

**Works of friction?**  
**Originator-sponsor affiliation and  
losses on mortgage backed securities**

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# Why do banks securitize loans?

Assets		Liabilities	
Cash	\$10	Deposits	\$90
Loans	\$90	Capital	\$10

Competition from junk bond markets

Competition from money market mutual funds

When spreads narrow, it is no longer profitable to be a buy-and-hold intermediary. Banks respond by securitizing loans, to more effectively use their limited capital.

# The securitization process

Mortgage **ORIGINATOR** decides to securitize mortgages worth \$20 out of its books



Mortgages are purchased by a **SPONSOR** and put in a bankruptcy remote special purpose vehicle (**SPV**)



## SPV (a shell corporation)

Assets		Liabilities	
Loans	\$20	Senior bonds	\$15
		Mezzanine bonds	\$4
		Equity	\$1

**Mortgage pool**      **Mortgage-backed securities (MBS)**



Mortgage payments are collected by a **SERVICER** and transferred to MBS investors.

# We focus on originators' screening incentives

- An originator's incentive to screen ex ante is related to the extent to which he will be exposed to the ex post performance of the loan.
- Some originators have greater exposure than others:
  - **Originators affiliated with the sponsor**
    - The sponsor holds the SPV equity
    - Reputational concerns
  - **Originators that continue to service the loans after securitization**
    - present value of servicing rights increases with the life of the loan
  - **Sole originators**
    - easier to identify as a poor lender by outside observers
    - lack the incentive to free-ride on information generation of other originators

# Implications for pool performance

- Because screening is associated with better ex post performance, pools that include loans by originators that have greater incentives to screen will perform better.

<b>Deal type</b>	<b>Expected (relative) ex post performance</b>
Originators are affiliated with the sponsor	+
Originators retain servicing rights	+
Originator concentration	+

# Implications for MBS design and pricing

- If investors recognize that some originators screen while others don't, they will require higher yields and greater credit protection when investing in pools originated by lenders with weaker incentives to screen.

<b>Deal type</b>	<b>Expected yield &amp; credit enhancement (relative)</b>
Originators are affiliated with the sponsor	-
Originators retain servicing rights	-
Originator concentration	-

# Sample

- 526 Alt-A residential MBS deals completed between 2003 and 2007.
- We exclude private placements, NIM deals, deals that include second-lien mortgages, as well as deals without information on originator identities.
- Information on mortgage characteristics as well as originator, sponsor, and servicer identities and shares from the prospectus
- Information on pool performance and deal structure (e.g., yields and credit protection) from ABSnet
- Information on geographic location of mortgages in the pool from Bloomberg
- Information on house price changes from the Federal Housing Finance Agency (OFHEO)

# Originator characteristics

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Variable:	Mean
Fraction of the pool originated by the sponsor (PCTAFF)	0.70
Dummy: Pool is originated by the sponsor (D_AFF)	0.56
Dummy: Pool is originated by lenders affiliated and unaffiliated with the sponsor (D_MIXED)	0.24
Dummy: Pool is originated by lenders unaffiliated with the sponsor (D_AFF)	0.20
Number of originators (ORNUM)	2.62
Originator concentration (i.e., sum of squared originator shares) (ORCONC)	0.71
Fraction of the pool originated by depository originators (PCTDEP)	0.71
Fraction of the pool originated by depository originators affiliated with the sponsor (PCTAFFDEP)	0.51
Fraction of the pool originated by depository originators unaffiliated with the sponsor (PCTAFFDEP)	0.19
Fraction of the loan serviced by the originators (PCTORSVC)	0.78

