

Specialized Housing Finance Institutions in Crisis

Unwind or Reform?

International Monetary Fund,
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Models of Specialized Lenders

- Portfolio Lenders/Insurers
 - Building societies, mortgage insurers (Anglo)
 - Mortgage banks, contract saving for housing, (Euro)
 - (de-facto) specialized S&Ls (Anglo, Euro, Latin)
- Two-tier Systems
 - Liquidity facilities/joint issuers & portfolio lenders (U.S. FHLB, Swiss/French/Austrian LFs, Denmark Totalkredit)
 - Secondary markets, via bond insurers (F&F/GNMA) and/or mortgage banks (Germany coop)
- Public Lenders
 - Governmental Housing Banks (Latin, Asia, Africa)
 - Mandatory savings for housing/pension (Latin, Asia)

Why Were They Created

Financial Regulation Reasons

- Liquidity Risk Management
 - Special regulation enabling long-term funding instruments
 - LT deposits with future loan promise (snowball risk regs)
 - LT bonds with high durations (transparency, collateral, special issuer regs)
 - Special circuits to ensure minimum liquidity for housing under
 - high inflation (Latin, some Europe) or in
 - fragmented banking markets (U.S. 1920s).
- Credit Risk Management
 - Fixed-rate lending
 - Increase consumer protection, system stability.
 - High LTV lending
 - separate from universal banking in jurisdiction with small rental markets and as
 - cyclical risk backup ('Anglo-Saxon capital split')
- Agency Risk Management
 - Special bank principle to
 - Protect deposit insurance ('Glass-Steagall for mortgages')
 - Enhance management focus/quality (e.g. management of cover)
 - Credibly enforce special regulations (e.g. Bausparkassen, insurers)

Why Were They Created

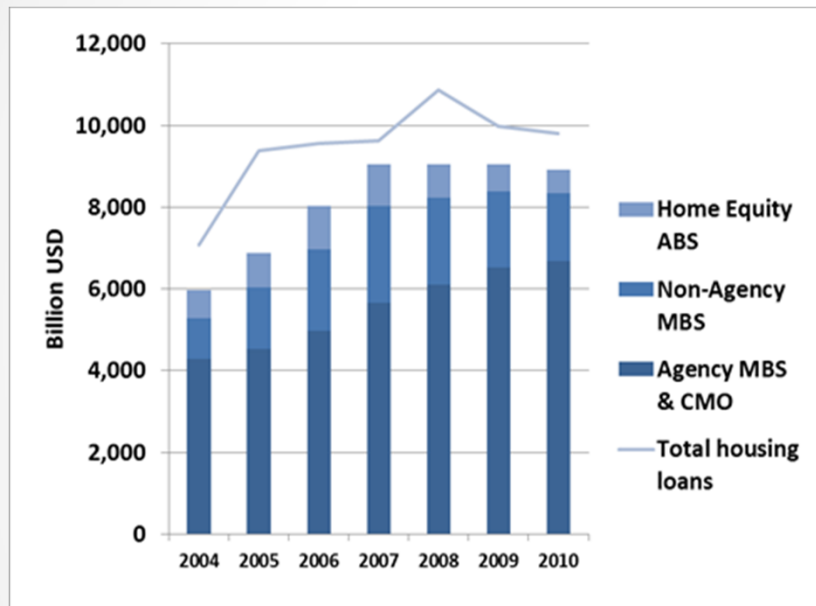
Other Reasons

- Social policy
 - Postwar/catastrophe pump-priming (Silesia 1760s after war, 1995 Copenhagen fire, Germany post WW I – Depfa)
 - Low-income lending / insurance (global)
 - Distribution of public borrowing privilege (US GSE)
- ‘Best practice’ transfer
 - UK, Germany ‘taxed’ S&Ls → building societies as self help (UK 19th century, Germany post WW I); Africa Asia copied UK
 - Latin copied Denmark (Chile), Credit Foncier central m bank
 - US copied Europe
 - Swiss liquidity facilities (1922) → FHLB system
 - mortgage bank charters (NMA, 1934), no private taker → “F” NMA (Fannie Mae)
 - German ‘jumbo Pfandbrief’ of the 1990s → agency bonds
 - Europe copied US (mortgage insurance/MBS)
 - Emerging markets copied both MBS, covered bond instruments (incl. European emerging: Spain, Ireland)

Did Specialists Independently Contribute to the Recent Liquidity Surge?

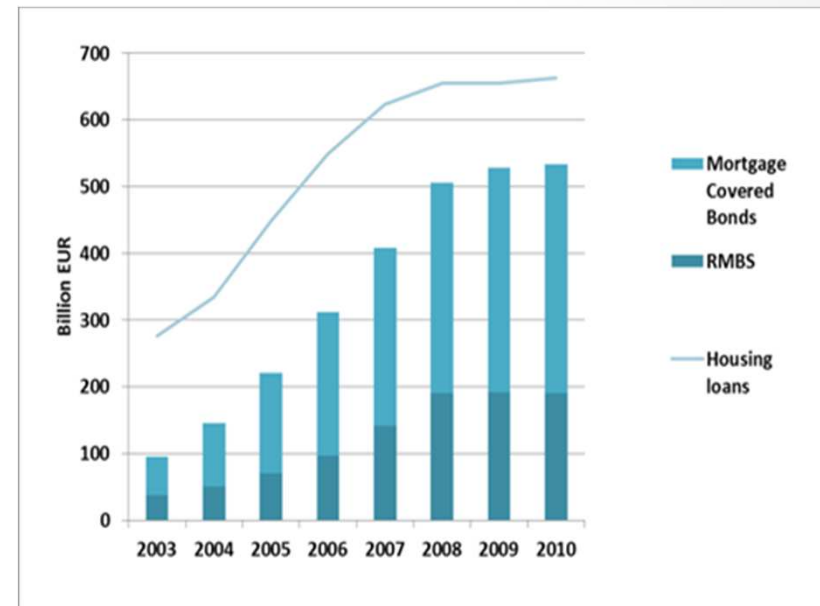
United States

(insurance/structured finance based specialists)



