



Public Support for Mortgage-related Securities Markets

Rationales & Current Approaches

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Structure of the Presentation



1. Rationale – Why Support the Introduction of Mortgage-related Securities ?
2. Current Approaches – Effects & Limits
 - The Instrument Set w. Examples
 - Case Study on Effects & Limits: US Housing Finance
 - European Trends
3. Do's and Don'ts



Terminology Note

- ◆ Mortgage-related securities (MRS) here include bank bonds (mortgage bonds) and loan pools (MBS) secured by mortgages.
- ◆ Discussion also addresses unsecured bonds issued by public banks, agencies or publicly ‘sponsored’ enterprises specializing in mortgage finance; in common terminology: ‘agency bonds’.

Agency bonds do not feature explicit bankruptcy privileges for investors that are characteristic for MRS.



1. Why Support the Introduction of Mortgage-related Securities ?

3 Rationales

- ◆ Financial Sector Development (Direct)
- ◆ Housing Sector Development (Indirect)
- ◆ Promotion of Growth (Indirect)



Financial Sector Rationales

- Fundamental issue: Mortgage assets carry specific risks that render full intermediation ('banking') implausible.
 - Liquidity risk:
 - ◆ Very long-term assets viz short-term liabilities or interbank debt.
 - Interest rate risk:
 - ◆ Type 1: Maturity mismatch. Example: First stage of US S&L crisis after 1980 Volcker break.
 - ◆ Type 2: Volatile duration of assets (→ prepayment and reinvestment risk). Example: French Marche Hypothecaire 1980s.
 - ◆ Relevant for transition countries: foreign-exchange risk !



Financial Sector Rationales

- Credit risk:
 - Type 1: Cash flow risk. Business cycle, unemployment.
 - Type 2: Collateral price risk. In EU and US large property cycles occur every 10 – 15 years, leading to ‘catastrophic’ loss-given-default realizations as prices drop from peaks.
- Transferring some risk from banks to capital markets (rather than borrowers) may generate efficiency gains.
- Sophisticated mortgage instruments help to manage risk, e.g. limiting interest rate risk for borrowers will mitigate credit risk.



Financial Sector Rationales

- 1: to improve incentives towards risk mitigation as well as the strategic menu of options for banks.
 - 2: to protect the state by supporting a ‘narrow’ banking approach for mortgage finance, reducing likelihood of bank failure and costly public bail-out.
 - 3: to create a new transparent investment instrument class for non-bank investors with long-term horizons.
- Solution: supporting mortgage-related securities markets during infancy (= temporary) will serve all three goals



Invalid Rationales – Frequent in Practice

- To subsidize the primary mortgage market,
 - by enabling lower capital holdings of banks while risk remains the same – bank capital is the insurance deductible of government for its protective role of small savers.
 - by transferring risk permanently to the government, bailing out the banking system esp. from mortgage credit risk altogether.
 - by maintaining support instruments targeted to the infancy phase of MRS forever.



Invalid Rationales ..



- To compensate for weaknesses of primary mortgage or capital markets.
 - Failure to reduce inflation (10% threshold) and solve fiscal problems (crowding out of private sector).
 - Failure to develop legal and regulatory infrastructure for credit and bond markets.
 - Inability to develop and maintain a national bond market, e.g. because of insufficient scale of the investor and issuer base.



Housing Sector Rationales

- 1. MRS may help to mobilize untapped investment demand for the housing sector
 - By reducing cost of funds
 - ◆ Rather long-term rationale, as low-cost alternatives exist in the short and medium term: deposits, contractual savings.
 - By allowing contract options that protect the investor and thus stimulate investment demand
 - ◆ An example would be fixed-rate mortgages with repayment option that allow investors to take advantage of rate declines.

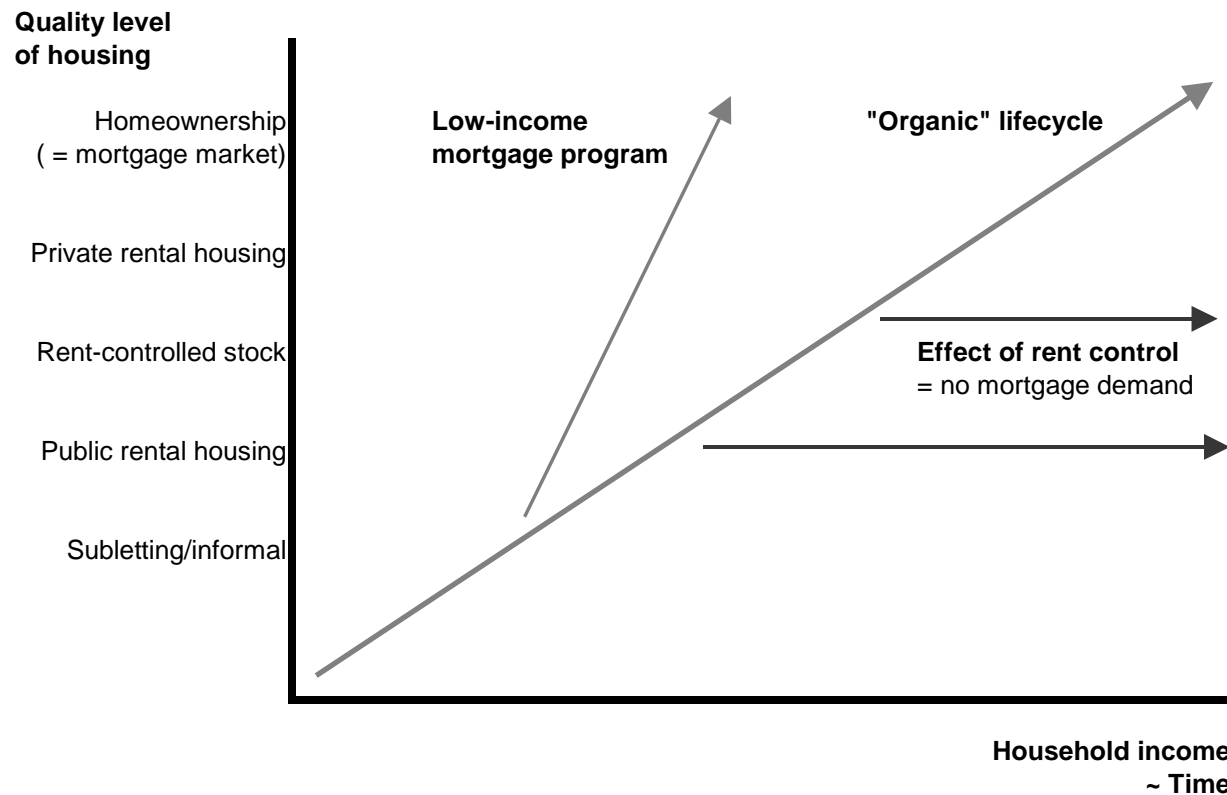


Housing Sector Rationales

- 2. The presence of MRS may help to achieve general (low-income focussed) housing policy goals:
 - By enabling the filtering chain through tapping the demand of high-income households. These will vacate rental units of the stock, making it available to lower-income households.
However, filtering will only work if the rental sector works properly.
 - In combination with other support instruments in certain targeted programs.
However, low-income mortgage finance programs compete with rental, co-operative housing program, which - under most circumstances – have less regressive income incidence.

Support for mortgage finance may be ineffective, if prices are distorted. →CHART

Mortgage Market and Housing Policy





Invalid Rationales..



