
The Danish mortgage system is the Best

January 13th, 2011

Alan L. Boyce

Danish System: High Credit Quality

- Second largest mortgage bond market in the world after the USA
- AAA ratings from Moodys, S&P, there has never been a default
- Danish MCI's have implicit government backing through strong regulation by
 - Mortgage Credit Act
 - Danish Financial Supervisory Authority / Finanstilsynet
 - Danmarks Nationalbank
 - Denmark's title registration system
- Principle of balance keeps MCI's honest
- Late 80's housing collapse showed system's strengths
- Compares favorably to other European models
 - See Moody's May 2002 report
 - See MOW's September 2003 report
 - See BIS March 2004 Quarterly Review
- Danish system has been copied by Iceland, Norway and Mexico
- Absalon Project is now working with Ireland, UK, Netherlands, Ghana, Nigeria, Kenya, South Africa, UAE and Malaysia

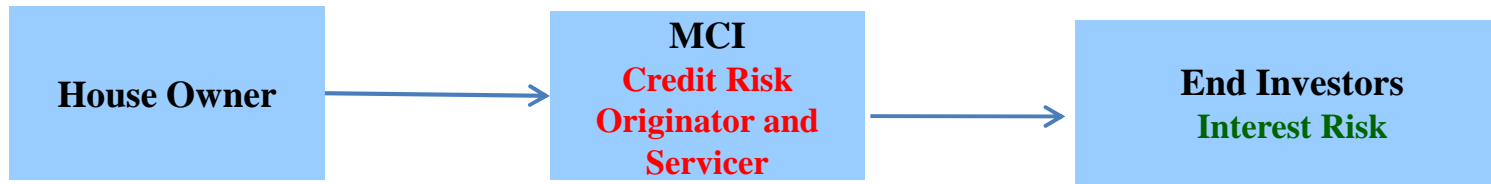
The “Best” Model for Mortgage Finance

- Basle II risk capital guidelines
 - Article 22.4 of UCITS directive
 - Lowest risk capital weighting
 - Note: Basle III does not differentiate between successful and failed mortgage bond systems
- Central Bank “repo-ability” provides liquidity(see Fed and ECB)
- Consumers and bondholders will choose the winner
- Standardized and transparent loans and bonds = the best
- System should have macro economic stabilizers built in
- Extra Balance Sheets are unnecessary and a potential source of risk
- Deposit based systems are fraught with risks in volatile rate scenarios
- Inflexible Bond based systems do not scale up
- Other covered bond models are very inefficient structures (extra OC)

US vs Danish MBS: Differences

- Transparency of loans to bonds and information search costs
- Regulatory and Ratings Issues
- Credit, Delinquency and Foreclosure Issues
- Externalities through linkage mechanism to Capital Markets
- Premium vs. Discount Origination
- Socialization of Credit Risk or Credit Availability
- Conflict of interest between bond holders and issuers/insurers
- Mortgage insurance through balance sheet or monoline providers
- Vertical integration or atomization of skills (separate origination, financing, securitization, trading, investing, servicing, master servicing and special servicing functions)
- Standardized solution for all secured lending (owner occupied housing, affordable multifamily, commercial, agricultural, renewable energy)

How the system could be fixed by emulating Denmark

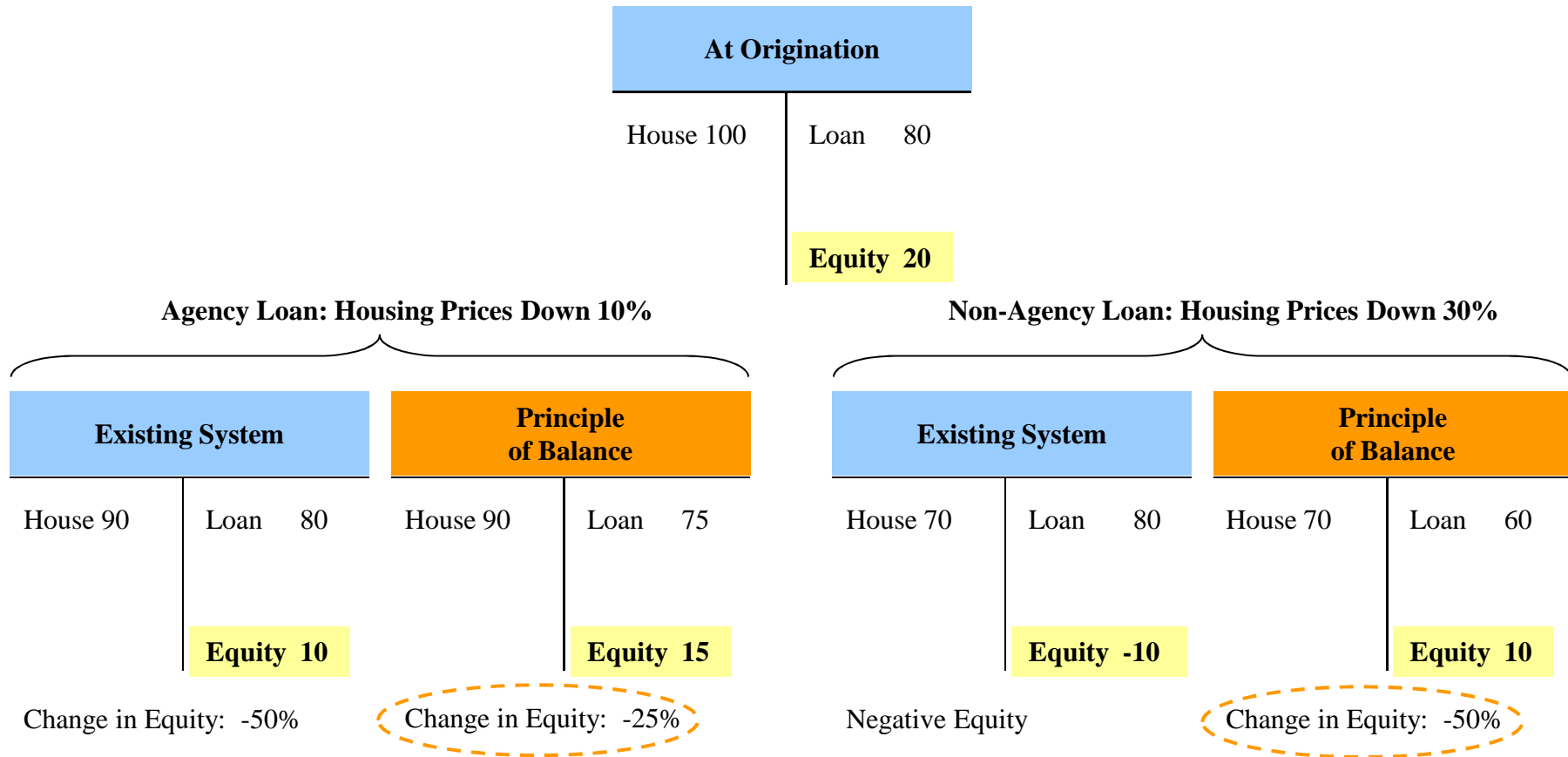


1. **Mortgage Credit Institutions (MCIs)** are required to retain credit risk and service the loans
 - Bond investors only retain interest risk rather than credit and interest risk
 - MCIs can participate on equal terms, subject to rigorous regulatory requirements
 - MCIs act as “liability advisors” 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
2. Mortgage is funded by the issuance of standardized bonds
 - Bond market deals with familiar and hedgeable risks: level of rates, slope and curvature of yield curve, interest rate volatility, financing and counterparty selection
3. Asymmetric nature of most mortgage systems is replaced by the Danish Principle of Balance