Spain

(universal banks)



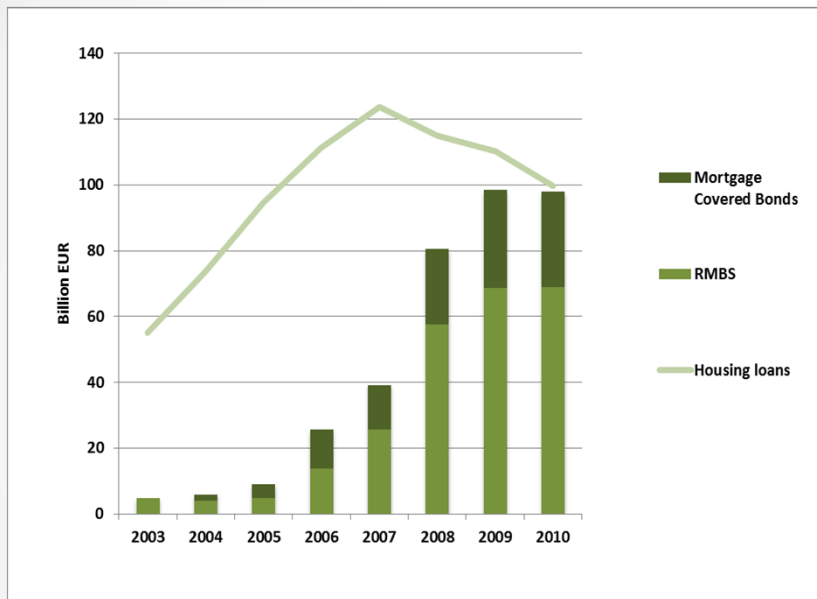
- U.S. system: GSE + MBS, Finco's + structured private label MBS, commercial banks + ABS (+ deposits); explicit subprime.
- Spanish system: commercial banks + MBS + covered bonds (+ deposits); stealth subprime.

Tentative conclusion: both types of systems can attract cross-border flows, create destabilizing lending/pricing conditions.

Specialists & Liquidity, Ctd.

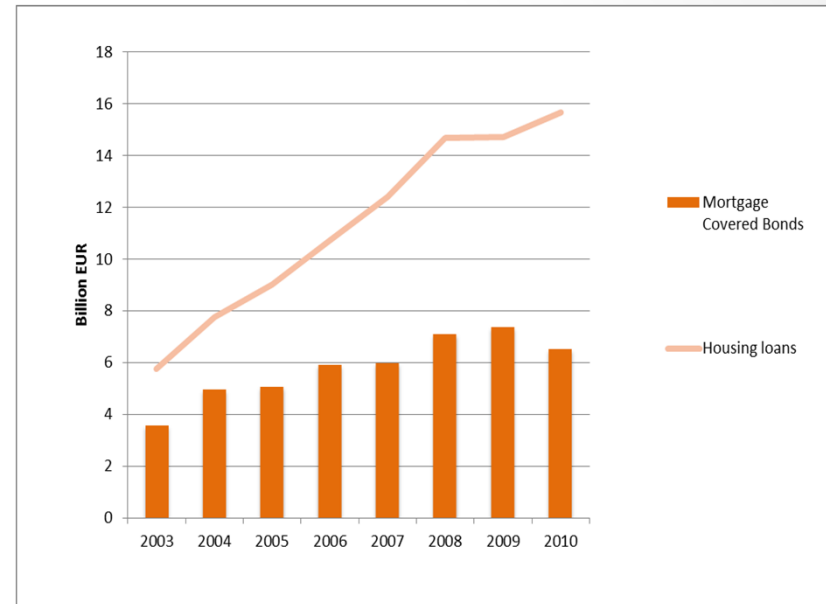
Ireland

(universal banks)



Hungary

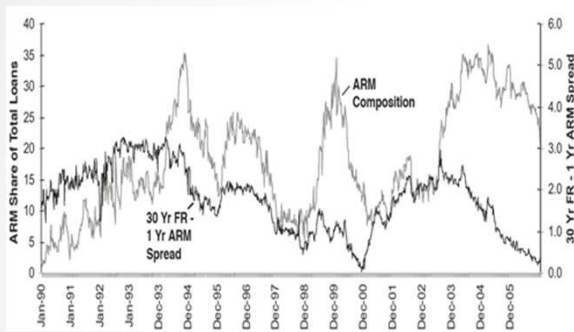
(specialists crowded out by universal banks)



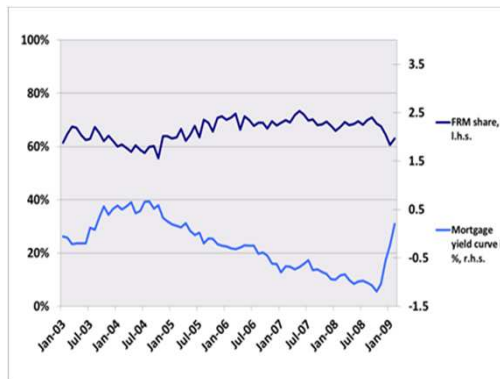
- Ireland: foreign bank entrants bidding up deposit rates + interbank
 - Hungary: foreign bank entrants bidding up deposit rates + interbank + FX swaps
 - Mexico, Colombia mortgage booms 1990s: cross-border bank deposits/loans.
- Tentative conclusion:
- Existence of (any type of) wholesale (cross-border) funding instrument very relevant, Instrument/issuer specialization rather less relevant.