1. Support policies for MRS cannot be substitute for a balanced housing sector strategy.

Strategy to support homeownership demand alone would entail at a minimum:

- Removing ‘hard’ rent control and other pricing distortions.
- Active land supply and land development policy, including deregulation and local government reform, to reduce supply costs.
- Reduction of transaction costs of housing, enhancing its proximity to liquidity (from registries to stamp duties)
- Coherent tax & regulatory treatment of housing as provident instrument for retirement



Limitations resulting from Rationale Discussion

1. Case for supporting introduction of MRS stronger from financial sector than from housing sector perspective.
2. Unless targeted, support policies for MRS should be temporary –avoiding permanent subsidization of MRS
3. Support policies should be embedded in a housing sector concept observing – at least in the long-term:
 - Leverage neutrality – relative price of debt finance to equity finance should not be distorted.
 - Tenure neutrality – relative price of mortgage vs. rent should not be distorted.
 - Targeting – mortgage market subsidies tend to benefit the upper middle class & high house prices.

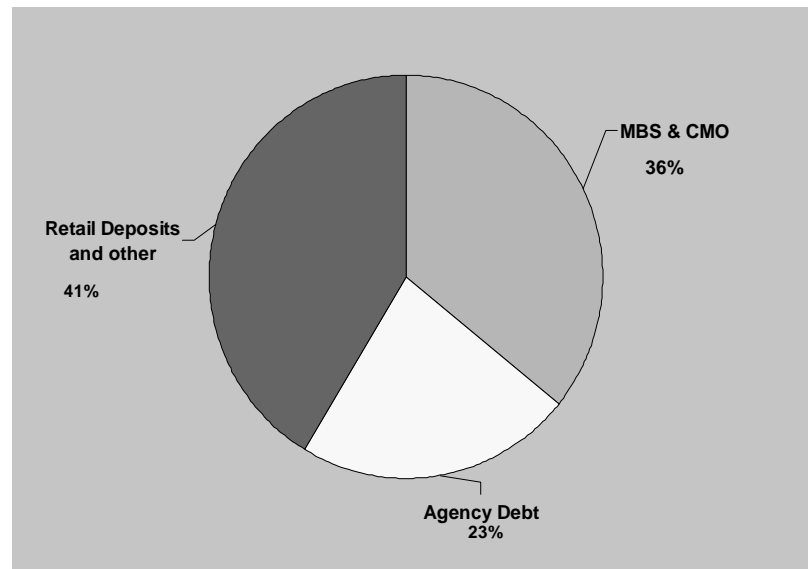


2. Current Approaches – Effects & Limits



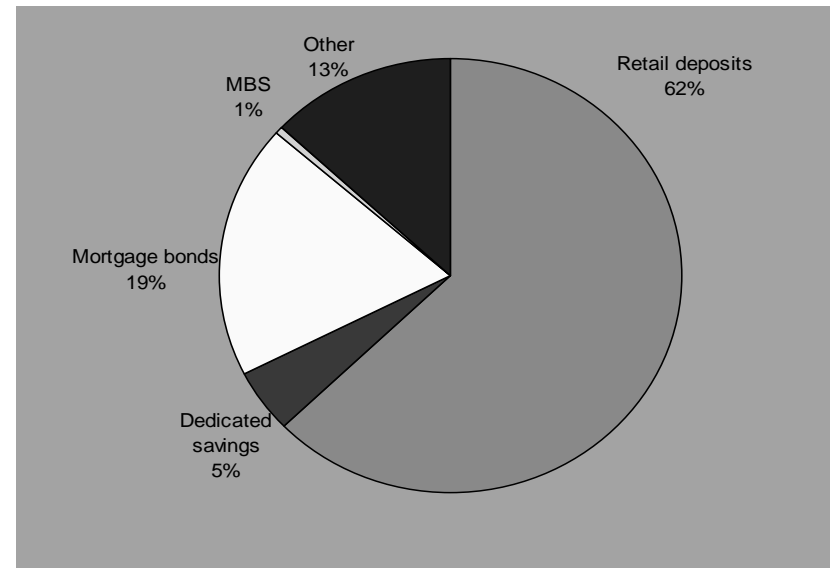
Relevance of MRS for Mortgage Finance – US & Europe

US 2000



Source: Federal Reserve Board. Note: Residential housing only.

Europe 1998



Source: EMF. Note: 'Other' includes agency debt. 'Dedicated savings': long-term contractual savings for housing. Data include UK and Ireland.

Relevance of MRS for the Bond Market – US & Europe

US 2000

Gross issuance 2000	US\$ bn	Share %
Private sector		
Asset backed	230	10%
... of which housing related	79	4%
Corporations	507	23%
Subtotal	737	33%
Public sector		
Central government	283	13%
Local government	200	9%
Agency debt	408	18%
Agency CMO	100	5%
Agency MBS	483	22%
Subtotal	1475	67%
Total long-term	2212	100%
Rollover of ST agency debt (est)	550 - 600	

Source: The Bond Market Association. Note: domestic issuers only. Housing related asset backed: home equity loans, manufactured housing.

Europe 2000

Gross issuance 2000	Euro bn	Share %
Private sector		
Financials	246	19%
Pfandbriefe	207	16%
Asset backed	39	3%
Corporations	142	11%
Subtotal	634	49%
Public sector		
Central government	595	46%
Local government	13	1%
Agencies	39	3%
Supranationals	13	1%
Subtotal	659	51%
Total long-term	1293	100%

Source: EU Commission. Note: Domestic, foreign and supranational issuers in the Euro bond market. 'Pfandbriefe' includes all mortgage bonds. Agency issues include Euro 10 bn issue by Freddie Mac in the second half of 2000.



2.1. Public Banks/Agencies issuing MRS and/or Agency Bonds

◆ Anglo-saxon & Europe examples

- US:
 - State housing finance agencies, issue state-guaranteed mortgage bonds (targeted)
 - Federal agencies (e.g., Fannie Mae prior to 1969) issue federal agency bonds (not targeted)
- Germany:
 - State-owned Landesbanken issue public mortgage bonds (not targeted)
 - Federal KfW issues federal agency bonds funding housing programs (largely not targeted).
- France, Spain, Germany: semi-public savings banks (targeted) issuing unsecured bonds.

◆ Transition country examples

- Hungary: FHB Bank, public mortgage bank (not targeted), issues mortgage bonds.
- Latvia Mortgage & Land Bank, combined development agency & mortgage bank (not targeted) issues mortgage bonds.
- Czech National Housing Fund (targeted) entitled to issue agency bonds.
- Slovenian National Housing Fund (targeted) issues agency bonds.
- Note: Transition countries have largely not reintroduced public or non-profit banks where they existed prior to WW II.



2.2. Public Loan Insurance enhancing Privately Issued MRS

◆ Anglo & Europe examples

- US: FHA (loan guarantor), usually in combination with GNMA (bond guarantor) (targeted)
- Canada: CMHC loan guarantees (not targeted) enhancing private label MBS.
- Australia: HLIC - privatized in 1997 (not targeted), enhancing MBS
- Netherlands: WSW (not targeted), enhancing MBS

- Sweden: BKN fund (untargeted), backing Swedish mortgage bonds.
- France: FGAS fund (targeted) , backing obligations foncieres.

■ Transition Country examples

- Lithuanian Mortgage Insurance Company (LMIC), 1st full year 2001, so far not widely used.
 - Other MI rather as temporary substitute for weak mortgage collateral (e.g, Poland, Slovenia).
 - Some housing funds with low-income guarantee pgms.
- So far not used as MRS enhancement instrument.