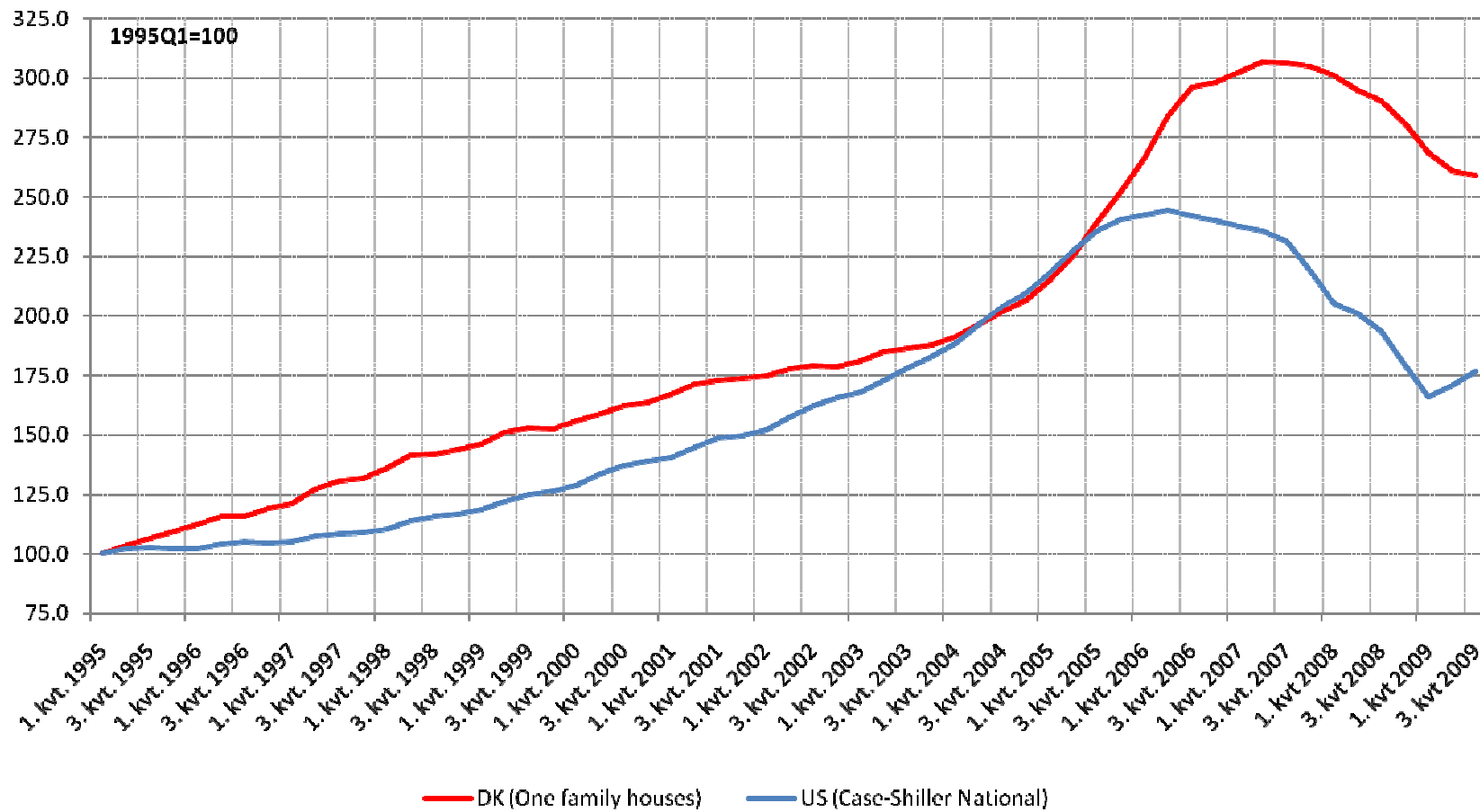
Principle of Balance: Borrowers can retire their mortgages by paying the lower of par or by purchasing the bond at the current market price

Choice of securitization model can reduce negative equity

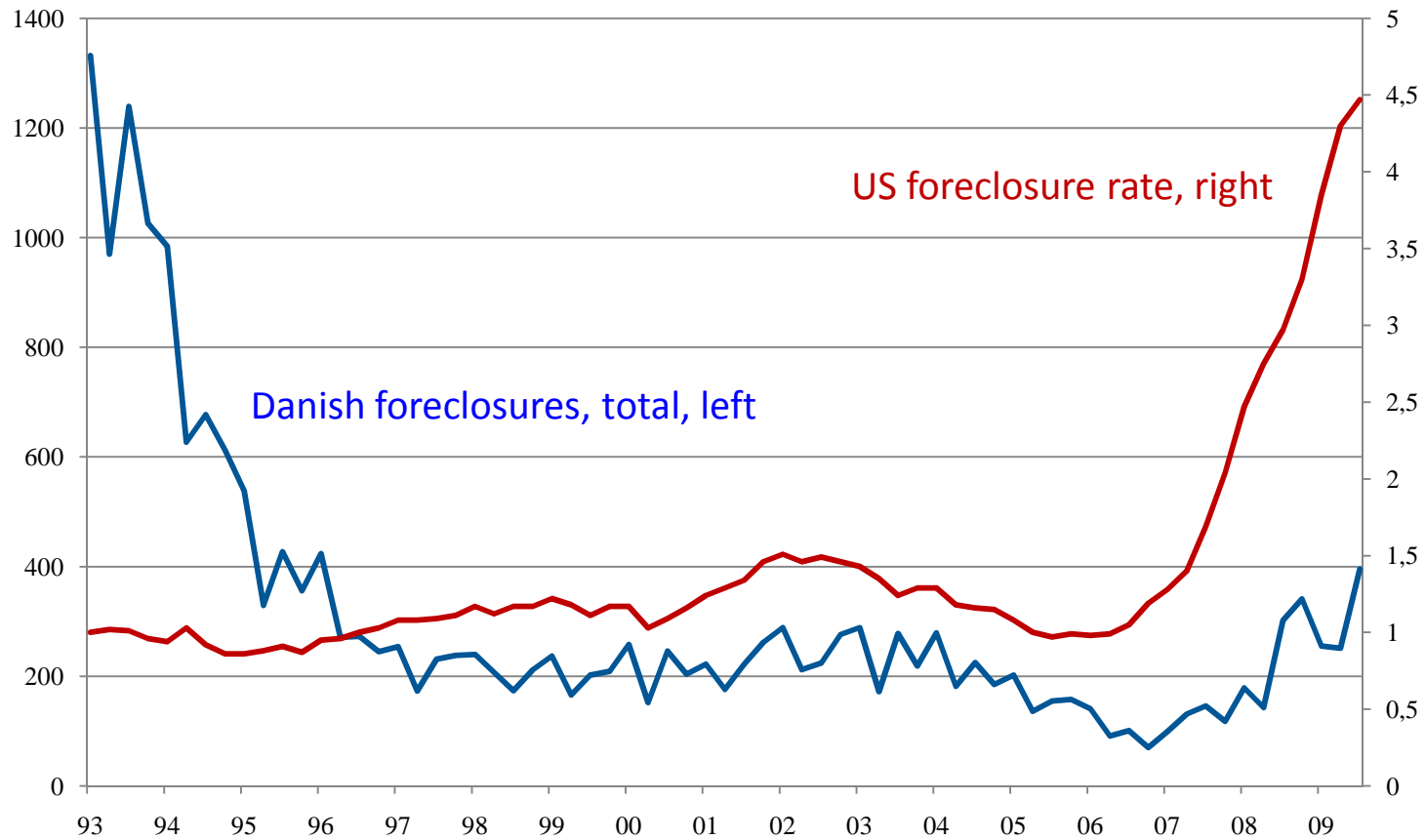
- Typical homeowner scenario:
 - Borrower pays \$100,000 for a house with an 80% LTV, loan originated at par
 - Agency Loan, housing prices have fallen 10% and FN 5% mortgage bond prices have fallen to 94
 - Non-Agency Loan, housing prices have fallen 30% and mortgage bond prices have fallen to 75