Systems With Specialist History Are More Likely to Offer Fixed-Rates..

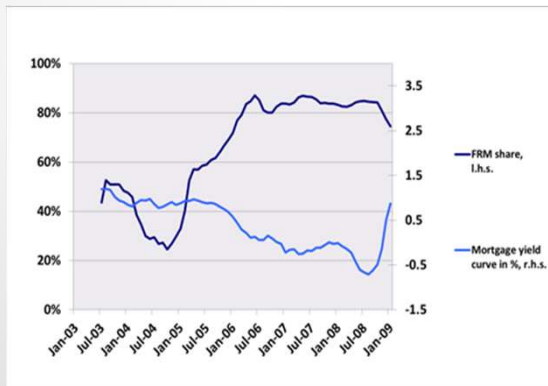
U.S. (specialists)



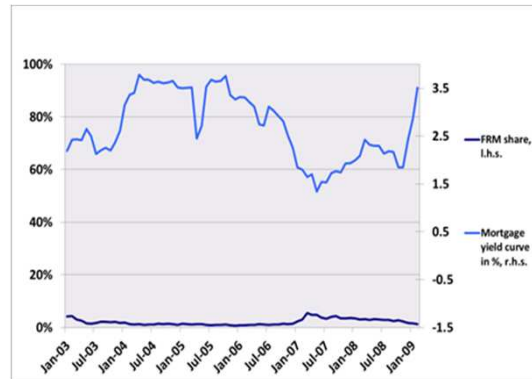
Germany (specialists crowded out)



Belgium (universal banks)



Spain (universal banks)

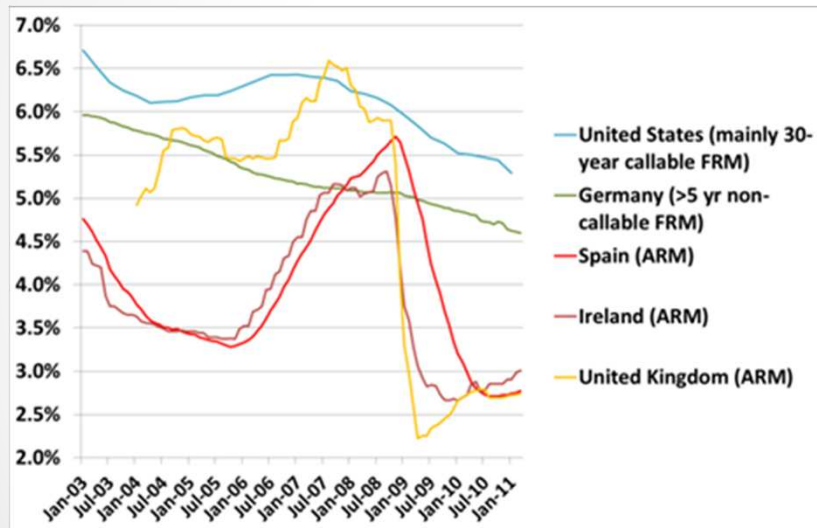


- Europe: Adjustable-rate (ARM) share beyond 70%, ex Germany, France, Belgium, Netherlands.
- Historically Italy, Spain, more recently Denmark, switched from fixed-rate mortgages (FRM) to ARM.
- U.S. ARM with rising trend since 1990, but not dominant.
- British reviewable-rate ARM can be interpreted as hybrid.

Note: European charts compare mortgage yield curve and FRM share (>5 years as cutting point)

..and Force Borrowers to Buy Insurance

Dominant Mortgage Product Rate Trends

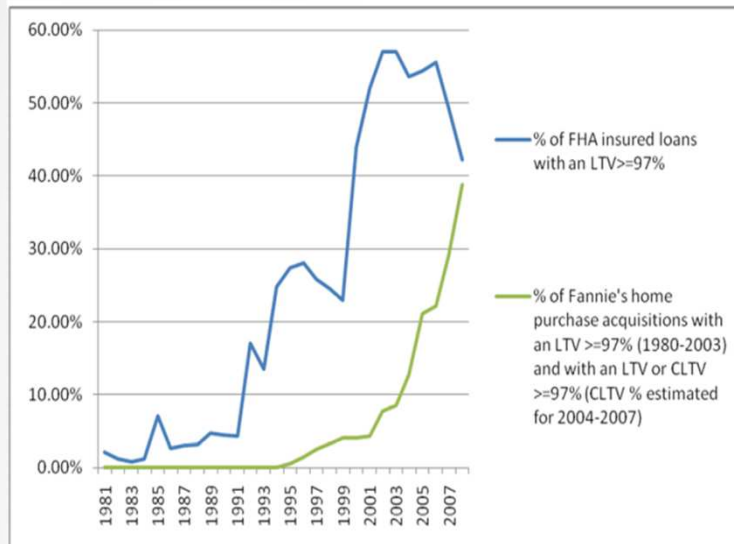


Sources: BLS, ECB, Finpolconsult

- FRM borrowers are long in options/protection.
 - Despite market depth, U.S. mortgage rates are among the highest in DMs. Reason: prepayment option/callable fixed-rate mortgage (FRM).
 - Spanish ARM borrowers pay half the rates of German borrowers (non-callable FRM).
- ARM borrowers are short in options/protection.
 - Depend on central bank bailout.
 - Gaps in regulations led to absence of caps in Europe.
- FRM disadvantage; no auto-bailout.
 - US streamlined refinancing discussion.