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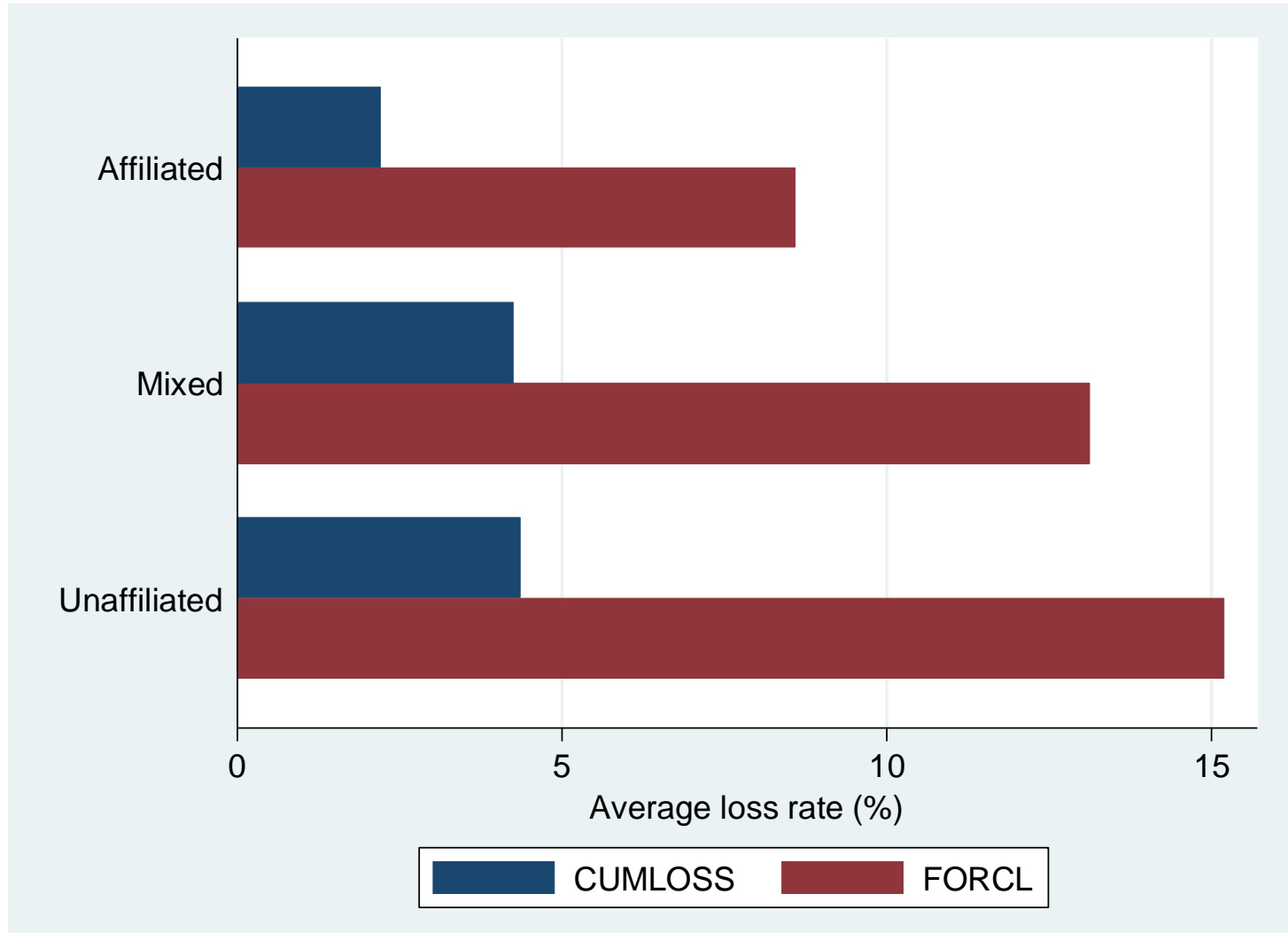
# Pool performance as of 8/2009