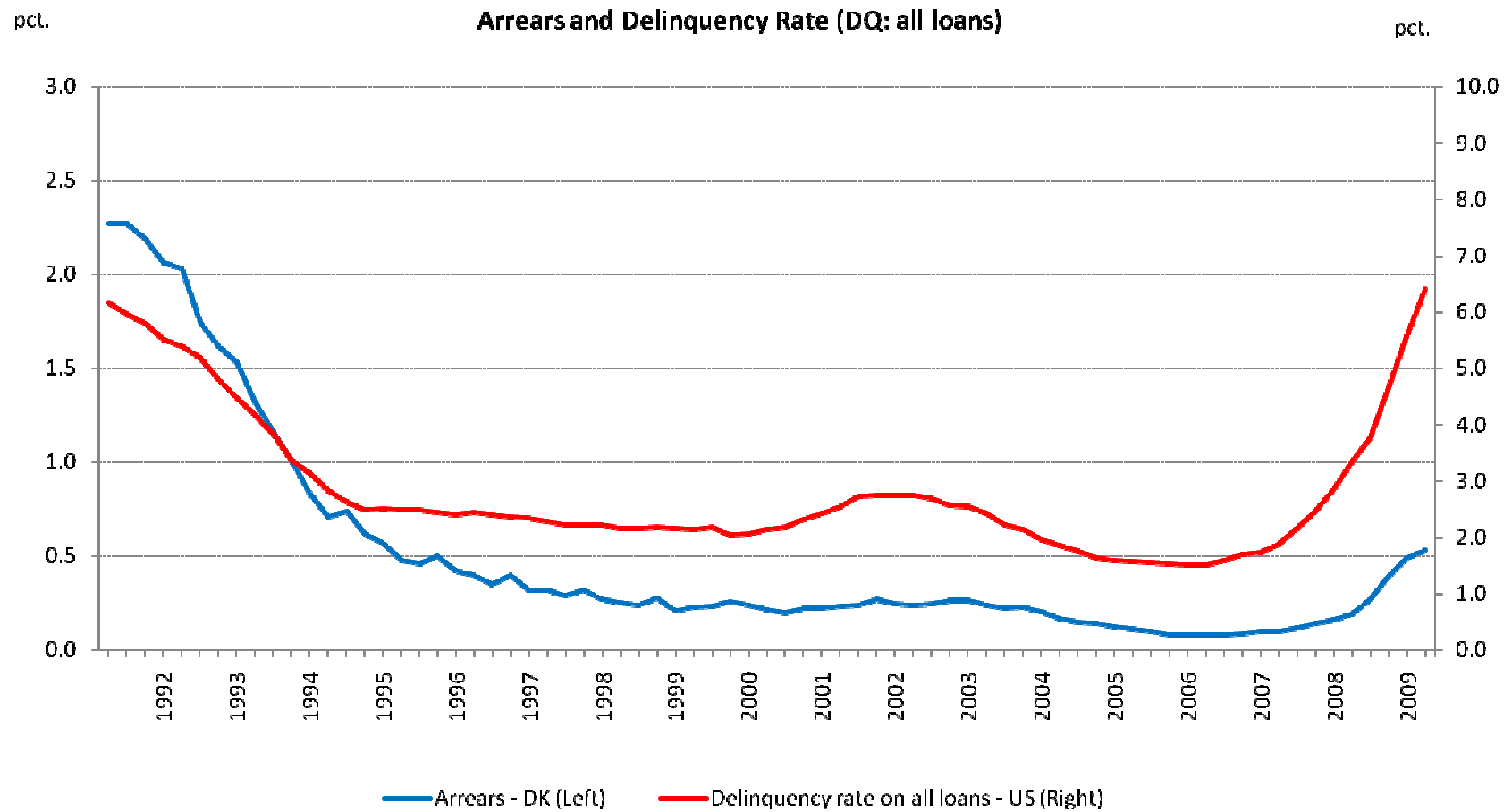
Denmark experienced a larger housing bubble...



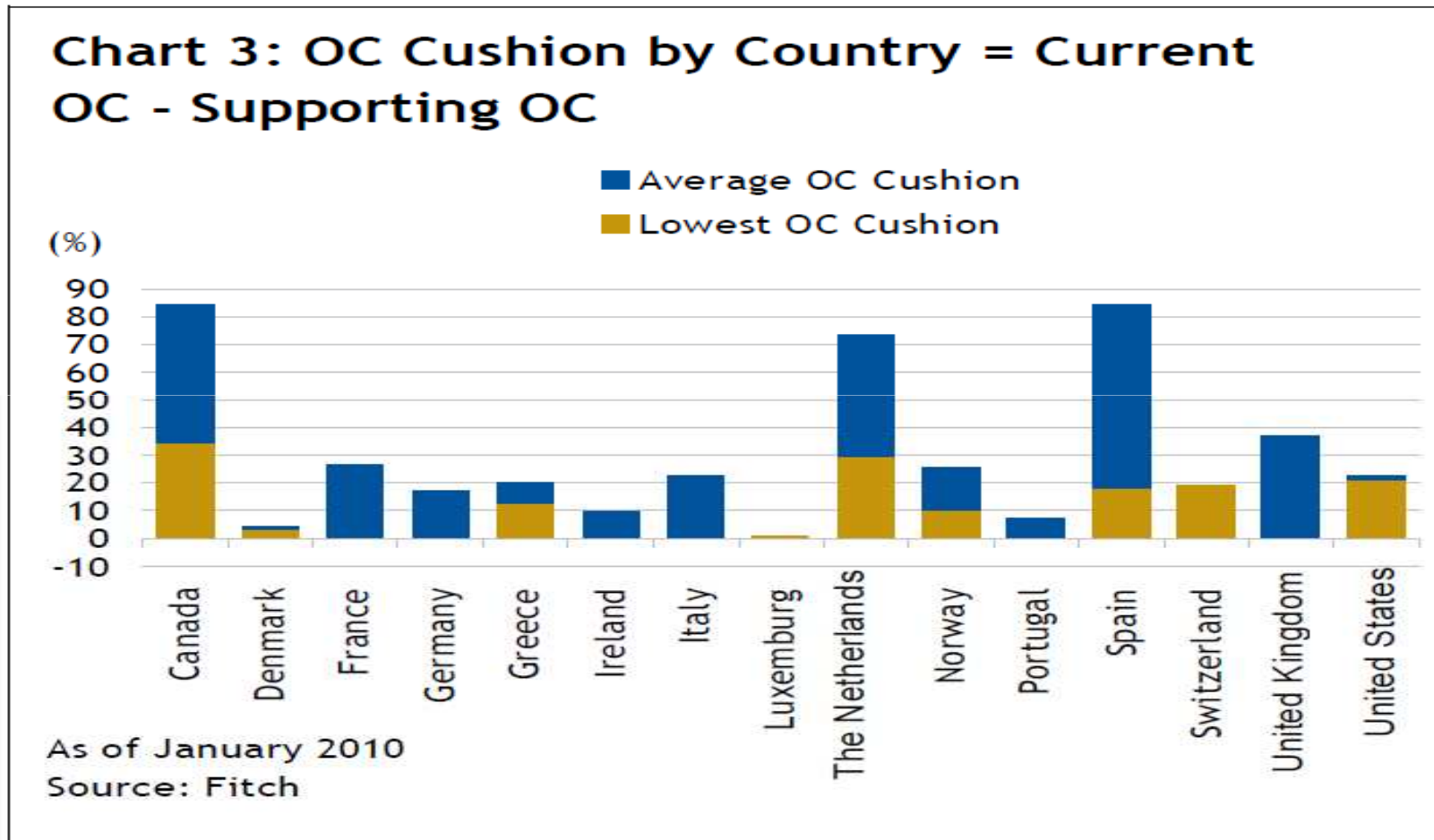
US experiences higher total foreclosure rates



Loans in arrears – small in DK relative to US



Tight ALM results in lowest OC with highest ratings



Fully transparent: real time information on each series

Bonds Denmark

Search Danish bonds
Search: name/ISIN-code:

Bond type Benchmark bonds Mortgage credit and special institutions Government bonds Structured bonds Corporate and other bonds Forwards

Issuers

Coupon/Expiry

Interest rate type Fixed

Deferred amortisation Yes

Open / Closed Open

Name	ISIN	Coupon	B	Volume	Exp.	CCY
10DLR43.18	DK0006304035	10.00		227	2019-02-01	DKK
6BRF111.26	DK0009334575	6.00		109,041	2026-10-01	DKK
7NYK.03A.32	DK0009750010	7.00		391,516	2032-07-01	DKK
8NYK.3Cs26	DK0009726309	8.00		4,654,792	2026-10-01	DKK
6 D 23ds35	DK0009268765	6.00		100,000	2033-07-01	DKK
4 KBH13.14	DK0007200703	4.00		20,000	2014-01-01	DKK
6nyk03D.35	DK0009753386	6.00		340,000	2033-07-01	DKK
5NYK2C.19	DK0009745796	5.00		173,899	2019-10-01	DKK
5TK111Cs32	DK0004713807	5.00		1,687,692	2032-07-01	DKK