Badly Regulated Specialists have Helped Driving Up Leverage

U.S. (mostly) FRM system with Increasing LTVs



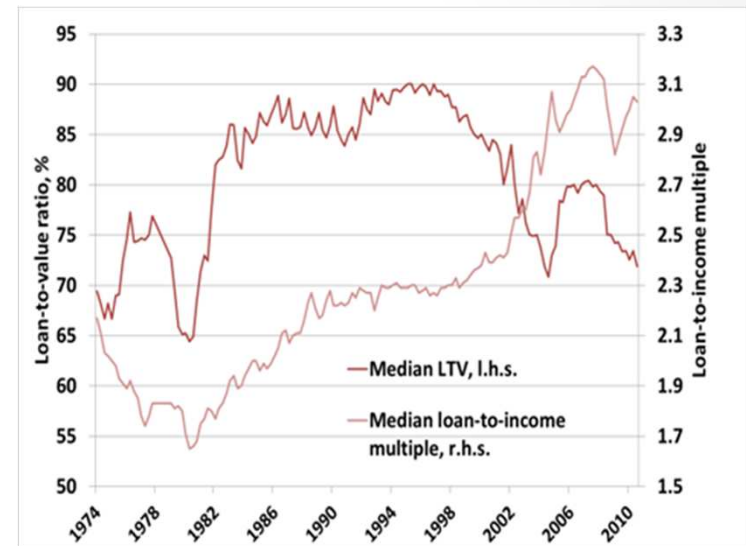
U.S.

- Mortgage loan/bond insurance specialists de-facto unregulated, regulation favors.
- Synthetic insurance via structured finance ('credit multiplier' in CDOs etc.)

Canada

- CMHC as best practice of the Anglo capital split (but tried to change LTVs to 95%)

UK ARM system with Declining LTVs



Britain

- Reduced building society relevance after high LTV boom (1980s), Mortgage loan insurance specialists went bankrupt in the 1990s
- Replaced by portfolio lender self-insurance

Germany:

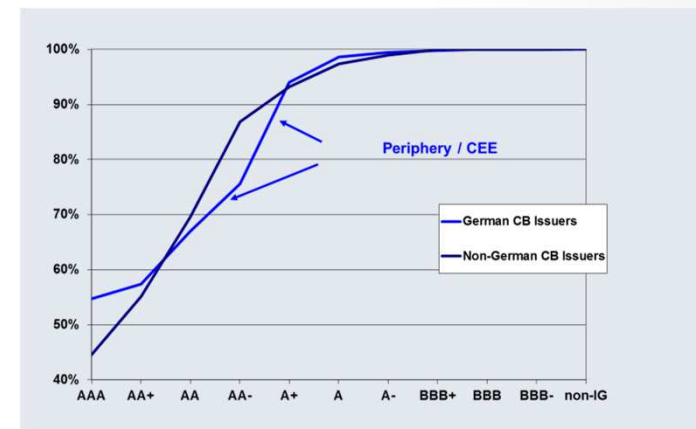
- Bausparkassen generates equity, second mortgages via closed S&L model.

Individual Reasons for Failure

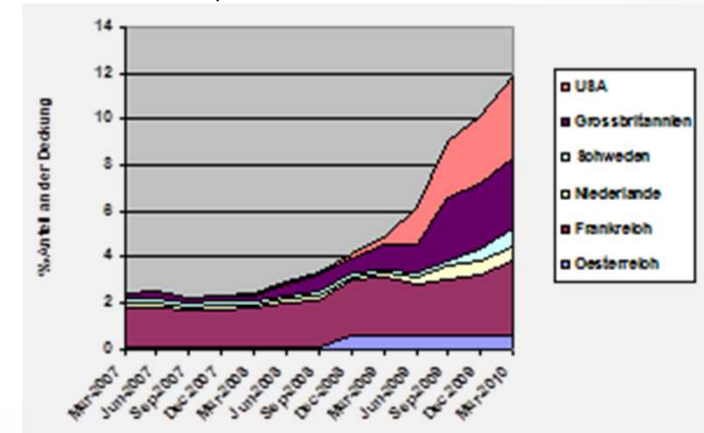
European Mortgage Banks

- Regulation issues
 - Loan LTV > covered bond LTV, mortgage bank depends on issuing subordinated debt
 - Maturity mismatches: roll-risk, no soft bullet / pass-through
 - Public sector pools, de-facto bond insurance without underwriting.
 - Danish mortgage credit institution: loan LTV = bond LTV, balance principle (pass-through), no public sector lending.
- Management issues
 - Excessive issuance activity (Jumbo), hub function
 - Gambling for resurrection, mostly commercial RE
 - Spontaneous globalization
 - Fannie Mae was banned, German banks active

Public Loan / Bond Insurance Wraps by German Pfandbriefbanken Leading to Excess Periphery Lending



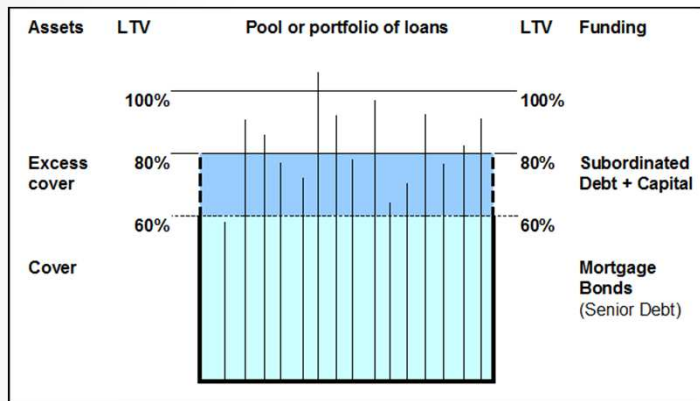
A German Housing Specialist Pfandbriefbank Going International, Commercial