2.3. Public Financial Guarantees & Pool Insurance for Privately Issued MRS

◆ Anglo-saxon & Europe examples

- US: ‘government-sponsored enterprises’: Fannie Mae MBS, Freddie Mac PC, FHLB MPF (implicit guarantee, not targeted)
- Canada: CMHC-guaranteed private label MBS (explicit, not targeted)
- Germany: KfW agency guarantees private mortgage bank assets, converting mortgage bonds to quasi-agency bonds (explicit, not targeted)

- Netherlands: private label MBS with guaranty by public-private foundation WSW (implicit, not targeted)
- France: CRH joint issuer of special-law mortgage bonds was given public guarantees in the first years (1985 – 1988)

◆ Transition country examples

- State guarantees in discussion in several countries, so far not implemented (?)

2.4. Tax Exemptions supporting MRS

◆ Anglo-saxon & Europe examples

- US: tax-exempt state agency bonds (targeted)
 - Germany: social housing related mortgage bonds income tax exempt in early 1950s (targeted)
 - Austria: first 4% of interest paid on 'social' mortgage bonds income tax free (targeted).
 - Denmark mortgage bonds issued below par, capital gains tax free.
- Tax instrument mostly targeted/temporary.

◆ Transition country examples

- Czech Republic: income tax exemption for mortgage bond investors, corp. inc tax exemption for issuers
- Slovakia: income tax exemption for mortgage bond investors
- Hungary: final rates of loans refinanced by mortgage bonds fixed by government ->6 – 10% spread subsidy to issuer.
- Poland: none !
- Non-MRS mortgage market subsidies partly SUBSTANTIAL !
Esp. CZ, SLK, HU, plans in PL.

2.5. Regulatory Support Measures for MRS

◆ Anglo-saxon & Europe examples

- US
 - Capital arbitrage for bank selling loan pools and repurchasing agency MBS
 - Agency bonds and MRS not subject to counterparty concentration limits for banks & institutions
- EU: concentration risk privileges for Pfandbriefe over unsecured bonds (UCITS). Investment restrictions for high-yield bonds and equities.

- Denmark: minimum investment requirements for institutions in domestic bonds

◆ Transition Country examples

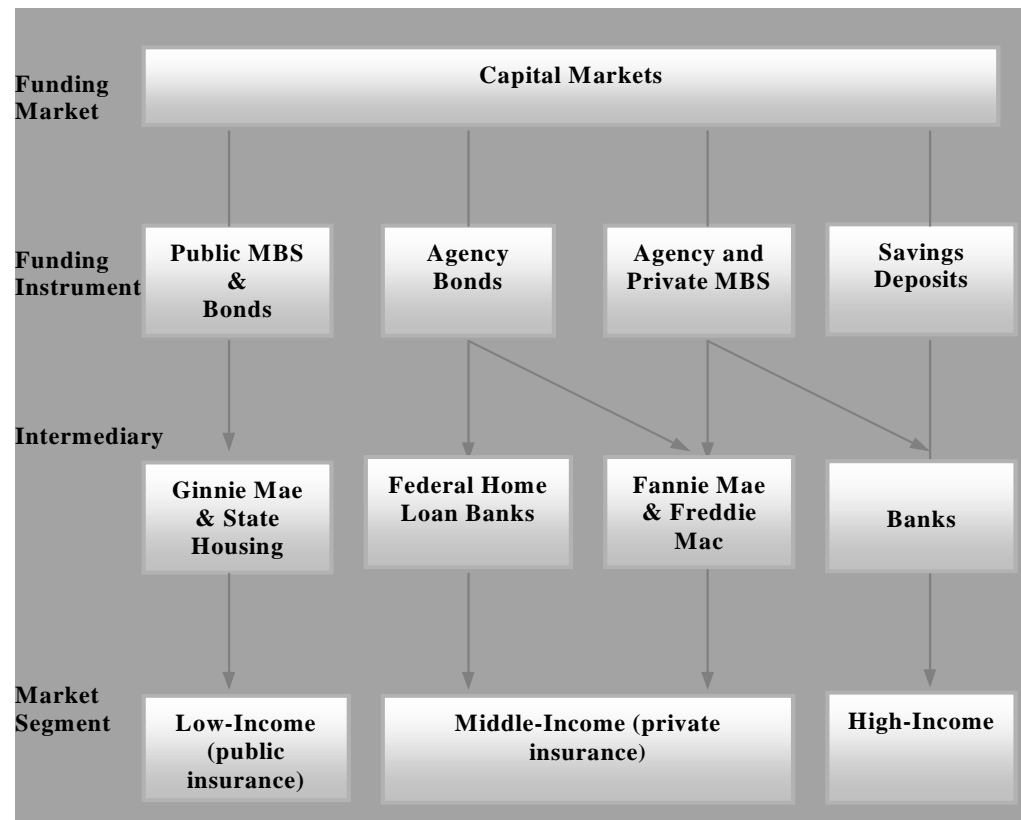
- TB discussed during conference.



Effects & Limits of MRS Support - Case Study US

- ◆ US case meant as example, empirically well documented.
 - ◆ Combination of explicit goal to develop capital markets and political system supportive to middle class subsidies.
- Government-sponsored Capital Market Intermediaries (Financial Guarantors & Portfolio Investors)

US System Overview



GSE: Fannie Mae, Freddie Mac, FHLB. Agency: GNMA, FHA/VA, State housing.

Setup: GSE Advantages over Banks

Direct funding advantages

- ◆ Exemption from federal, state and local income taxes.
- ◆ Exemption from SEC Registration.
- ◆ Treatment as government debt. Securities Act of 1934 defines agencies' debt as government debt. Treasury authorizes issuance, Fed is tax authority.

Indirect funding advantages

- ◆ Line of credit with treasury (2.5 bn USD each)

◆ Special regulatory treatment:

- Non-bank. Special regulator under the housing ministry, OFHEO
- Capital cost advantage for banks and S&Ls selling their portfolios and repurchasing agency MBS. RW reduces from 4% to ~3%. Reason: low capital held by agencies.
- Exemption of banks, S&Ls from Basel concentration risk limits for corporate debt holdings. Similar for institutions. **In 1999, US banks held 11% of their assets or 100% of their capital in agency debt (incl. FHLB, excl. GNMA) !!**
- ◆ **TOO BIG TO FAIL !!**

Setup: Secondary Market Capital Arbitrage

CASES	S&L (1)	GSE	S&L (2)	Total
	capital required in cents/US\$			
S&L swapping portfolio into GSE MBS	0.00	1.50	1.60	3.10
S&L holding loan pool on balance, Basel I (3)	4.00	0.00	0.00	4.00
.. as Case 2, Basel II (3)	3.20	0.00	0.00	3.20

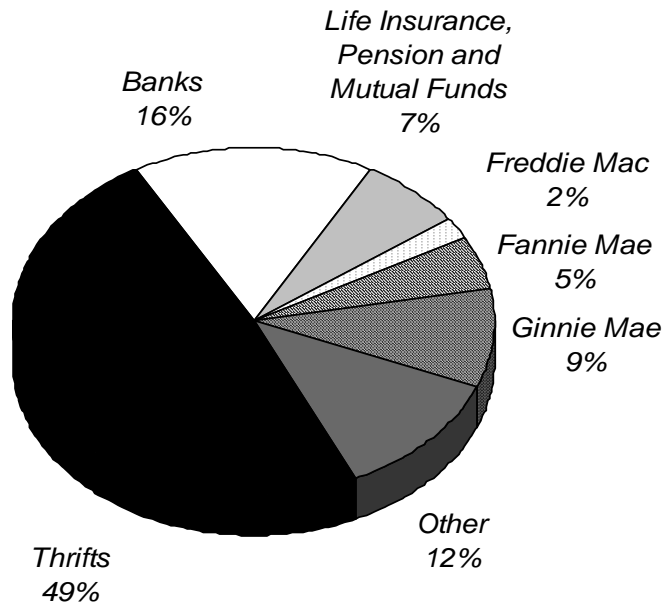
(1) S&L as portfolio investor in mortgages, (2) S&L as buyer of MBS, (3) standardized approach