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Price information | Fundamentals | Trades | News

Today (2009-03-20) - 5% Hykredit 03D 2038 - DK0009763260

Last	Bid	High	97.080	Exchange Volume	262.583.230	Average price all trades	96.803
97.000	Ask	Low	96.725	Number of exchange trades	37		
↑ 0.23							

Price information for 2009-03-19

Open price	97.050
Close price	96.775
Average price exchange	96.851
Average price all trades	
High	97.075
Low	96.550
Duration	10.57
Yield	5.41
Yield calculation price	96.798
Exchange volume	38.539.243
Number of exchange trades	40

Price graph **12M graph**

Intraday |
 5d |
 1M |
 3M |
 6M |
 12M |
 24M

Nordic Market English

Price definition for bonds

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Historical price information

From

Tap Issuance: a better way to issue bonds

1. How it works

- Reverse the traditional process, first establish bond series then issue mortgages
- After the MCI underwrites and guarantees the creditworthiness of the borrower, the loans are funded by selling into the bond series
- Borrower receives proceeds from bond sale, thus establishing a direct link with the bond market and allowing for optional redemption in the future

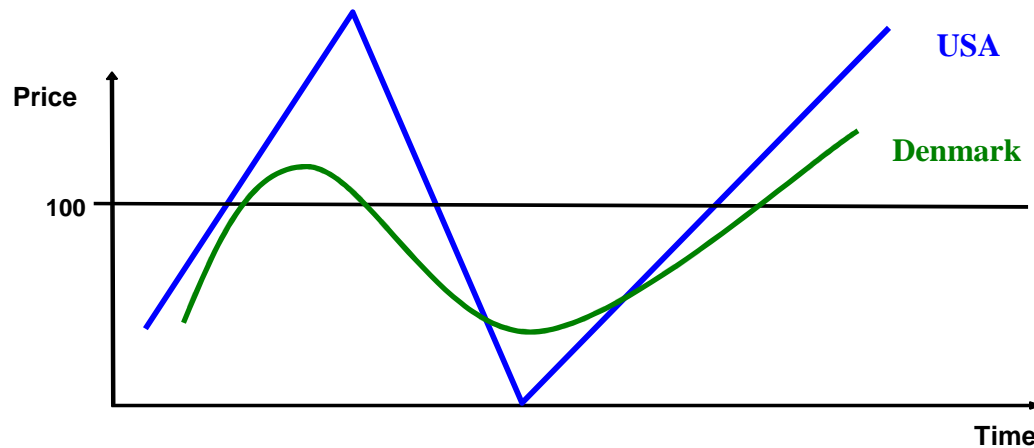
2. Reduces Risks

- Warehouse and market risks are eliminated for MCI, allowing them to use their entire equity to guarantee credit risk
- Elimination of all interest rate risks leads to significant reduction in economic and operational capital under Basle II regulations

3. The USA has done this before

- Freddie Mac Cash Series (old 16 and 17 prefix bonds) was quite successful
- Loans entering the cash window were priced at a daily auction
- Pools were open for tap issuance for one month
- Large, standardized, liquid bonds were created
- Main MBS issuance program in the 1980s, eliminated when FHLMC started running an opportunistic portfolio

Securitization choice can reduce interest rate volatility

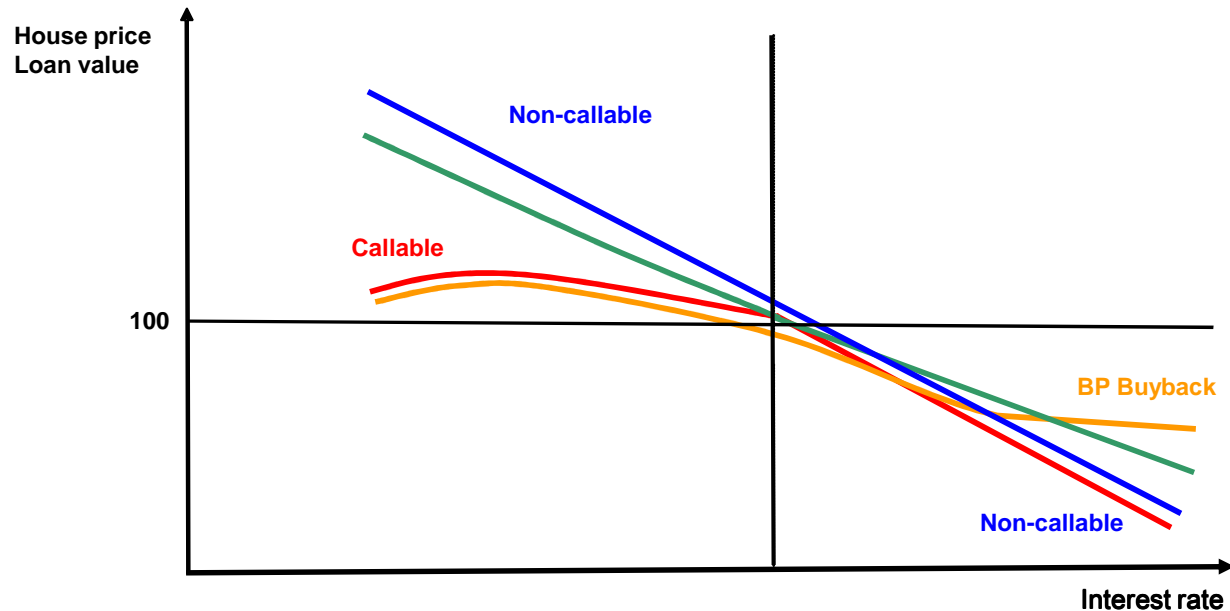


- U.S. mortgage market is a “premium origination” model. This opaque process is used to get the bond market to pay loan origination costs
- Callable loans are made with option struck in the money. This leads to the OAD “illusion” of very low durations of 30 year mortgages
- When interest rates rise, “contingent duration” appears and can be a multiple of original OAD
- No mechanism for the bond market to reduce systemic duration risk
- Danish model is a “discount origination” model
- Loans are priced transparently by bond issuance
- Mortgage banks compete with transparent origination, servicing and insurance charges
- Callable loans are made with option struck out of the money. Thus, 30 year mortgages have significant duration at issue
- When interest rates rise, the duration of the loans increases slightly
- Homeowners can take duration out of the system via optional redemption and refinancing a smaller balance into a higher coupon loan. Call option is re-struck at market rates

Option Adjusted Duration (Years)