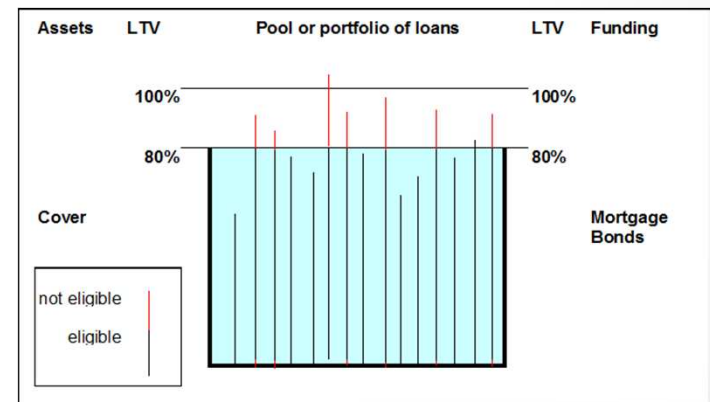
Source: Duebel/Finpolconsult

European Mortgage Banks, ctd

German Mortgage Bank



Danish Mortgage Credit Institution

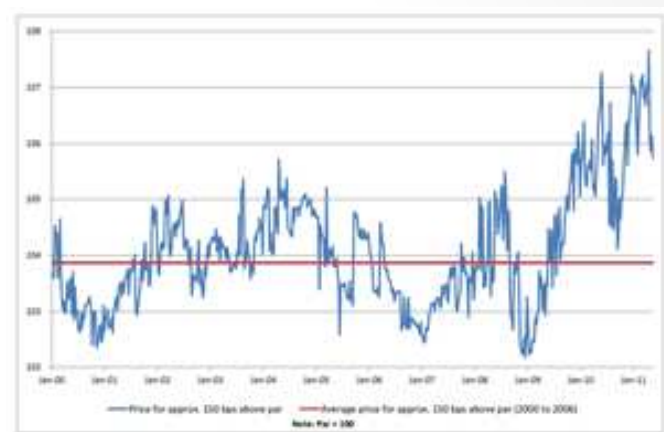


Individual Reasons for Failure

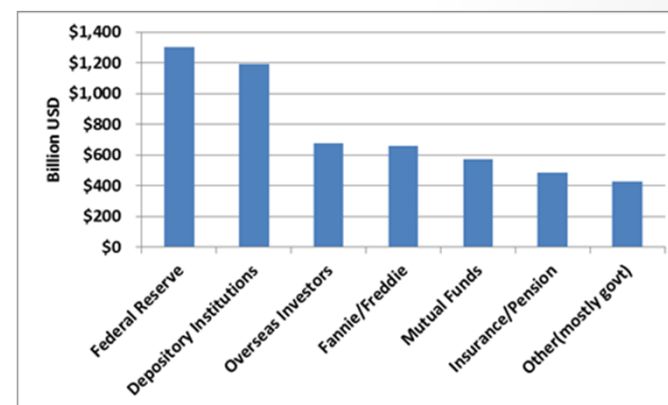
United States Specialists

- Fannie / Freddie
 - Regulatory arbitrage (1/3 in non-prime, low capital requirements)
 - Excessive issuance activity (agency bonds)
 - During crisis, F&F were not allowed to take interest rate risk → profits were made in banks/Fed
- Mortgage insurers
 - Initially no fails, as F&F needed for >80% LTV; servicer lawsuits
 - Currently put into insolvency by GSE.
 - FHA with continued regulatory forbearance.
- Finance companies
 - ‘Designed to fail’ as temporary lenders with little capital
 - Public decisions contributed:
 - U.S. (no Fed window, e.g. CFC)
 - Mexico (public bailout)

Pricing history of Fannie Mae – guaranteed 30-year MBS 2000 – 2011



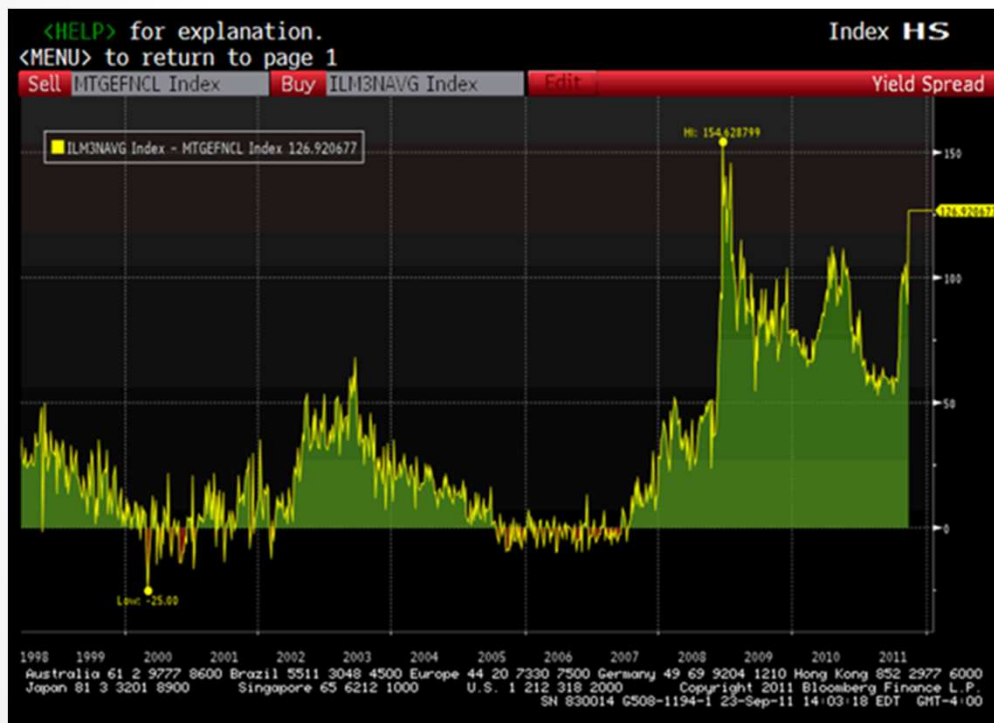
Ownership of Fannie / Freddie – guaranteed MBS



Sources: Remy, Lucas and Moore (2011), based on Bloomberg data. DeRitis and Zandi (2011)

Could the Departure of US Specialists Permanently Drive up Loan Cost?

