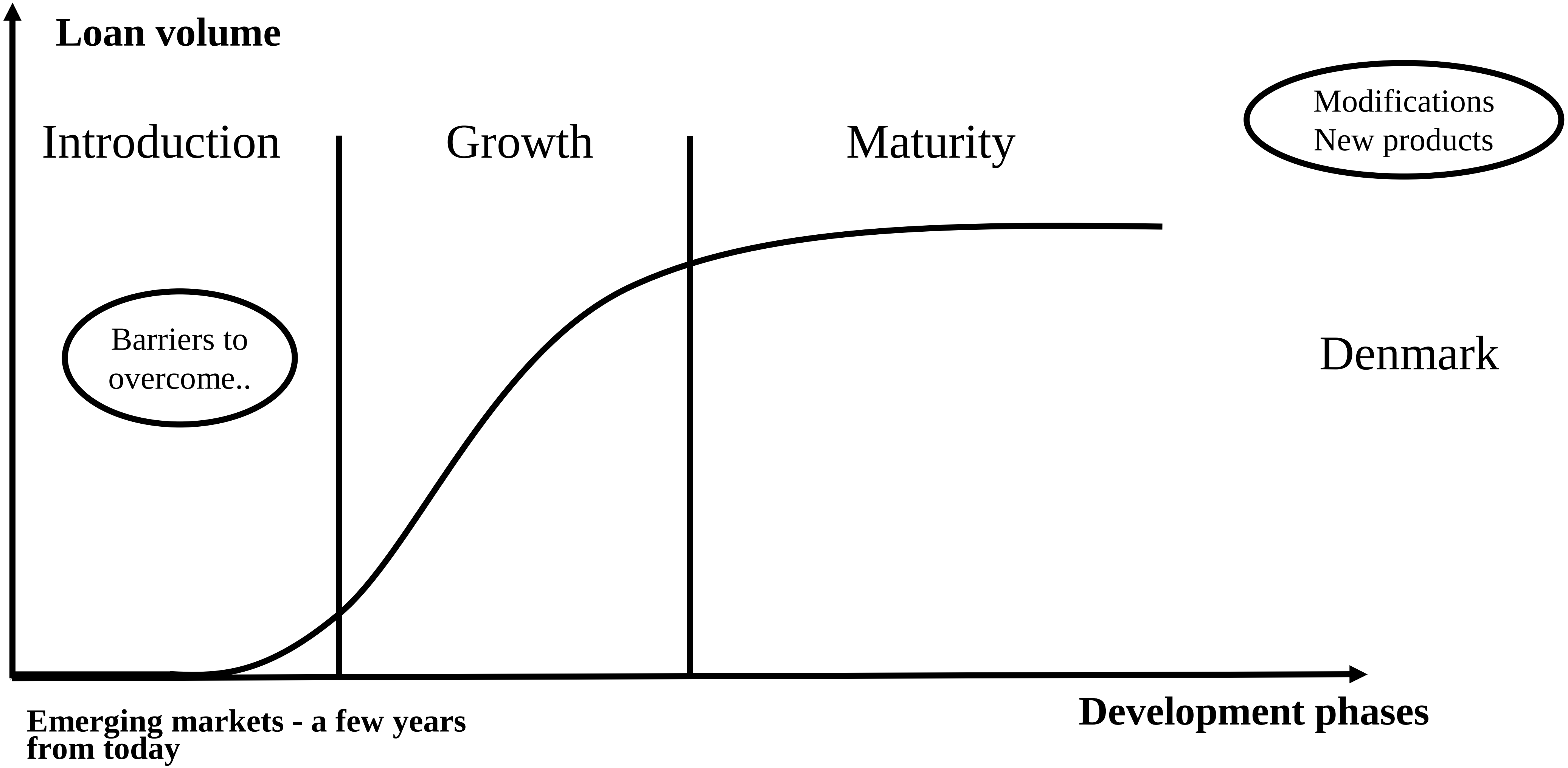
Funding technique

- Tap issue
  - Bonds issuance only to fund immediate needs
  - Cost efficient - no underwriting or syndication
  - No difference between primary and secondary markets
- Frequent issuer
  - Legal fees almost non-existent
  - Daily issuance guarantees liquidity in the market
- No financial mismatches
  - All financial risks are identified and handled (due to legislation)
  - Low cost
  - Low margin
- Issuance under strict public regulation and supervision

Specialised bank versus universal model

- Narrow focus on mortgage lending results in high degree of specialisation:
  - Specialised know-how
  - Experience in lending and credit assessment
  - Professional funding and risk management
  - Cost efficiency
- Reduced risk profile => better bond ratings => lower lending rates
- Direct link between lending and funding

Mortgage bond financing - Emerging markets



Barriers to overcome - lending:

- High interest rate (consumers' willingness to seek financing)
- Administrative barriers (registration of mortgages, execution procedures)
- High transaction costs (property trade and mortgage registration)
- Absence of product standards and uncertainty about competitors' approach
- Customers' product knowledge

Barriers to overcome - funding:

- Mortgage bonds to achieve status as safe investment
- The credibility of the mortgage sector
- Absence of standards for mortgage bond funding
- Obtain permanent issuer status
- Investment possibilities for pension funds and insurance companies

Advantages of Danish mortgage credit system - customers' point of view

- Providers of long-term financing
  - Fixed interest rates based on longer loan terms compared with commercial banks' due to funding match - typically 20-30 years
  - Primary source of financing for all homeowners due to low costs
- The mortgaged part of a house can be up to 80% of LTV, which only leaves 20% to more expensive loans or self financing
- In emerging markets LTV must be at max 60%

Advantages of the Danish mortgage system
from mortgage banks' point of view

- The "in-house principle". All functions are within the same company: funding, credit evaluation, loan processing is in-house instead of services offered from different organisations:
  - 4 Cheap and efficient distribution of loans
  - 4 Control with costs
  - 4 Only credit risks

- The specialised mortgage institutions represent a good basis for co-operation with commercial banks

Advantages of the Danish mortgage system
Investors' point of view

- The balance principle ensures a high bond rating
  - Safe bonds with low costs
  - Bonds behind each loan
  - Mortgage banks serve as risk neutral providers
- Backbone investments for pension funds and credit institutions
- The direct link between borrowers and bonds strengthens liquidity in the market
  - small transaction for the investor
  - great possibilities of restructuring a portfolio of mortgage bonds

Lessons to learn

- The mortgage banking system must be stable and safe
  - Important to concentrate lending around the LTV-rules instead of acting as a universal bank
  - Important to avoid or minimise risks relating to interest rates, currency or maturity mismatches
  - Mortgage bonds must always be repaid
- Achieve low cost funding through the issuance of mortgage bonds ...

... and mortgage financing will become the cheapest financing alternative and a natural first-choice for borrowers

Contact data

- For more information:

- The Nykredit webpage for investors:
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