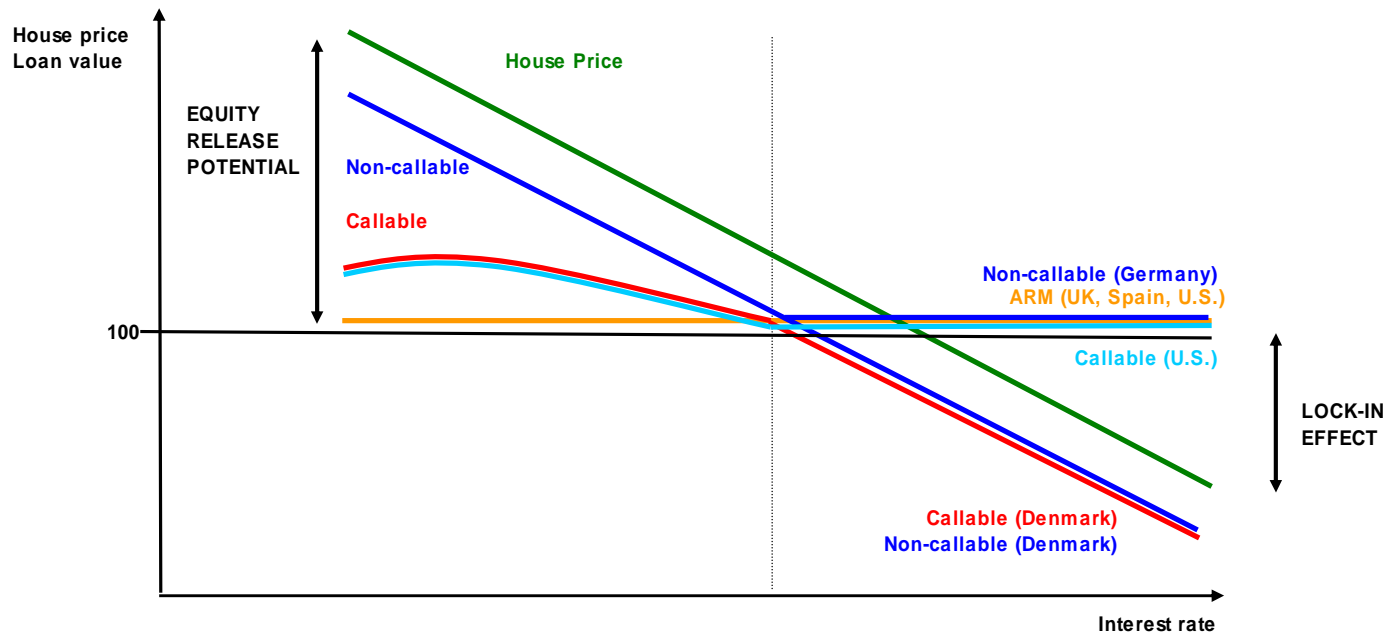
	USA (orig. @ 101.6)			DK (orig. @ 98.9)		
	<u>5.5%</u>	<u>4.5%</u>	<u>3.5%</u>	<u>5%</u>	<u>4%</u>	<u>3%</u>
Rates – 100bp	---	(0.8)	3.6	---	.28	8
Spot	---	2.5	---	---	6.9	---
Rates +100bp	n/a	7.4	---	5.5	7.5	---

Securitization choice can improve negative convexity



- Callable mortgage markets suffer from “convexity paradox” where each investor must hedge his own changes in OAD as well as worry about all the other investors trying to hedge changes in OAD. This becomes an exercise in game theory, as investors hedge to the expectation of other investors’ hedge activity
- Individual investors (and system) worry about change in partial durations (dP/dY) and the size of the error term at every point on the expected callable mortgage price/yield path vs. the original hedge duration
- Duration management tools (interest rate futures, swaps and options) are smaller than the mortgage market
- Asymmetric U.S. mortgage market results in significant duration extension when interest rates rise
- Danish mortgages allow for homeowner to exercise optional redemption when bonds trade at discounts. This smoothes the price path when rates rise. The mortgages trade with lower “empirical” duration. This allows for a lower “hedge duration” at loan origination AND smaller error terms at each point on the price/yield path

Summary of mortgage risk transfer systems

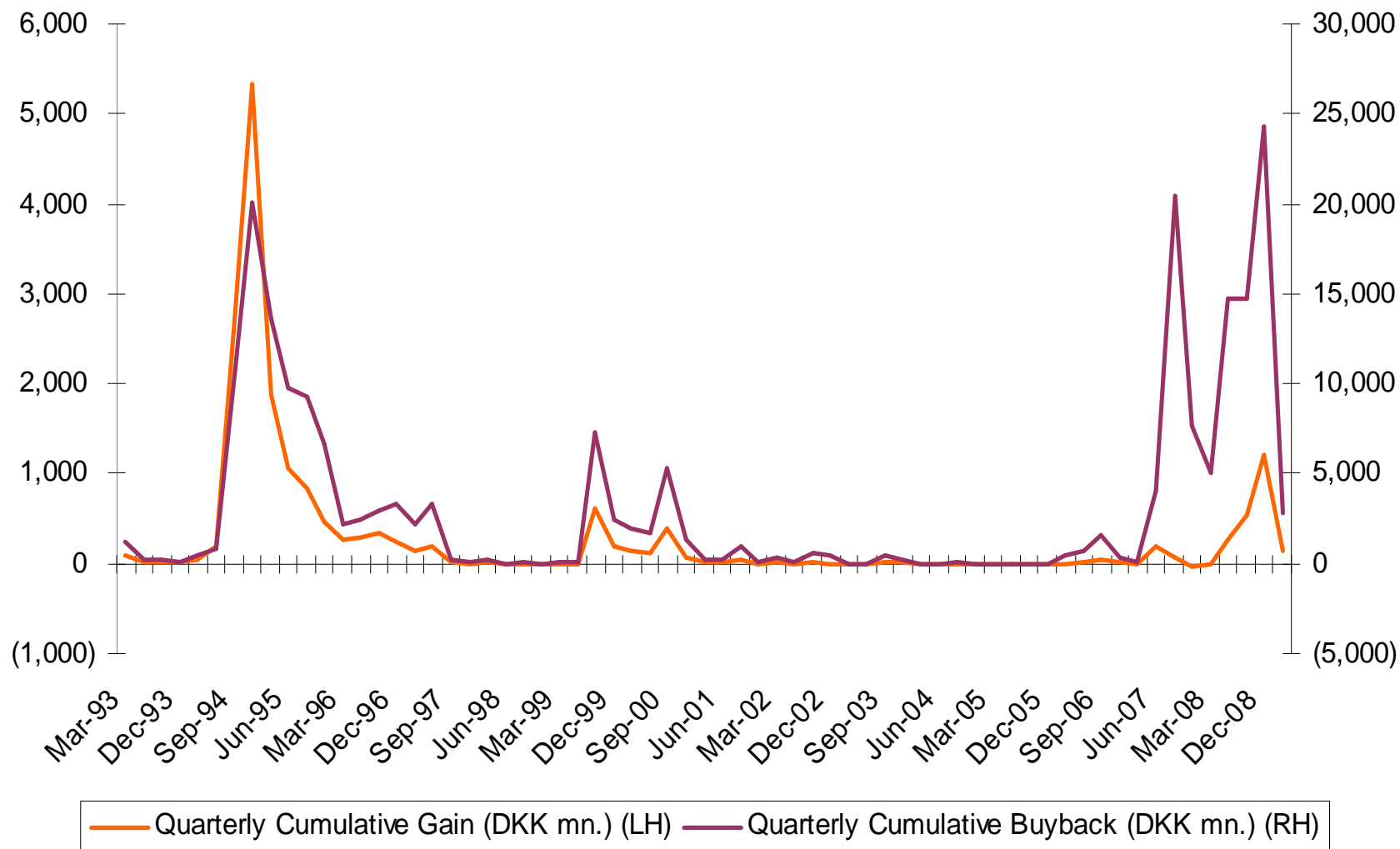


- **U.S. Mortgage Loans:** Can be called at par. However, due to non-standardized securitization, loans may not be redeemed at the market price when trading at a discount. This allows for equity release in event of lower rates, but subjects the borrower to the lock-in effect when rates rise
- All Adjustable Rate Mortgages are worth par in most interest rate scenarios. This implies that the borrower has no hedge against the interest rate sensitivity of home prices exposing him to more significant fluctuations of net home equity
- **Danish Mortgage Loans:** Can always be prepaid at par or redeemed by purchasing the bond at the market price
- **German Mortgage Loans:** Non-Callable at par: homeowners must instead pay a yield maintenance penalty equal to the NPV of the cash flows. When interest rates are higher, the loans are not redeemable at a discount. This is the worst of all possible risk transfer mechanisms