U.S. Primary vs. Secondary Market Spread



Note Spread between mortgage loans issued by banks eligible for and mortgage-backed securities issued by Fannie Mae and Freddie Mac.

Until 2007 system of specialists, 'charter competition'

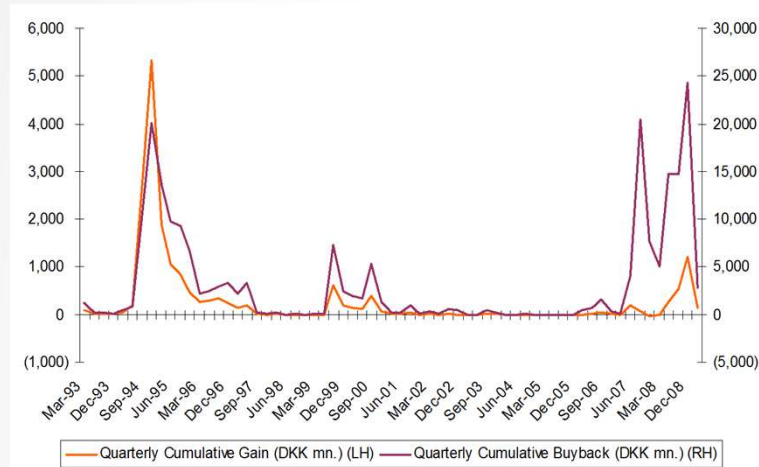
2007 bis:
TBTF Oligopoly w
upfront profit of
2-4%
GSE pricing policy
adds to cost, reduces
refinancings
(see last slide)

Could an organized
broker market help
reviving competition?

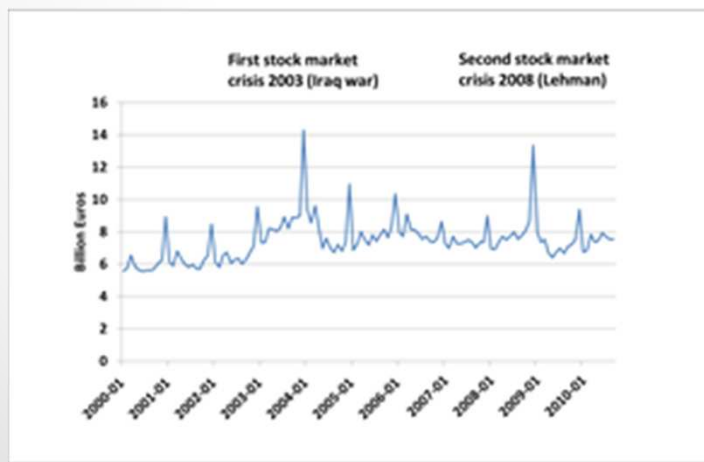
Impact of GSE exit on
products?

Resilient Specialist Models

Danish Mortgage Bonds – Consumer Buybacks During Crises (Rate Increases)



German Contract Savings for Housing – New Deposits and Capital Market Crises



Sources: Central banks, Boyce, Duebel/Finpolconsult.

- Liquidity Facilities / Joint Issuers
 - French CRH, Swiss Pfandbriefzentralen replaced individual bank covered bond issuance in the fall of 2008
 - Caveat: Spanish multi-issuer entities exited, also French 3 CIF.
- Danish MCIs
 - Issues hybrid covered bond/MBS
 - FRM issued under balance principle, i.e. lender is long in liquidity, no interest rate risk
 - Buyback option reduces LTV risk
 - Lender can adjust credit risk premium ex-post
 - Caveat: issues with ARM product.
- Bausparkassen / Contract Savings
 - Winner of flight to safety
 - In CEE stabilizes via local currency credit (e.g. Czech, now Hungary)
 - No credit risk differentiation for borrowers, due to equity accumulation → no credit crunch
 - Liquidity management via waiting periods
 - Caveat: subsidy issues.

Selected Regulation Issues

Reg Capital Arbitrage in Two-Tier Systems

- General treatment of capital market intermediaries / agency risk:
 - Does intermediation by a wholesale intermediary reduce or increase system credit risk?
 - U.S. capital and large exposure rules contributed to creation of TBTF GSE duopoly/credit risk centralization.
- Some Solvency/Basel issues:
 - Capital charges for CB under Basel III far lower than for private label securitization.
 - Duration charge for CB under Solvency without duration charge for assets.

Capital Requirements with U.S. GSE vs Covered Bond Issuer as Intermediaries

	Bank Intermed	GSE Intermed	Bank Investor	System
Regulatory capital required in cents/US\$				
UNITED STATES				
Bank swapping portfolio into GSE MBS		0.45	1.60	2.05
Bank keeping loan pool on balance, Basel I	4.00			4.00
.. as above, Basel II	3.20			3.20
EUROPE				
Bank issuing a covered bond, Basel II	3.20		1.60	4.80
.. As above, EU UCITS-compliant	3.20		0.80	4.00

Note: Basel II - standardized approach

Source: Lea, Duebel/Finpolconsult.