Note: loans with LTV under 80%

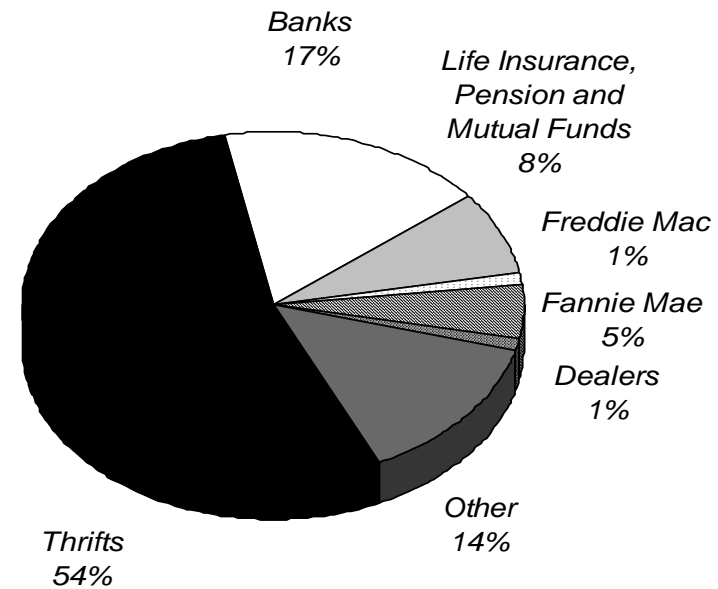
1980

Residential Mortgage Debt Outstanding

Credit Risk



Interest-Rate Risk



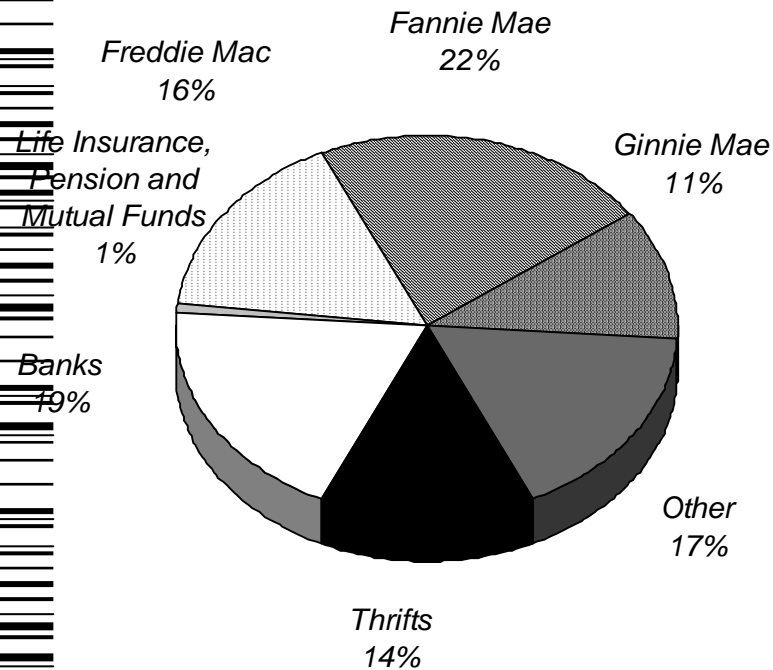
Total Residential Debt Outstanding: \$1,110 Billion