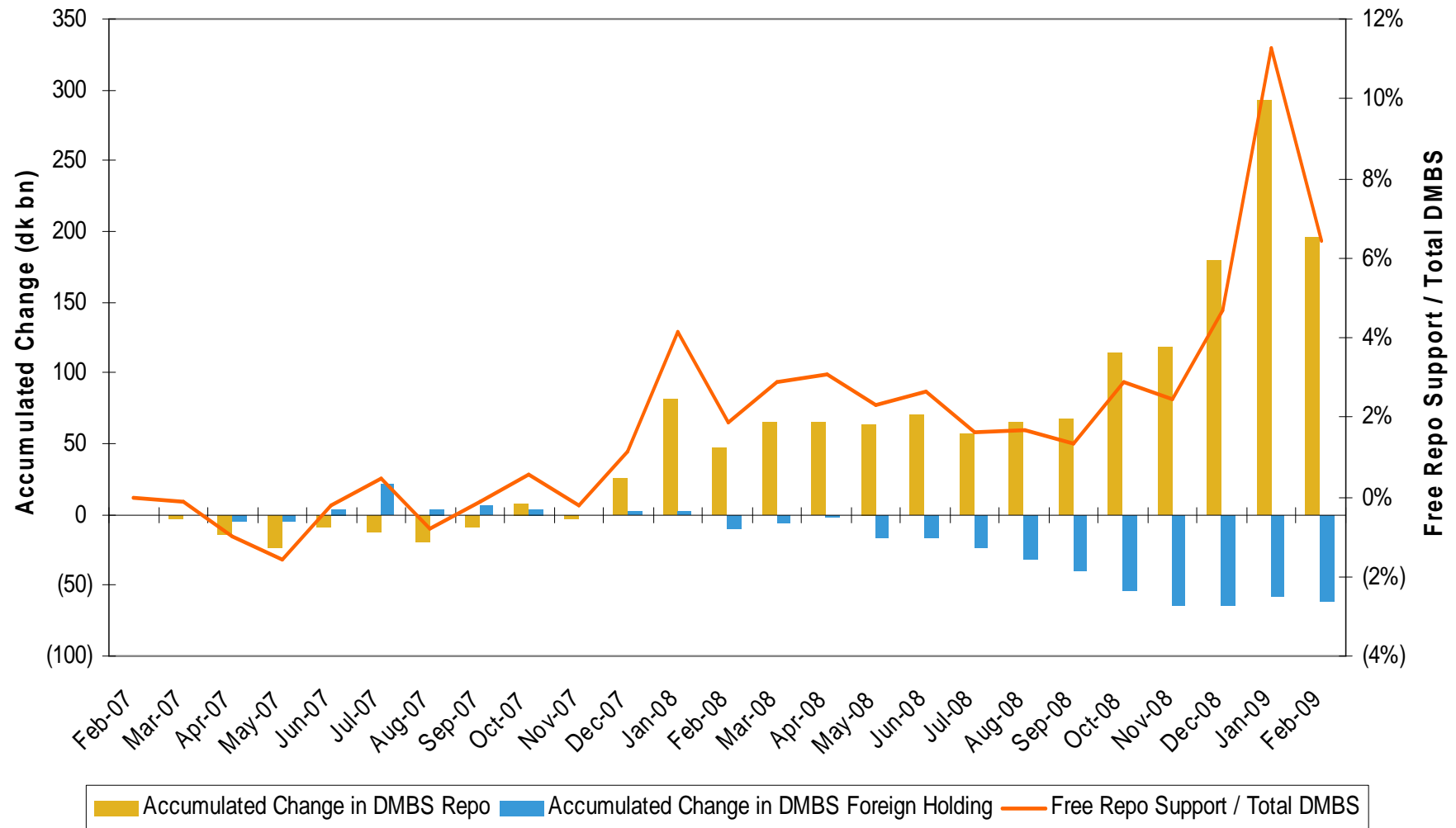
Efficient Design: Swedish vs. Danish Mortgage Bonds

	Sweden	DK	SW-DK
Rates			
5 Year Government	2.66	2.82	-16
5 Year Swap	2.96	2.95	1
5 Year Mortgage Loan	3.84	3.41	43
5 Year Mortgage Bond	2.89	2.9	-1
Spreads			
Swaps - Government	30bp	13bp	17bp
Loan-Bond	87bp	51bp	36bp
Bond-Swap	-7bp	-5bp	-2bp
Ratings			
LTV Maximum	75%	80%	5%
Balance Principle	Cover Principle	Extreme Balance Principle	

Alternative Redemption Increased to Stabilize Market



Net Nationalbanken Repo of Mortgage Bonds



Extension Risk of Mortgage Market

- 1. The implications of these low levels of refinancing activity at historically low mortgage rates is**
 - Extension risk in the mortgage market is vastly underestimated
 - The LSAP has failed in its primary purpose, stimulating a refi wave
 - The homeowners who need the most help, those with declining credit and home values, are the least likely to be able to refinance into a lower rate mortgage
- 2. The shape of the yield curve is the primary determinant of mortgage duration.** Without taking into account slower than expected prepayments, the interest rate risk of the US mortgage market has doubled in the last three years
 - Increasing slope of the yield curve
 - Increased actual and implied volatility in the interest rate options market
 - Dramatic decline in the amount and market share of ARMs
- 3. We are faced with the dark side of the conundrum,** even though we now recognize the huge risks associated with callable/extendable mortgage cash flows, we are powerless to do anything about them.
 - The increase in duration of the mortgage market in the last three years is triple the increase in interest rate risk due to the \$1.5 trillion US budget deficit in fiscal year 2009.
 - A moderate increase in the level and slope of the yield curve in today's bond market can result in an overwhelming duration extension, a much larger threat to rising real interest rates than larger budget deficits and/or Chinese selling of reserves.

We should “get it right” before it is too late

1. There are many sources of pressure on long term interest rates

- Historic budget deficits (over \$1t) for many years
- Fear of FRB’s monetization of such debt and easy monetary policy
- Potential sale of foreign ownership of US debt instruments (\$10t)
- Enormous contingent duration embedded in the \$10.4t US mortgage system

2. The perfect opportunity exists to address the GSEs

- Mortgage rates are at all time lows allowing for excellent rate refinancing opportunity
- The US Government is the “single payer” for the mortgage market

3. Principle of Balance system allows for automatic de-levering

- As interest rates rise, the economic value of homeowners’ liability falls
- Homeowner’s are incentivized to redeem their existing loans at discounts, paying for this by issuing into new, smaller balance loans with higher coupons
- Face amount of debt is significantly reduced
- Weight of debt (calculated as Option Adjusted Duration) is significantly reduced

4. Waiting is not an option

- Moderate increases in the level and slope of interest rates can result in overwhelming duration extension, many multiples of the risk from large deficits or foreign selling
- US homeowners are already suffering from “lock-in” effects limiting labor mobility

Mortgage Duration 102: weight is contingent upon inputs

	<u>% ARMs</u>	<u>FNCL OAD</u>	<u>Market Size</u>	<u>Total OAD</u>
September 1997	18%	5.0 est	\$3.72t	15.3t
September 1999	9%	5.0 est	\$4.35t	19.8t
September 2001	10%	4.33y	\$5.22t	20.3t
September 2003	12%	4.53y	\$6.68t	26.6t
September 2005	28%	3.61y	\$8.58t	22.3t
September 2006	30%	3.40y	\$9.67t	23.0t
March 2007	25%	3.86y	\$10.25t	29.7t
March 2008	19%	4.70y	\$10.55t	40.2t
March 2009	14%	5.04y	\$10.43t	45.2t
September 2009	12%	5.34y	\$10.34t	48.6t

- U.S. mortgage market is a “premium origination” model. This process is used to get the bond market to pay loan origination costs.
- Issuing callable bonds struck in the money results in very low OAD at times of loan origination
- The fluctuations in FNCL OAD are driven by the slope of the interest rate swap curve and implied duration
- Combination of migration to ARMs, a flatter curve and lower volatility masked the dramatic increase in the mortgage market after 2003
- Higher volatility and a steeper curve have driven FNCL OAD much higher in the last two years
- A significant switching from ARMs to FRMs has increased the duration of the market as well
- None of the increase in OAD comes from higher rates and/or slower prepayment speeds....YET!

Issues on Mortgage Servicing Rights

1. Mortgage Servicers are NOT organized or authorized to deal with systemic problems

- Trustee and Master Servicer get paid very small fees and do nothing
- Primary servicers are starved for funds on Day 1 given incentives to book profits in the quarter the loan is originated in the form of MSRs
- PSAs are not standardized and subject to significant interpretation risk

2. Mortgage Servicers have the wrong incentives

- Special servicers often have incentive to act in the interest of subordinate bond holders
- PSAs are idiosyncratic and require unanimous consent for servicer action
- Servicers are incentivized to do the wrong thing for the homeowner
 - Servicing advances are expensive and often not fully compensated
 - The write down of loan principal reduces servicing fees
- Second Liens are often serviced in a more rigorous fashion

3. Transparency and Reporting

- Servicers know the likely cash flows of the underlying loans 6 weeks before they are reported to the market. Bond market prices the interest rate risk and credit risk appropriately raising mortgage rates for everyone
- Homeowners get only one annual statement and no website to view escrow balances
 - See Jack Guttentag “Mr. Mortgage” website for extensive discussion

Mortgage Servicing Rights: What are they?