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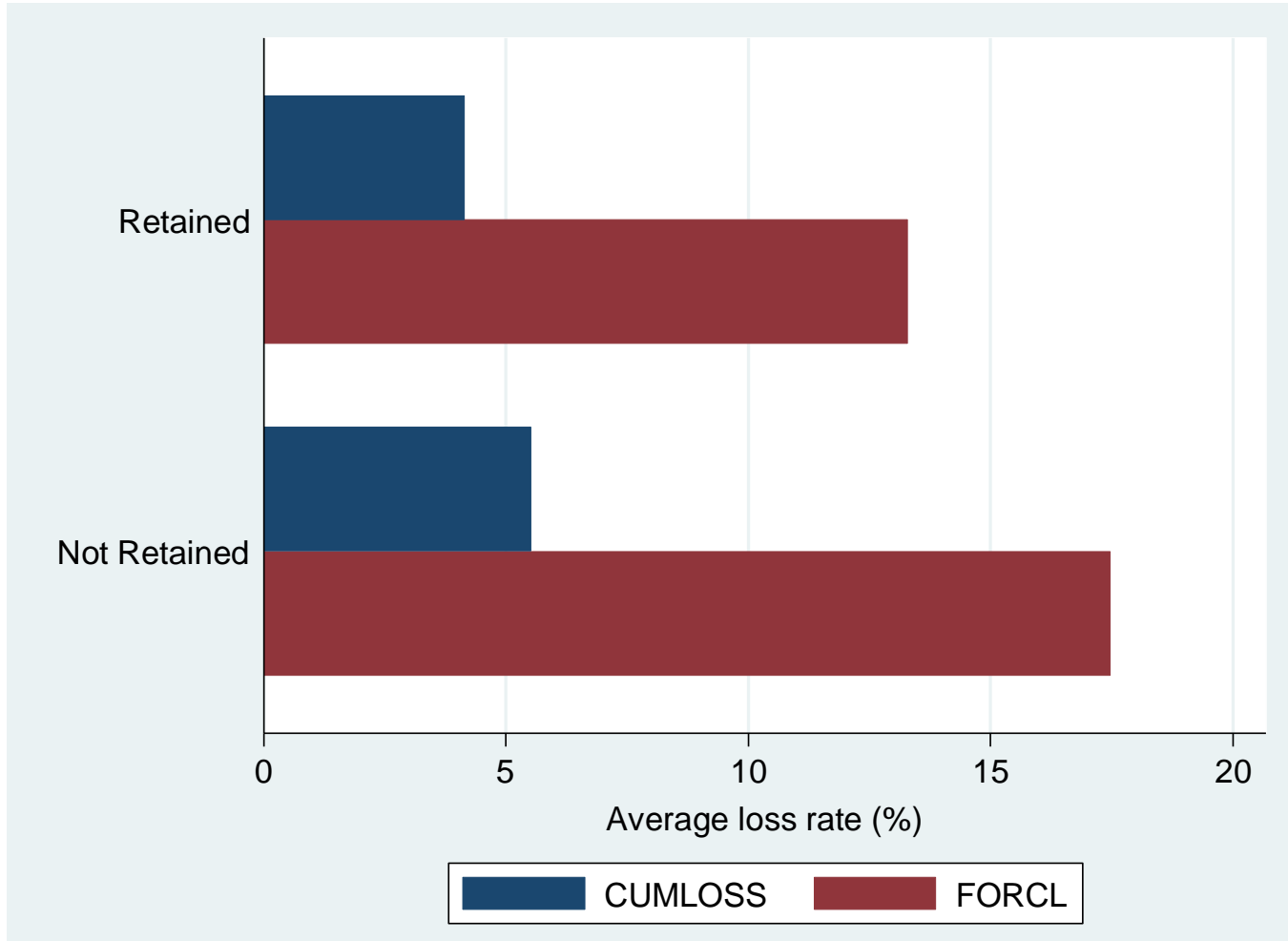
Variable:	Mean
<i>Realized losses:</i>	
Losses on principal suffered to date net of recoveries / Original pool balance (CUMLOSS)	0.031
<i>Pipeline losses:</i>	
Face value of all loans in foreclosure / End of month pool balance (FORCL)	0.110

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# Univariate results: Affiliation