Source: Freddie Mac

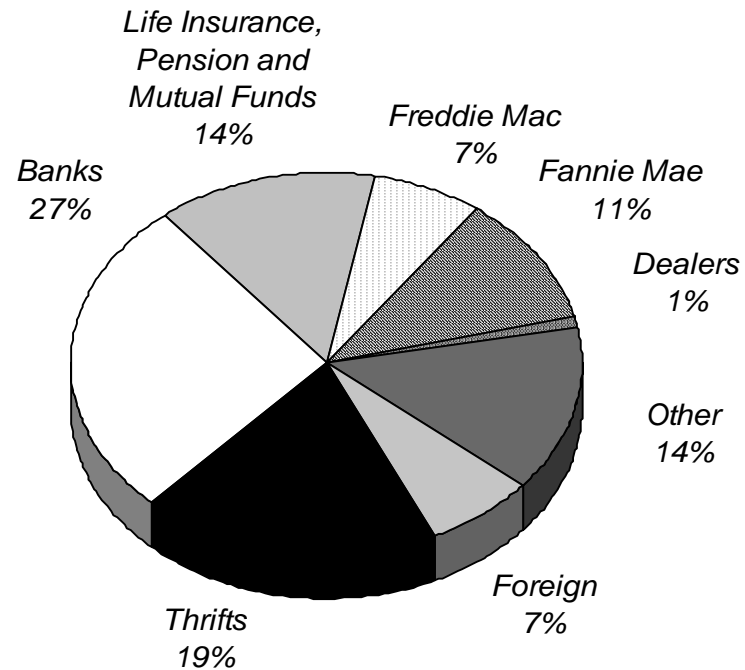
2000

Residential Mortgage Debt Outstanding

Credit Risk



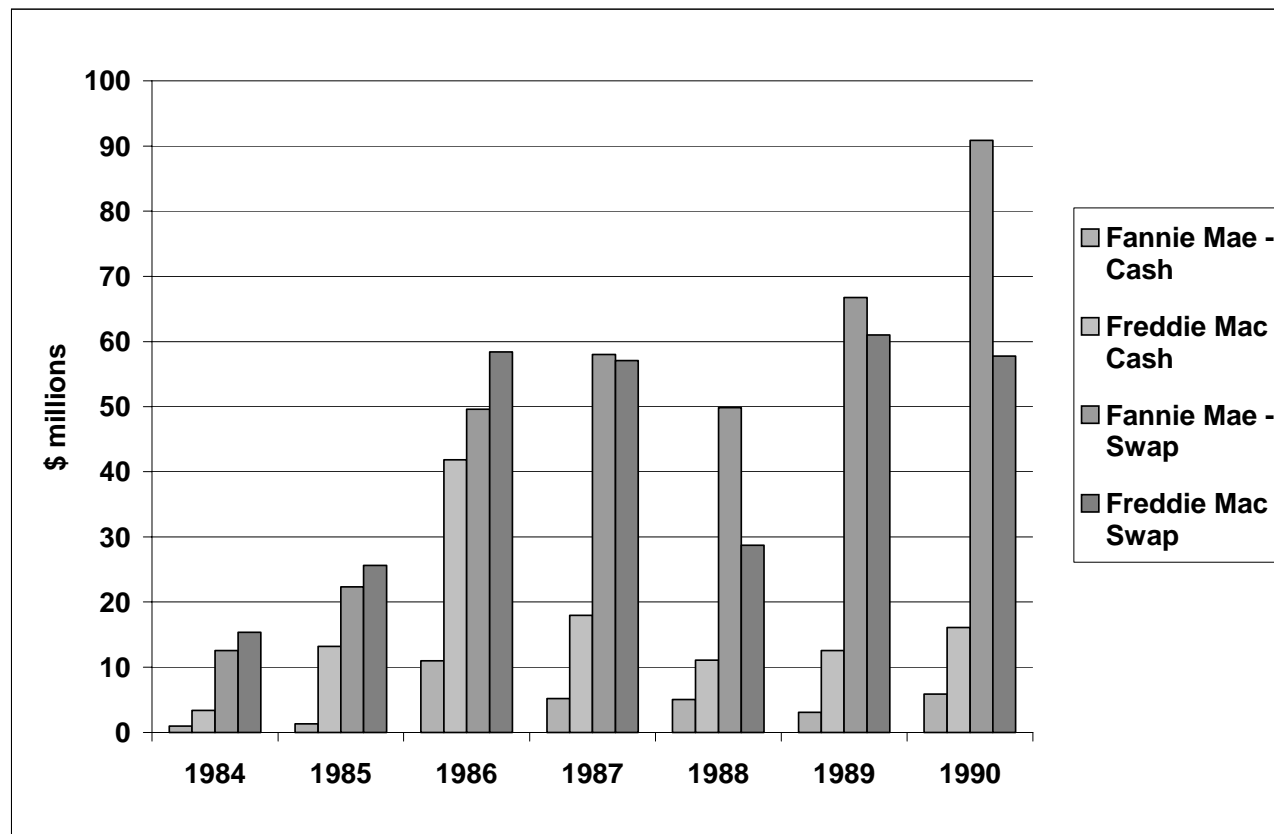
Interest-Rate Risk



Total Residential Debt Outstanding: \$5,622 Billion

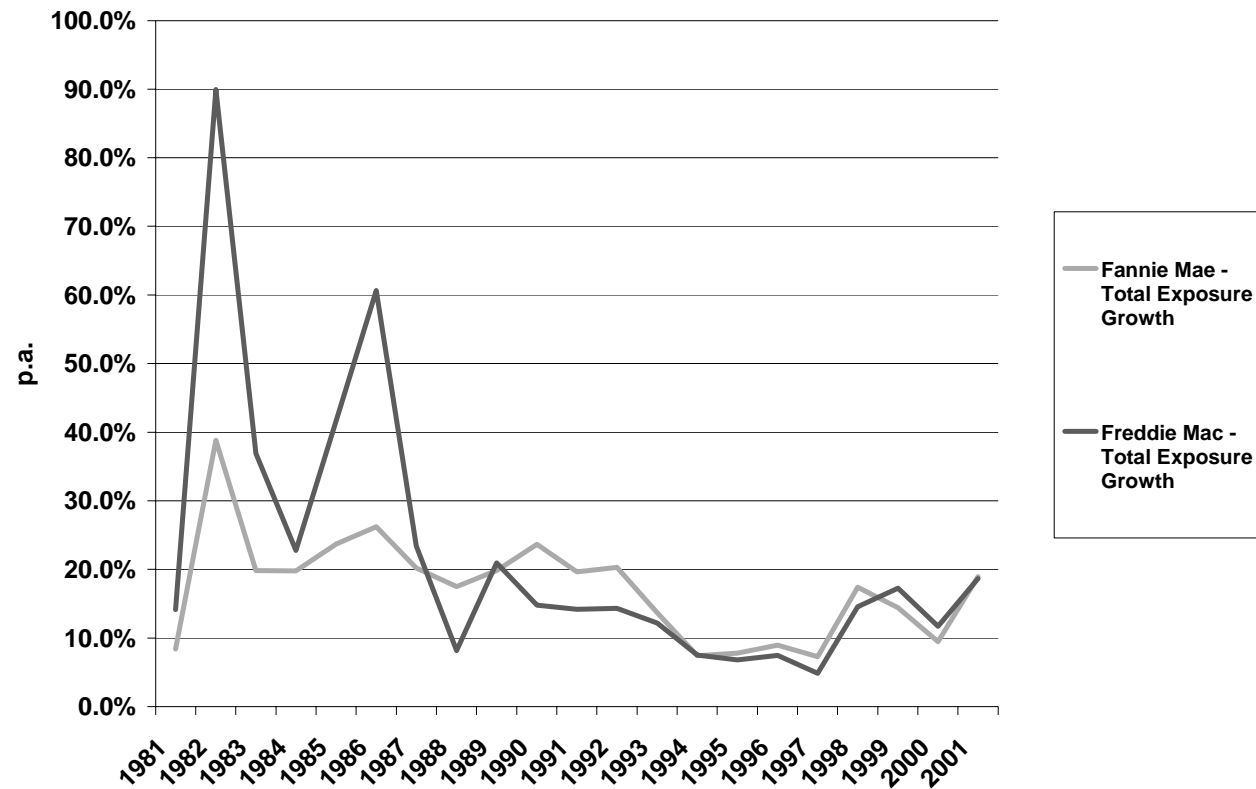
Source: Freddie Mac

Effect: S&Ls and Banks swap their Loans into MBS



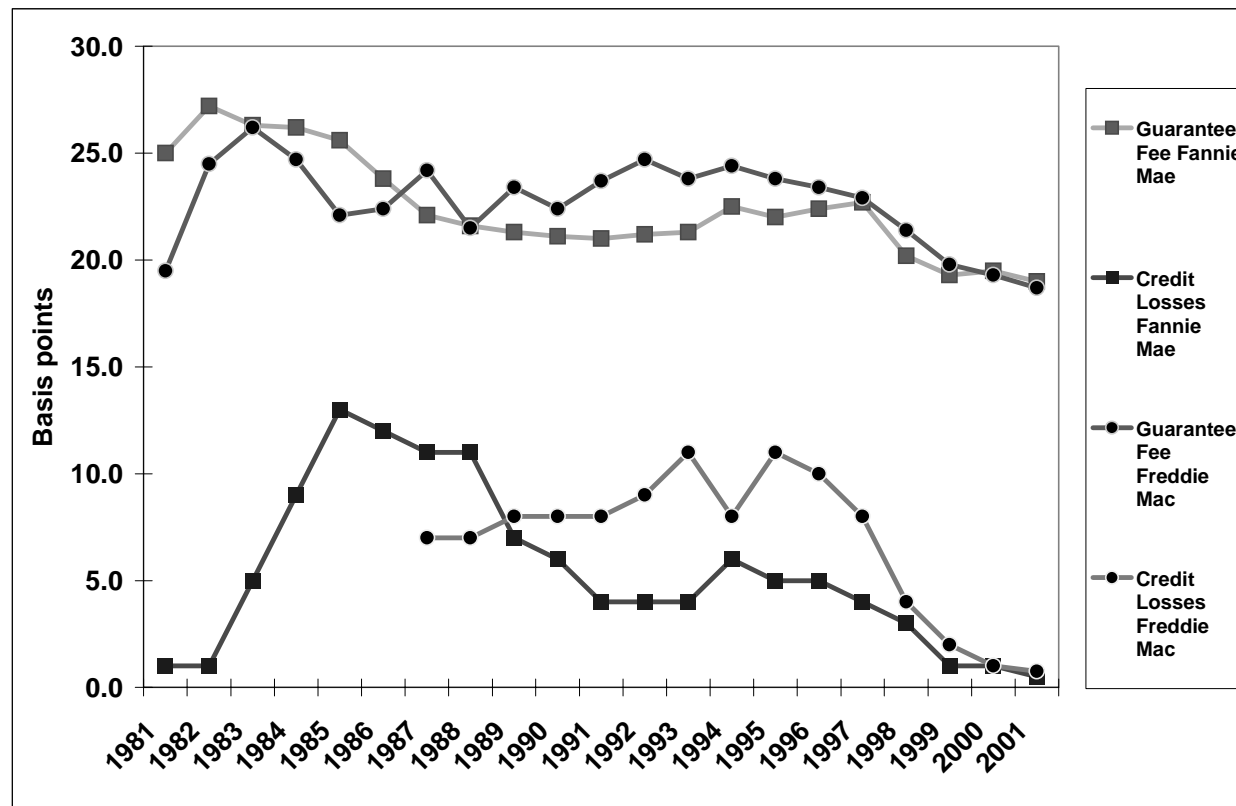
Source: Fabozzi & Modigliani

Effect: Fannie/Freddie Growth

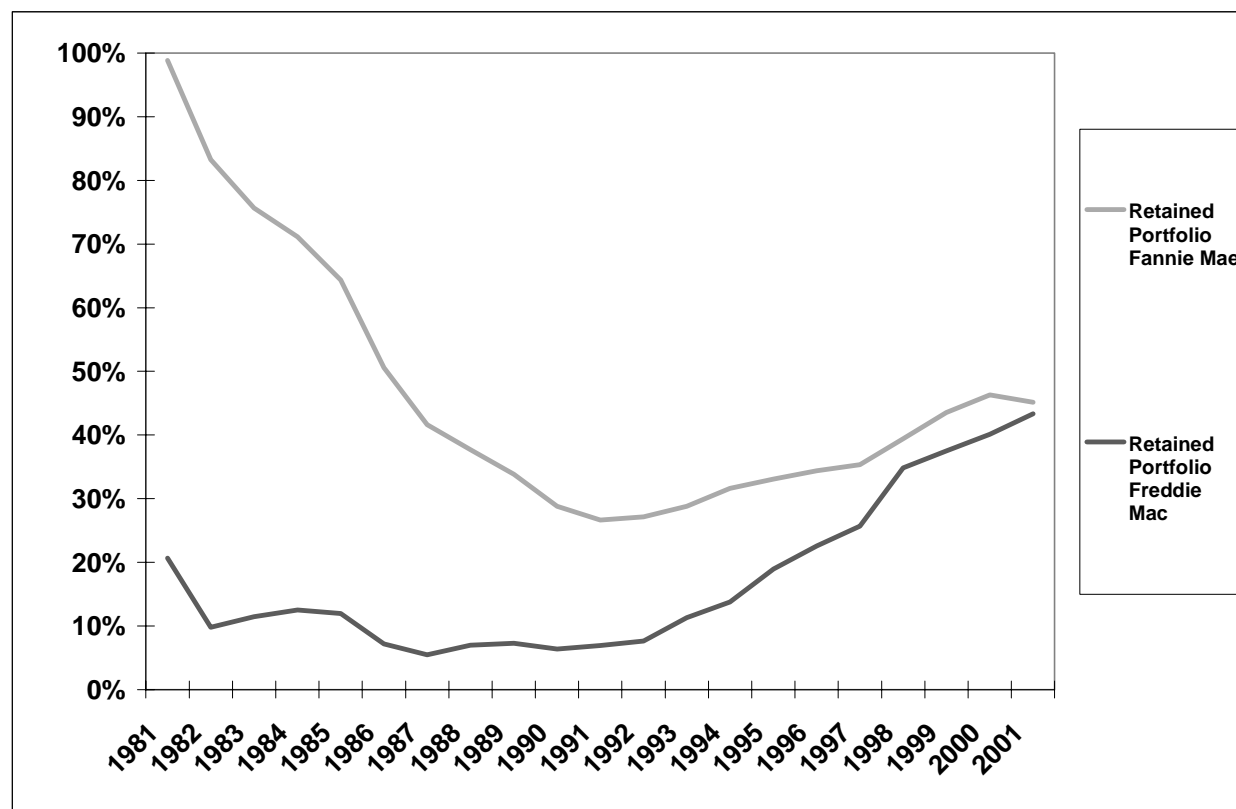


Note: total exposure = retained portfolio + outstanding guaranteed MBS

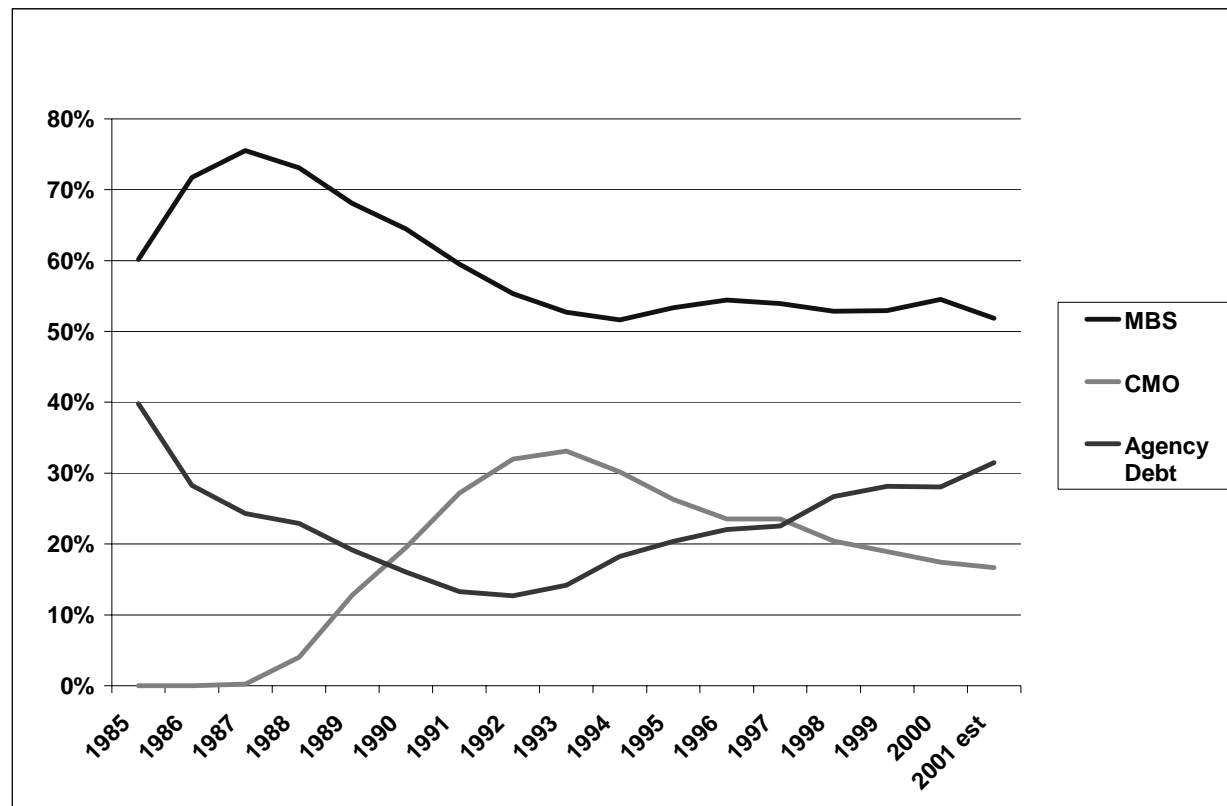
Effect: Fannie/Freddie Guaranty Duopoly



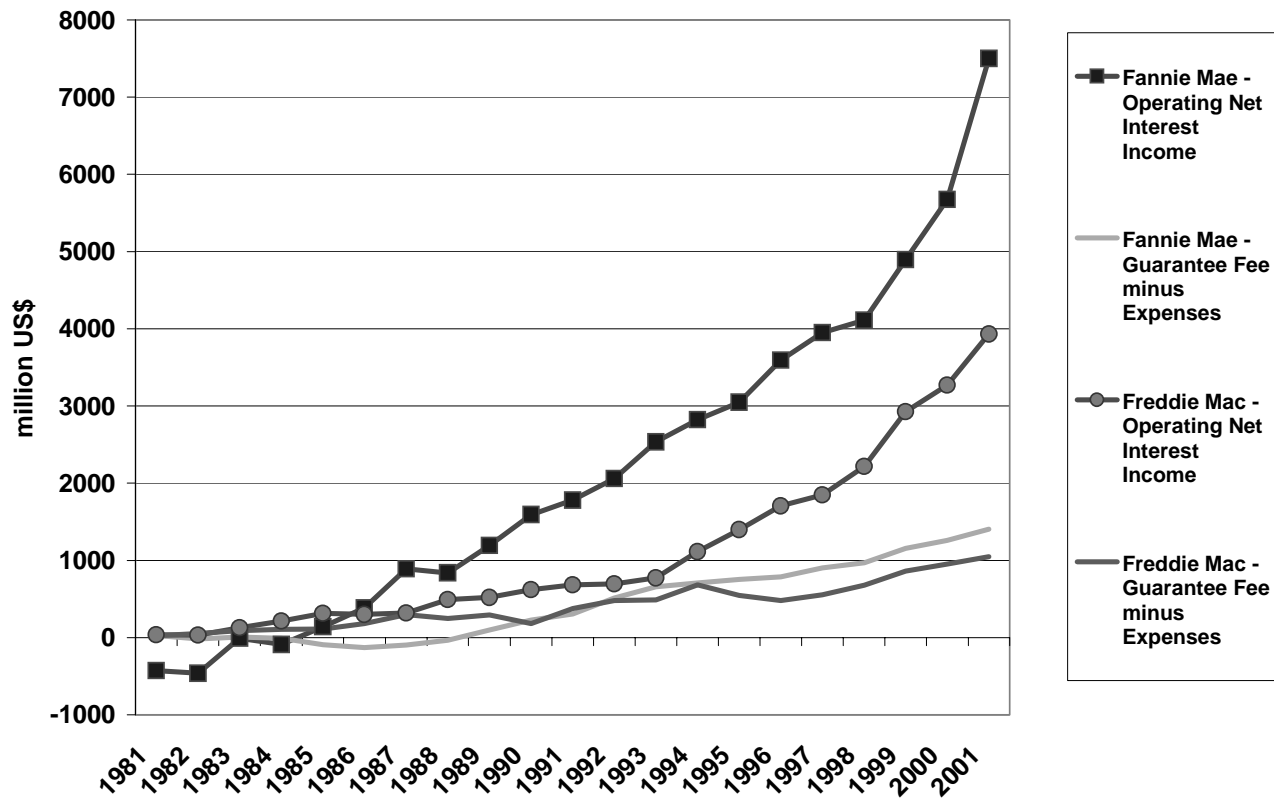
Effect: Fannie/Freddie 'European' Mortgage Banks ?



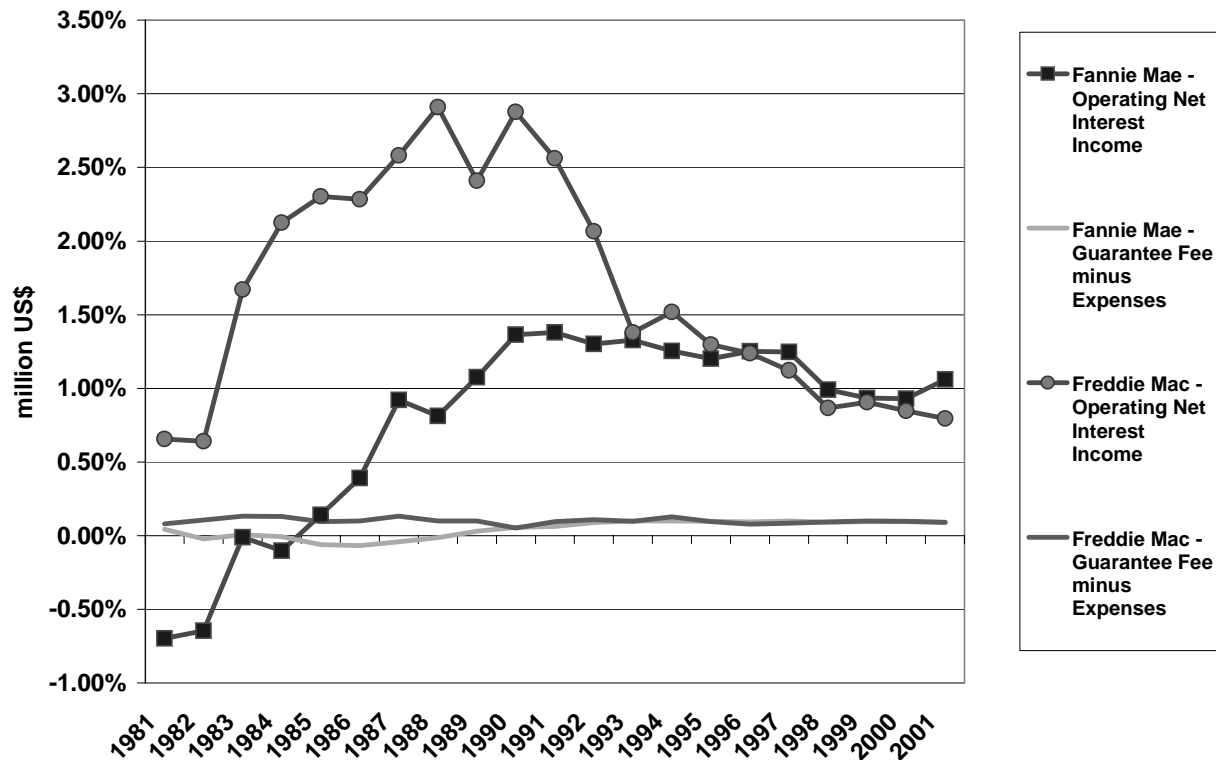
Effect: Fannie/Freddie Changing Funding Mix



Effect: Fannie/Freddie Profitability



Effect: Fannie/Freddie Profitability (2)