- Mortgage Servicing Rights (MSRs) can be described as
 - Present Value of Interest Only (IO) cash flow stream that exists between mortgage note rate and bond coupon, net of GSE guarantee fees and costs of servicing the loan
 - IOs are negatively convex, negative duration assets whose value is driven by
 - Positively correlated to moves in actual mortgage rates and the slope of the swap curve
 - Negatively correlated to moves in actual and implied interest rate volatility
 - Negatively correlated to house prices, financial innovation, mortgage banker competition
 - Costs of servicing is driven by costs of handling default, this has become significant
 - FHA servicers must advance the note rate while they are reimbursed at the “FHA debenture rate”
 - MSRs are a “tax deferred asset” and a “non-cash asset”
 - Federal and state tax authorities finance MSRs at 0% interest rate until the cash flows are realized
 - Remaining balance (1-combind tax rate) must be financed on B/S with non-secured funding
 - MSR historically marked higher than agency IOs to reflect chance to capture new MSR upon refi, P&I escrows, T&I escrows, late fees and expand customer relationship
- MSRs are the best hedge for a large financial institution
 - Only significant negative duration asset, which can help balance tendency for banks duration risk
 - Negative duration equivalent of \$750b FN5s
 - Only significant asset to perform better when household credit conditions deteriorate
 - Voluntary prepayments are significantly reduced when FICOs fall and LTVs rise
 - Current prepayments are 25% of modeled speeds, indicative of sensitivity to HPI and RU
 - MSRs hedge benefits scale up for the financial system as a whole, unlike CDS in which every winner is matched to an equal and opposite degree by a loser

Mortgage Servicing Rights: Mark to Historical Herd?

- MSR asset is marked to market on a quarterly basis along with the associated hedges
 - big banks (70% of MSRs today) run an “echo system with no biodiversity”
 - Concentration of MSR asset makes it easy for big banks to copy each other in
 - Prepayment modeling
 - Hedging of rate, curve, basis and volatility risk
 - Creates “abnormal demand “ for CMM swaps as CMM is the main model assumption that drives refinancing incentive and prepayments
 - The required yield is linked to the weighted average cost of capital
- Pro-cyclical “regulation” of mark to market process exacerbates tendency to mis-value and mis-hedge
 - OCC does quarterly survey of top 20 mortgage servicers who report on standardized form
 - MSR mults (capitalization multiples) by loan type
 - MSR hedge ratios (in 10yr equivalents) by loan type
 - Price Waterhouse does a mid-quarter survey of the top 10 mortgage servicers who report
 - Intent on where next quarter end MSR mults will be moving, net of hedges
 - Changes in other servicing inputs (costs of advances, labor, unexpected hedging expense)
 - In combination with Analysts, the two surveys provide incentive for servicers to try to guess where everyone else will mark to market their MSR assets at quarter end. Like the mythical Keynesian beauty contest, each participant attempts to pick the number in the middle of the distribution, not the right valuation
- End result is that each big bank is forced to mark to market by adjusting their marks to be at or below the middle of the “herd” as defined by the last OCC quarter-end survey. In a falling rate environment, this leads to significant undervaluation of MSRs and provides accounting cover to understating true profit margins by a up to a point.

Mortgage Servicing Rights: Pro-Cyclical Regulation

- Regulation of MSR has significant, unintended and poorly understood consequences
 - FRB limits MSR to no more than 75% of a regulated financial institution's Tier I capital
 - Drives small loan originators to sell their loans "servicing released" to TBTF banks TPO channels
 - Now servicers have zero connection to borrower, making future loan problem resolution hard
 - Small banks lose their only natural interest rate hedge
 - Medium sized mortgage originators are faced with "sell or grow" business choice, with organic growth causing regulatory problems. Drove large mortgage originating banks into thrift charters
 - FRB did NOT create a special financing program for servicing advances, most private sector lenders have tried to minimize financing to mortgage servicers, forcing even more small and medium sized originators to sell loans servicing released
 - All bank regulators view MSR and MSR growth as a necessary evil, something to be minimized
 - Basle III proposes to limit MSR to 10% of Tier 1 capital, MSR plus DTAs to 15%,
 - Pushing MSR out of regulated financial institutions into unregulated companies.
 - Driving down retained servicing and reducing existing "skin-in-the-game"
- Financial analysts do not understand MSR, MSR hedging and MSR accounting
 - Analysts are afraid of what they do not understand
 - Designation as a Level 3 asset raises investor sensitivity
 - Anecdotes of large blowups in MSR hedging are widely advertised and not easily forgotten
 - 29 year bull market in bonds has reinforced analyst myopia
 - Positive duration has been a source of profits while unhedged negative duration has been a source of loss.....lets extrapolate that forever!
 - Reporting is opaque, making it hard for analysts to discern proper hedging

Proposals on MSRs and Servicer Guidelines

1. Promote benefits of Mortgage Servicing Rights

- Eliminate regulatory limits on scale of holdings, push back on Basle III
- Encourage retention of MSRs as way to reduce interest rate risk and hedge credit risk
- Eliminate “gain on sale” accounting treatment, require income to be accrued

2. Publish Regulatory “Safe Harbor” rules to guide servicer behavior

- Address conflict of interest between servicer and holder of subordinate liens
 - Require servicer to purchase first lien from securitization at “par” before making any efforts to collect on second lien
 - Require prompt action on delinquent loans, to minimize the negative carry associated with advances
 - Take appropriate action to preserve value for the senior bond holders
- Require real time reporting to both bondholders and homeowners

3. Strong and specific legislation to support the of a covered bond market

- Covered bonds resolve most of the current issues resolving mortgage loan servicing
- Clear language on how FDIC treats covered bonds in event of issuer insolvency
- Strict limits on types and quality of underlying cover pool collateral: only first lien residential and multifamily mortgages with conservative LTVs
- Strict limits on asset/liability mismatches, in recognition that such mismatches were highly associated with insolvency among European covered bond issuers

This is a unique opportunity to “get it right”

- 1. The GSEs should be transformed into mortgage guarantee vehicles only**
 - Fannie/Freddie should be merged and eventually the portfolios should be run off
 - Frannie Mac should establish a Principle of Balance (PoB) guarantor program
- 2. Credit risk allocation to be shared between originator and federal guarantor**
 - Originator should retain 10% first loss risk position
 - Margin between loan rate and bond should NOT be capitalized, instead earned over time
- 3. Borrower gets a market rate based on transparent bond pricing**
 - Bonds are tap issued on a daily basis
 - Loan is cancelable at the lower of the market price or par – the Principle of Balance
 - New loans will have full recourse, enforced by an agency of the U.S. Treasury Department
- 4. A unitary financial regulator should be established to and be empowered to:**
 - Remove bad loans, bad brokers and bad borrowers from the system
 - Raise capital and reporting requirements as deemed necessary
 - Lower LTV ratios and/or raise credit scores as deemed necessary
 - Raise margins for borrowers if ex post credit costs prove to be higher than expected
 - FDIC, FHFA, FRB, OCC, OTS and NCUA must cede regulatory authority

Lowering interest rates, reducing negative equity

- 1. Lower interest rates through new or expanded government guarantee programs**
 - Super streamlined refinance should waive all requirements except one -- the borrower must be current on their existing mortgage, no appraisal required.
 - The GSEs should not be charging additional fees for loans they already guarantee.
 - The GSEs should refinance current non-agency loans at reduced fees.
 - Loan size limit should be \$729,750, going up to 130% of this limit in high cost areas.
- 2. Consider modifying mortgages so that homeowners have at least 10% positive equity in their homes at current valuations based on an Automated Valuation Model (AVM).**
 - The conversion of mortgages could be systemic, enforced on the owners of mortgage securities. Servicing companies would be fully indemnified.
 - The losses from the write-down of principal would be borne by the bond holders.
 - These losses should be treated as full tax credits, accounted for as a Treasury Strip
 - The tax credits should be non-transferable.
- 3. As a matter of equity, homeowners with written-down mortgages would be subject to higher taxes**
 - Principal reduction will count against taxpayer's \$500,000 exemption from capital gains
 - Reduction of capital gain exemption will last for 20 years and apply to the gain from the sale of any residential real estate, not just the home associated with the principal reduction