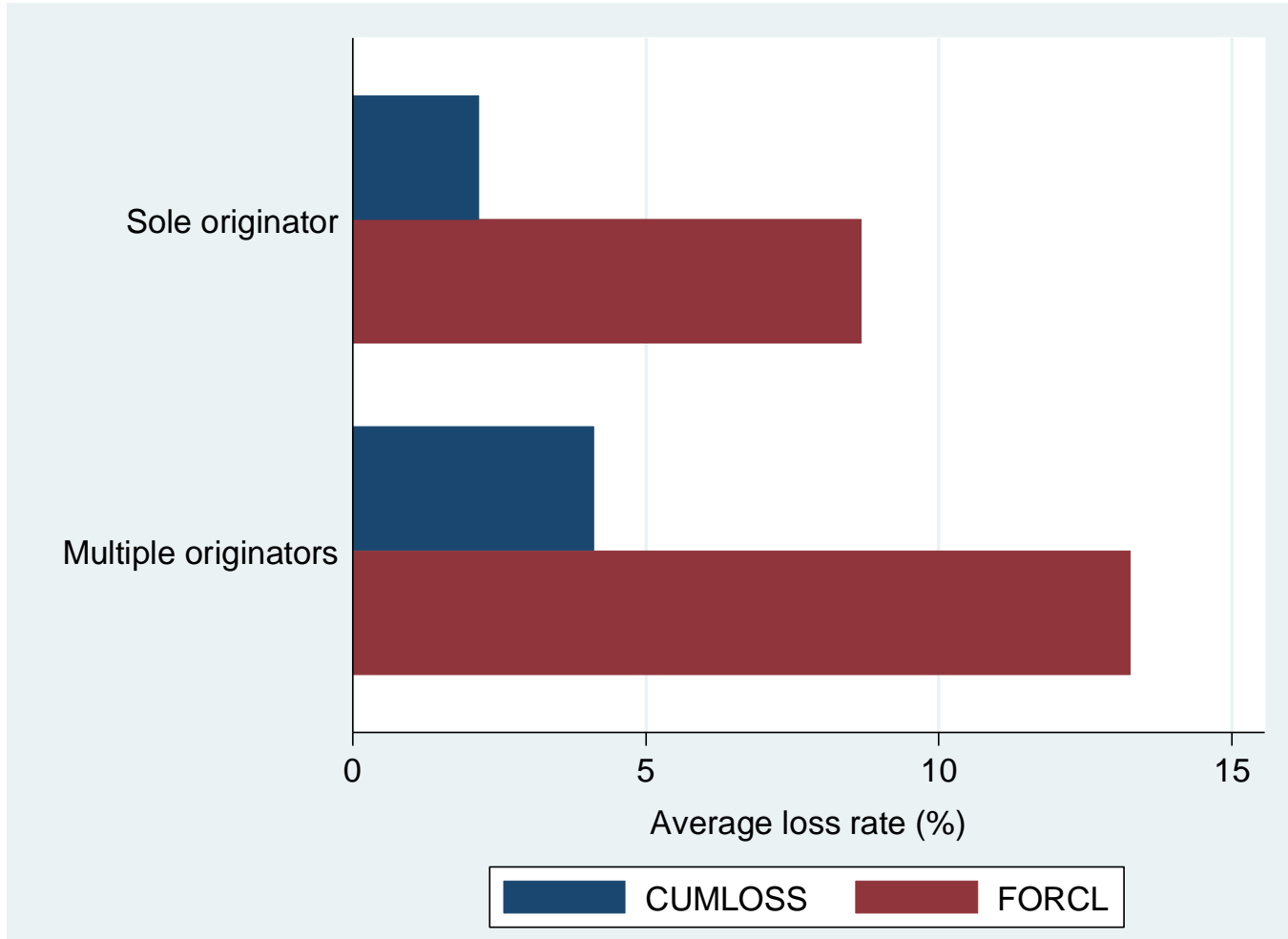


# Univariate results: Servicing rights



\* Affiliated deals are excluded from this analysis because originators retain servicing rights in all affiliated deals.

# Univariate results: Concentration



\* Affiliated deals are excluded from this analysis because all but one affiliated deals are sole originator deals.

# Multivariate results: Affiliation & CUMLOSS (%)

Explanatory variables	(1)	(2)	(3)	(4)
PCTAFF	-0.652 <sup>***</sup> (-2.90)	—	-0.804 <sup>**</sup> (-2.48)	—
D_UNAFF	—	0.759 <sup>***</sup> (3.15)	—	0.869 <sup>**</sup> (2.37)
D_MIXED	—	0.329 (1.42)	—	0.341 (1.27)
Other controls:				
Deal characteristics	Yes	Yes	Yes	Yes
Vintage fixed effects	Yes	Yes	Yes	Yes
Ex post house price change	Yes	Yes	Yes	Yes
Sponsor fixed effects	No	No	Yes	Yes
Number of observations	474	474	474	474
Adjusted $R^2$	71.0%	71.0%	77.7%	77.6%

\*\*\*, \*\*, and \* denote that the coefficient estimate is significantly different from zero (two-tailed) at the 1%, 5%, and 10% level, respectively.