Note: Net interest income relative to retained portfolio, net guarantee fee relative to retained portfolio + outstanding MBS

Effect: Fannie/Freddie Balance Sheet

in million US\$, 2000	FANNIE MAE		FREDDIE MAC	
	total	%, mult.	total	%, mult.
BALANCE SHEET				
Retained mortgage portfolio	610,122	90.38%	385,451	83.92%
Other assets	64,950	9.62%	73,846	16.08%
Total assets	675,072		459,297	
Equity	20,838	3.09%	14,837	3.23%
Liabilities	654,234	96.91%	444,460	96.77%
Portfolio leverage		31.4		30.0
Guaranteed MBS outstanding*	706,684		576,101	
Portfolio & guarantee leverage		65.3		68.8
Capital ratio		1.51%		1.43%
CREDIT RISK ANALYSIS				
Retained & guaranteed mortgage credit	1,316,806		961,552	
Protected by third parties**	267,312	20.3%	305,774	31.8%
Credit losses		0.01%		0.01%
Guarantee fee income*	1,350		1,060	
Guarantee fee level		0.193%		0.191%
INTEREST RATE RISK ANALYSIS				
Debt outstanding	642,682		426,682	
Total effective long-term debt > 1yr	545,637	85%	328,545	77%
.. of which callable	234,078	36%	226,696	53%
Derivatives position	319,690		794,225	
Net interest income***	5,670		3,270	
Net interest margin		1.01%		0.84%
PROFITABILITY				
Net income	1,165		663	
Return on equity		25.3%		22.8%
*on MBS not retained in portfolio only				
**by third parties, e.g. insurers. Partial protection included.				
***includes credit spread earned on retained portfolio, % of total assets				



Effect: Fannie/Freddie Funding Advantages & Distribution

- ◆ Numerous studies valuing implicit guarantee since mid-80s.
- ◆ Congressional Budget Office, 2001
 - Debt funding advantage, considering stand-alone rating of AA-: 15 bp (short-term) to 47 bp (long-term). Average 41 bp.
 - MBS guaranty excess profit: 30 bp
 - Advantage based on total credit exposure: 35 bp
 - Passed on to consumer (lower mortgage rates): 25 bp
 - Retained: 10 bp.