Counter-cyclical Proposals

1. Require FHFA to direct GSEs to use all tools available

- Eliminate LLPAs for the refinance of ALL loans currently guaranteed by the GSEs
- Eliminate the 25bp “Adverse Market Fee”
- Eliminate appraisal requirement and paperwork as part of a new “Super-Streamlined” refinance program
- Requirements: being current on existing mortgage and being alive

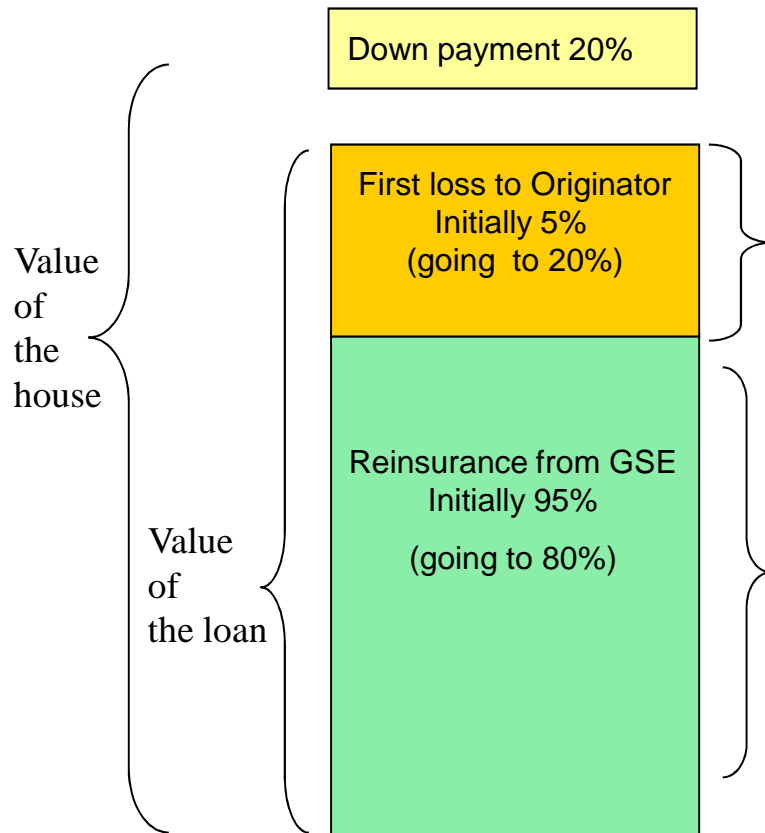
2. GSEs should implement new securitization program: Principle of Balance

- Enable pooling which allows for optional redemption
- Provide guidance on future information disclosure requirements
- Discourage the ex-post opportunistic practice of culling through loan production to find loans that display preferred prepayment characteristics
- Encourage originator/securitizers to retain some “skin in the game” via significantly reduced G-fees

3. Promote benefits of Mortgage Servicing Rights

- Eliminate regulatory limits on scale of holdings (see Appendix)
- Encourage retention of MSR as way to reduce interest rate risk and hedge credit risk
- Eliminate “gain on sale” accounting treatment, require income to be accrued

Proposed Credit Enhancement Structure for Risk Sharing



- Provided by Originator and/or MI industry
- Expected Capital reserves of 20%
- Backup capital and industry skill to be provided by MI Reinsurance Industry
- AAA rating flows from GSE reinsurance guarantee
- The value of the house will serve as collateral
- Bond holder looks to GSE for full faith and credit guaranty
- GSE looks to Originator to remove bad loans from the pool
 - Originator purchases parri passu amount of bonds from pool at lower of market or par
 - If originator fails to perform, GSE can seize servicing rights and margin and reassign to another servicer
- This can be done in the form of either true sale securitization or through the issuance of covered bonds
- GSEs should reduce portion of reinsurance over time
 - Start with bottom 95%
 - Drop by 5% every year

Primary/Secondary Spread



Historical Benefits of Refinancing: Household Savings

- Refinancings result in *permanent* annual cost savings to households, not just one-time savings.
- Refi wave in 1991/94:
 - 202 bp rate drop, \$2.3T mortgage outstandings → \$47 billion in annual savings.
- Refi wave in 2001/04:
 - 134 bp rate drop, \$5T mortgage outstandings → \$67 billion in annual savings.
- Refi wave in 2007/10 with traditional primary/secondary market spread, and with full monetary transmission:
 - 123 bps, \$10T mortgage outstandings → \$123 billion in annual savings.
- Refi wave in 2007/10 (actual):
 - 33 bp rate drop, \$10T mortgage outstandings → \$33 billion in annual savings.
- **Growth of primary/secondary market spread has cost US households \$90 billion in annual savings. Savings would go to the 35mm households who are current on their existing loans but are unable to refinance due to LLPAs and less competitive pricing from the big banks.**

Mortgage pricing 101: December 29th, 2010

	Mythical 0 Pt.	Borrower 1	Borrower 1	Borrower 2	Borrower 3
FICO/CLTV	700/80	750/60	750/60	739/75.01	699/75.01
AMDC	0.00	0.00	0.00	0.25	0.25
LLPAs	0.00	0.00	0.00	0.50	1.75
Loan	100.00	100.00	100.00	100.00	100.00
Closing Costs	1.00	1.50	1.50	1.50	1.50
Total \$ Out	101.00	101.50	101.50	102.25	104.75
MSR Multiple	6.5	4.75	4.00	3.50	3.00
Servicing Fee (bps)	0.50	0.50	0.25	0.25	0.375
MSR value (SF*Multiple)	3.25	2.37	1.00	0.88	1.13
Points/(Credits)	0.00	1.875	0.00	-2.0	-3.125
Bond Coupon	FN 4	FN4	FN4.5	FN 5	FN 5.5
Bond price	98.16	98.16	101.41	104.25	106.41
Total \$ in	101.41	102.40	102.41	103.13	104.41
Profit on Loan (\$ in-\$ out)	0.41	0.90	0.91	0.88	0.91
Mortgage Interest Rate	4.625	4.625	4.875	5.375	6.00

- 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
- Assumes 1.5 points of origination costs
- 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 is being capitalized significantly below where the IO market values the cash flows due to Basle III limitations on DTAs
- Historically, MSR is valued a full multiple above equivalent IO strips because of ancillary income from servicing.
- Today, low valuations placed on MSR hide 3/8 point of profit margin.
- TBA/MSR multiple pricing as of 12/29/10 for March delivery:
 - o FN 4.0 @ 98.156/IOS is 5.06x
 - o FN 4.5 @ 101.406/ 4.0x est.
 - o FN 5.0 @ 104.250/ 3.5x est.
 - o FN 5.5 @ 106.406/ 3.0x est.

Some more proposals

1. Align the GSEs interests with those of society

- Simplify and limit the size of financial businesses, starting with the GSEs
 - Eliminate portfolio, hand management of existing portfolio to professionals
 - Focus on using full faith and credit guarantee to stimulate a standardized, transparent interest aligned mortgage market
- Return to counter-cyclical credit reserving process

2. Reduce risk weighting of GSE MBS and debt

- Relatively painless way to signal support without consolidation on Federal B/S
- Consistent with reduction of risk weight of TLGP paper from 20% to 0% in October

3. Systemic Crisis backstop “MBS buyer of last resort” should be FRB/Treasury

- Require purchase of GSE guaranteed MBS in event of Financial Crisis
- Counter-cyclical and automatic, outside of legislative/regulatory fiat

4. Strong and specific legislation to support the of a covered bond market

- Clear language on how FDIC treats covered bonds in event of issuer insolvency
- Strict limits on types and quality of underlying cover pool collateral: only first lien residential and multifamily mortgages with conservative LTVs
- Strict limits on asset/liability mismatches, in recognition that such mismatches were highly associated with insolvency among European covered bond issuers