# Multivariate results: Affiliation & FORCL (%)

Explanatory variables	(1)	(2)	(3)	(4)
PCTAFF	-3.774 <sup>***</sup> (-8.70)	—	-4.211 <sup>***</sup> (-6.28)	—
D_UNAFF	—	3.631 <sup>***</sup> (7.70)	—	3.564 <sup>***</sup> (4.61)
D_MIXED	—	0.549 (1.21)	—	1.391 <sup>**</sup> (2.45)
Other controls:				
Deal characteristics	Yes	Yes	Yes	Yes
Vintage fixed effects	Yes	Yes	Yes	Yes
Ex post house price change	Yes	Yes	Yes	Yes
Sponsor fixed effects	No	No	Yes	Yes
Number of observations	475	475	475	475
Adjusted $R^2$	78.7%	78.1%	81.2%	80.4%

\*\*\*, \*\*, and \* denote that the coefficient estimate is significantly different from zero (two-tailed) at the 1%, 5%, and 10% level, respectively.

# Does the impact of affiliation on performance increase as uncertainties regarding loan quality increase?

Affiliation measure	CUMLOSS (%)			FORCL (%)		
	LIMDOC below median	LIMDOC above median	<i>t</i> -stat for difference	LIMDOC below median	LIMDOC above median	<i>t</i> -stat for difference
PCTAFF	-0.500 <sup>*</sup> (-1.94)	-0.936 <sup>***</sup> (-3.04)	2.08 <sup>**</sup>	-2.234 <sup>***</sup> (-3.71)	-4.700 <sup>***</sup> (-7.52)	2.77 <sup>***</sup>
UNAFF	0.023 (0.07)	1.235 <sup>*</sup> (1.72)	2.50 <sup>**</sup>	1.155 <sup>***</sup> (3.55)	4.495 <sup>***</sup> (6.68)	2.90 <sup>***</sup>

We use <sup>\*\*\*</sup>, <sup>\*\*</sup>, and <sup>\*</sup> to denote that the coefficient estimate or the difference between the coefficient estimates of two sub-groups is significantly different from zero (two-tailed) at the 1%, 5%, and 10% level, respectively.

# Is the “affiliation effect” unique to the 2006 and 2007 period? Performance as of July 2006 for deals between 2003 and 2005

Explanatory variables	CUMLOSS (%)		FORCL (%)	
	(1)	(2)	(3)	(4)
PCTAFF	-0.031 <sup>*</sup> (-1.88)	—	-0.546 <sup>***</sup> (-3.70)	—
D_UNAFF	—	0.036 <sup>**</sup> (2.11)	—	0.526 <sup>***</sup> (3.48)
D_MIXED	—	0.024 (1.40)	—	0.036 (0.24)
Other controls:				
Deal characteristics	Yes	Yes	Yes	Yes
Vintage fixed effects	Yes	Yes	Yes	Yes
Ex post house price change	Yes	Yes	Yes	Yes
Sponsor fixed effects	Yes	Yes	Yes	Yes
Number of observations	140	140	141	141
Adjusted R <sup>2</sup>	51.6%	51.7%	60.5%	60.1%

\*\*\*, \*\*, and \* denote that the coefficient estimate is significantly different from zero (two-tailed) at the 1%, 5%, and 10% level, respectively.

# Is affiliation a proxy for depository originators with specialized screening abilities?

Explanatory variables	CUMLOSS (%)		FORCL (%)	
	All deals	Deals of depository sponsors	All deals	Deals of depository sponsors
	(1)	(2)	(3)	(4)
PCTDEP	-0.800** (-2.33)	—	-0.523 (-0.72)	—
PCTAFFDEP	—	-1.676*** (-3.66)	—	-3.537*** (-3.05)
PCTUNAFFDEP	—	0.604 (1.02)	—	1.830 (1.22)
D_UNAFF	1.034*** (2.78)	—	3.671*** (4.66)	—
D_MIXED	0.346 (1.29)	—	1.394** (2.46)	—
Other controls	Yes	Yes	Yes	Yes
Sponsor fixed effects	Yes	Yes	Yes	Yes
Number of observations	474	320	475	321
Adjusted $R^2$	77.8%	78.9%	80.4%	84.3%

\*\*\*, \*\*, and \* denote that the coefficient estimate is significantly different from zero (two-tailed) at the 1%, 5%, and 10% level, respectively.