Selected Regulation Issues

Covered Bonds, Special vs. Universal Bank

Balance Sheet of a Universal Bank Issuing Covered Bonds

Covered Bond Issuance
Universal bank balance sheet

Million EUR	Assets	Liabilities	Insolvency rank class
100	MORTGAGES cover pool	COVERED BONDS	<i>Segregable</i>
200			
300		Gov ins-Deposits	
400		Unsecured etc	Senior unsecured (overcoll)
500	DERIVATIVES & margin	DERIVATIVES**	<i>Segregable (if registered)</i>
600	DERIVATIVES	DERIVATIVES	Super senior
700	(margin - non-cover)	(margin - both cover/non-cover)	
800	MORTGAGES	Government-insured deposits	Senior unsecured
900	(not eligible, other)	Uninsured Deposits	See above
1,000	OTHER ASSETS	Unsecured Bank Bonds	
1,100		Interbank loans	
1,200		Subordinated bank bonds	Subordinated
1,300		Hybrid bank bonds	
1,400		Capital	Residual
1,500			
1,600			
1,700			

**cover cannot post margin, only receive margin

Source: Duebel/Finpolconsult.

- A covered bond is a sleeping special bank (good bank)
 - Permanent asset substitution via cover monitor
 - Segregable in insolvency, spin-off under special administrator
 - Some laws flawed, e.g. Spain.
- This creates conflicts in bank resolution with deposit insurance
 - Usually large overcollateralization, non-acceleration principle
 - Two good banks – ‘bridge bank’ / covered bond – on their own make little operational sense.
- Special banks avoid issues, but will require liquidity backups.

Selected Regulation Issues

Loan-to-Deposit vs. Net Stable Funding Ratio

- LDR limits are potentially toxic in the context of mortgages
 - Increased solvency risk
 - encourages lender mismatch,
 - discourages use of bonds.
 - Encourages ARM product
 - increases pass-through of monetary policy signals on credit, prices.
- A funding stability concept is preferable,
 - Capital account policies as a substitute for macro LDR..
- The NSFR needs refinement for mortgages
 - 'Stable' vs. truly long-term deposits/bonds
 - NSFR cuts duration gap only minimally, esp. for non-callable FRM
 - Prepayment models required
 - often consumer protection regulation complicates
 - Foreign currency version needed (e.g. Hungary)
- Liquidity risk insurance should receive regulatory preference
 - Pass-throughs, extendable (soft-bullet) and callable bonds.
 - Derivatives problematic in some contexts (e.g. covered bonds)

Summary: Reform or Unwind?

Do we need specialized housing finance from a stability perspective? Probably yes.

- Same debate as Volcker vs. Glass-Steagall for investment banking/trading: should long-term and short-term banking be mixed?
- Transparency vs. diversification benefits; silo approach may bring diversification, mortgage lenders as special capital centers.
- Role of universal banks in system real estate mkt collapse is rarely debated; see empirical evidence presented.

Do we need specialized housing finance from a social perspective? Perhaps.

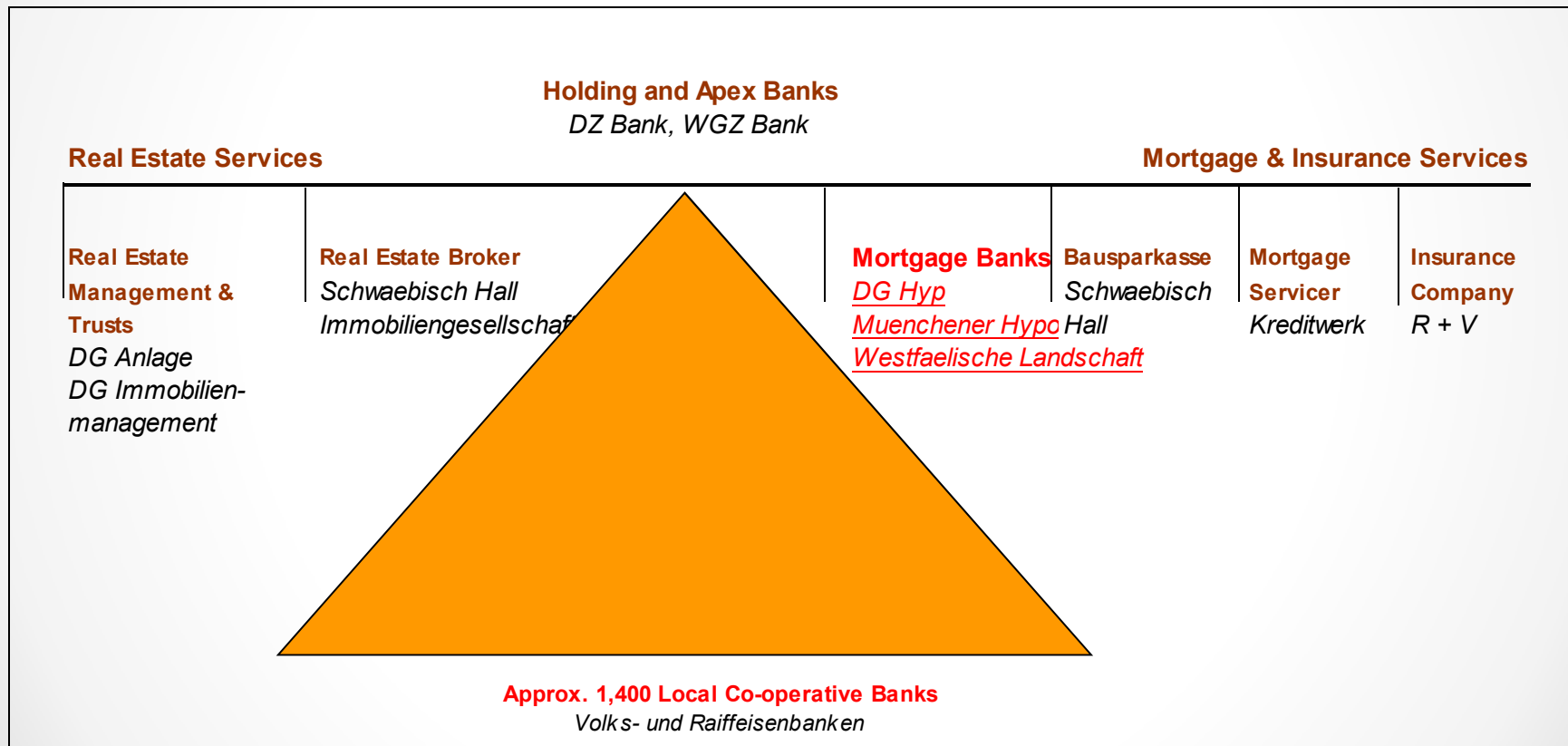
- Permitting ARMs via universal banks is a major pump-priming / access to credit instrument. Specialists could promote FRM.
- Access to credit double-edged sword; alternatives (rental, savings)