Limits: Current & Contingent Fiscal Costs

- ◆ More than 3,000 billion USD outstanding mortgages, or 50% of the total, enjoy public guarantees.
- ◆ Of this, only 620 billion USD, or 11% of the total, are low-income mortgage loans (FHA/GNMA channel).
- ◆ The excess costs for subsidizing middle class loans are in the range of 15 billion USD p.a (direct and indirect funding cost advantage of FHLB, Fannie/Freddie).
- ◆ Value-at-risk for government in case of a default crisis is in the high double-digit billions (e.g. 5% PD, 30% LGD = 45 bn). S&L dimensions (250 bn USD losses) not impossible.
- ◆ This disregards massive tax subsidies (e.g., full mortgage interest deductibility for loans up to 1 million USD per household) and other support.



Limits: ‘Affordable Housing’ Performance Disputed

- ◆ “Agencies overcome credit rationing for minorities and low-income households, overcome redlining”.
 - But: GSEs have underproportional market share with minorities, very-low-income groups and in underserved regions. Shifting support from h/o to rental market more efficient ?
- ◆ “Agencies redistribute public revenues in a state with little redistributive functions”.
 - But: redistribution is regressive, due to conflict between mandate and for-profit operations.
- ◆ “Agencies stimulate the economy during recessions”.
 - But: prepayment trades against 70-100 bp options cost borne by the borrowers. Incomplete market taxes certain groups.

1990s EU Trends Compared

◆ UK

- Elimination of mortgage interest deductibility
- Strengthening of home-owner safety net
- No MRS subsidies.

◆ France

- Privatization of public mortgage lenders
- Strengthening of home-owner safety net
- No MRS subsidies

◆ Germany

- Direct homeowner subsidy reduced after 2002.

- No MRS subsidies.
- Privatization agenda uncompleted.

◆ Denmark

- Mortgage interest deductibility still in place.
- Implicit regulatory support of MRS.

→ General trend:

- Reduction in mortgage subsidies parallel to EMU rate decline and Maastricht.
- Little or no MRS subsidies.
- Active banking privatization agenda.

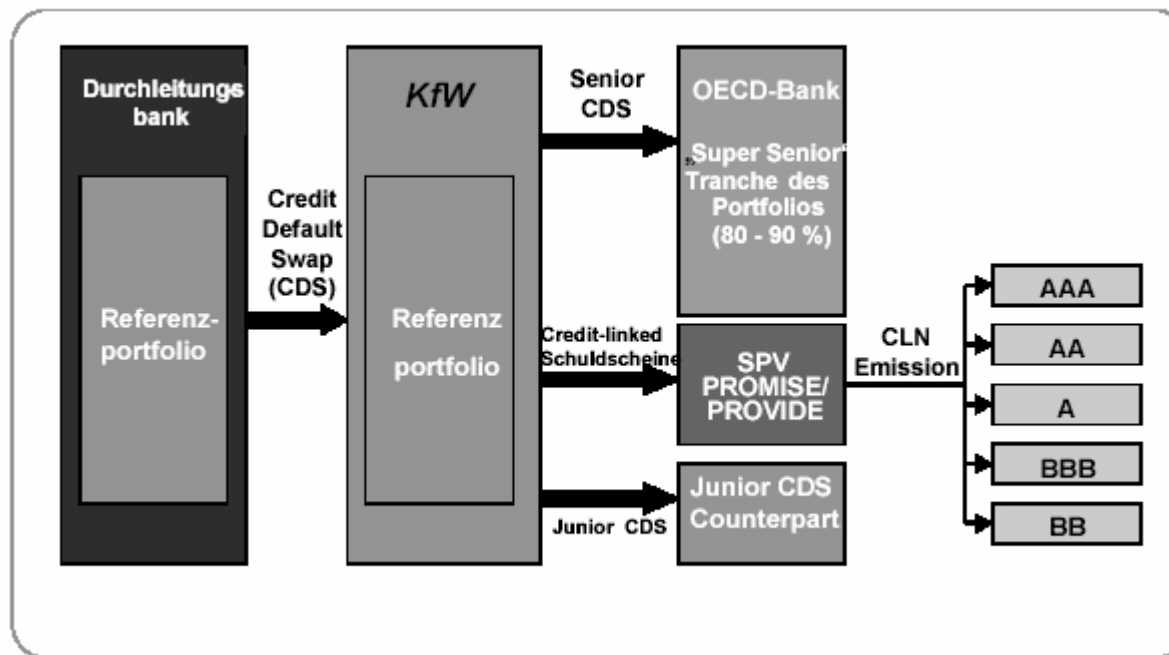
EU Example - KfW 'Second Generation' Support

- ◆ 1. Mortgage bank buys credit guarantee from agency (KfW), loan pool remains on balance.
- ◆ 2. Full faith and credit from German Federal Government allows conversion from mortgage to public loan portfolio (+ lift the 60% limit) → funding with liquid Jumbo
- ◆ 3. KfW hedges itself through sale of Super-Senior Tranche, Credit-linked Notes and Credit Default Swap, based on loan pool risk profile through SPV (PROVIDE).

EFFECTS: gain in liquidity, regulatory arbitrage.

LIMITS/RISK: KfW may decide internally to take credit risk (e.g, retain a subordinate tranche) → on-balance of federal government.
Note that KfW is not regulated under German Banking Act.

Provide/Promise Transaction Structure



Source: KfW

3. Conclusions – Do's and Don'ts of MRS Subsidies

◆ Do's

- Create minimum legal and institutional conditions for the primary mortgage market.
- Reform rental & co-op sectors prior to developing low-income mortgages.
- Promote pre-savings of future borrowers.
- Create an effective bond market infrastructure, e.g.
 - merge exchanges with neighbours
 - limit the specificity of domestic MRS

◆ Don'ts

- Excessively subsidize credit and bonds → high leverage leads to high systemic financial sector risk.
- Reintroduce public banking through the backdoor of non-targeted agencies. Focus agencies on low-income market (EU compatible !).
- Operate with unfunded and mispriced public guarantees.
- Extend support measures beyond infancy phase.
If it doesn't work after 5 years, it never will.



Recommended Readings



- ◆ Congressional Budget Office, „Federal Subsidies and the Housing GSEs“, Congress of the United States: Washington, D.C.: May 2001.
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- ◆ Sinn, H.-W., “Der Staat im Bankwesen - Zur Rolle der Landesbanken in Deutschland”, Verlag C.H. Beck: München, 1997
- ◆ Stanton, T., “Government-Sponsored Enterprises: Mercantilist Companies in the Modern World”, The AEI Press, Washington, D.C.: March 2002.