How can we stabilize specialized housing finance when many business models just failed?

•

Silo Design with Special Banks

A 'Private' Two-Tier System



Source: Duebel/Finpolconsult.

Stabilization Policy Menu

- 'Volcker Rule' for borrowers
 - o Borrowers matched, adequately capitalized, sound collateral valuation
- 'Volcker Rule' for portfolio lenders
 - o Intermediaries matched, adequately capitalized, sound collateral valuation
 - go beyond NSFR to fuller maturity matching, discourage lenders from cross-subsidizing credit with profit from maturity mismatch
- Accept recurrence of failure in cyclical real estate mkts
 - o Specialists are 'Sollbruchstelle', an element in a mechanical system that is supposed to break when pressure becomes too large.
 - Insurance regulation approach for backup capital (unearned premium reserves, preempt buyouts, alternative risk transfer)
 - Backup liquidity mechanisms
 - o Review specialist models that have amplified leverage & cyclicity (esp high LTV insurance), rather promote equity generation.
- Managing charter competition
 - o Review of bank insolvency, deposit insurance, covered bond architecture
 - o Reduce TBTF subsidies
 - o Reduce other housing finance subsidies, e.g. bond insurance, capital arbitrage

US Mortgage Pricing 101

Author: Alan Boyce

as of 5/31/12						
BORROWER TYPE	Mythical Zero Point Borrower	PRIME		NEAR-PRIME		
		Points	Zero Points	Over FICO 700	Under FICO 700	
FICO Score	700	750	750	739	699	
Combined Loan-to-Value Ratio, %	80	60	60	75.01	75.01	
MORTGAGE BANKER PROFIT CALCULATION, \$						Cash flows to / from
Adverse Market Delivery Charge	0.00	0.00	0.00	0.25	0.25	GSE
Loan-Level Price Adjustment	0.00	0.00	0.00	0.50	1.75	GSE
Loan Disbursement	100.00	100.00	100.00	100.00	100.00	Borrower
Origination Cost	1.00	1.50	1.50	1.50	1.50	Mortgage banker
Cash Outflow	101.00	101.50	101.50	102.25	103.50	
Mortgage servicing right multiple	7.08	3.51	4.00	2.36	2.18	
Mortgage servicing strip*	0.35	0.48	0.23	0.35	0.60	
Mortgage Servicing Right Value	2.48	1.67	0.90	0.83	1.31	Servicer
Points/Credits	0.000	1.375	0.000	-1.000	-1.250	Borrower
FNMA 30 yr Bond	2.50	3.00	3.50	4.00	4.50	
Bond Price	99.02	102.21	104.75	106.22	107.00	Investor
Cash Inflow	101.49	105.25	105.65	106.04	107.06	
Profit	0.49	3.75	4.15	3.79	3.56	Mortgage banker
ANALYTICS						Profit Center
Mortg Servicing Right Value / Profit	5.01	0.44	0.22	0.22	0.37	Mortgage banker
Net Cash for Mortgage Banker, \$	-1.98	2.08	3.25	2.97	2.25	Mortgage banker
Adjusted Profit Margin**, \$	0.49	4.42	4.59	4.41	4.12	Mortgage banker
Actual Mortgage Rate, %	3.000	3.625	3.875	4.500	5.250	Borrower
Gross Premium Revenue, \$	0.15	0.15	0.15	0.90	2.15	GSE

*Note minus bond coupon minus GSE guarantee fee

**Adjusted for hidden profits from undermarking for accounting purposes

- U.S. mortgage market is a “premium origination” model. This process is used to get the bond market to pay most or all of upfront costs & profit margin
- Borrowers 2 and 3 have no economic incentive to refinance, so those loans are not funded.
- Assumes 12.5bp Guaranty Fee, for large banks, smaller originators pay 15bp
- MSR is capitalized difference between note rate and bond coupon, less Gfee
- Minimum retained MSR of 25bp without buyup
- MSR's are being capitalized significantly below where the IO market values the cash flows due to Basle III limitations on DTAs
- Historically, MSR's are valued a full multiple above equivalent IO strips because of ancillary income from servicing.
- Today, low valuations (70% of Agency IO's) placed on MSR's hide ½ point of profit margin.
- TBA/MSR multiple pricing as of 6/22/11 for August delivery:
 - FN 3.5 @ 96.64 /IOS is 7.16x
 - FN 4.0 @ 101.61/ IOS is 6.57x
 - FN 4.5 @ 103.73/ IOS is 5.67x
 - FN 5.0 @ 106.30/ IOS is 5.21x
 - FN 5.5 @ 108.06/ IOS is 3.47x