# Originator concentration, originator-servicer affiliation, and deal performance for unaffiliated and mixed deals

Explanatory variables	CUMLOSS (%)			FORCL (%)		
	(1)	(2)	(3)	(4)	(5)	(6)
ORNUM	0.109*	—	—	0.729***	—	—
	(1.85)	—	—	(4.85)	—	—
ORCONC	—	-1.312**	—	—	-7.696***	—
	—	(-2.32)	—	—	(-5.72)	—
PCTORSVC	—	—	-1.053**	—	—	-0.236
	—	—	(-2.37)	—	—	(-0.22)
D_MIXED	-0.701**	-0.727**	-0.794**	-2.100***	-2.425***	-1.907**
	(-2.26)	(-2.35)	(-1.96)	(-2.64)	(-3.11)	(-1.98)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Sponsor fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	205	205	203	205	205	203
Adjusted $R^2$	82.4%	82.6%	77.8%	77.7%	78.7%	74.7%

\*\*\*, \*\*, and \* denote that the coefficient estimate is significantly different from zero (two-tailed) at the 1%, 5%, and 10% level, respectively.

# Evidence so far

- Deals perform relatively better ex post if the originator's distance from loss is shorter. This is particularly true when there is greater uncertainty regarding the borrowers' creditworthiness (where screening is more important).
- The evidence points to the importance of originators' screening incentives on deal performance.
- The evidence also suggests that originator screening incentives were related to deal performance before the economy-wide decline in house prices and the credit crisis, but the incentive effect was largely masked by credit expansion and house price increases.

# Do investors recognize the variability in originators' screening incentives?

- It's been argued that the originate-to-distribute model of lending (i.e., securitization) is flawed because it reduces lenders' incentive to screen.
- However, as Gorton (2009) points out, the other part of the argument that securitization promoted lax lending has to be that pool sponsors and ultimately investors systematically misunderstood or ignored how securitization affects the incentives of originators and ultimately the risk of the underlying mortgages.
- Therefore, we next examine whether investors require higher yields and greater credit protection in deals with greater originator moral hazard.

# Deal structure variables

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Variable:	Mean
Weighted average yield (%) of mortgage-backed bonds issued against the pool (YIELD)	6.6
% of bonds issued against the pool and rated AAA by S&P (PCTAAA)	94.4
Dummy: Overcollateralization (i.e., pool value exceeds the value of bonds) (D_OC)	0.35
Overcollateralization target (= $100 * ((\text{pool value} / \text{value of bonds}) - 1)$ ) (OCTARGET)	0.27

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# Deal structure regressions

Distance-to-loss measures	Deal structure variables			
	YIELD (1)	PCTAAA (2)	D_OC (3)	OCTARGET (4)
PCTAFF	-0.100 <sup>**</sup> (-2.14)	0.651 <sup>***</sup> (3.49)	-0.926 <sup>***</sup> (-4.36)	-0.119 <sup>**</sup> (-2.38)
D_UNAFF	0.099 <sup>**</sup> (2.00)	-0.826 <sup>***</sup> (-4.14)	0.869 <sup>***</sup> (3.84)	0.089 <sup>*</sup> (1.66)
D_MIXED	0.126 <sup>***</sup> (2.61)	0.208 (1.08)	0.852 <sup>***</sup> (4.14)	0.148 <sup>***</sup> (2.86)
ORCONC	-0.154 <sup>**</sup> (-2.53)	0.476 <sup>**</sup> (1.97)	-1.053 <sup>***</sup> (-4.08)	-0.172 <sup>***</sup> (-2.70)
PCTORSVC	0.086 (1.33)	1.026 <sup>***</sup> (3.54)	0.251 (0.91)	0.151 <sup>*</sup> (1.78)

We use <sup>\*\*\*</sup>, <sup>\*\*</sup>, and <sup>\*</sup> to denote that the coefficient estimate is significantly different from zero (two-tailed) at the 1%, 5%, and 10% level, respectively.

Note: For brevity, we report the coefficient estimates and *t*-statistics associated with the distance to loss measures although the models include controls for deal characteristics and vintage.

# Conclusions

- Originators with greater distance from default are less likely to screen the loans that they originate. Consequently, these loans perform relatively poorly.
- Investors recognize this incentive problem on behalf of mortgage originators and request higher yields and greater credit protection in deals in which the moral hazard problem is likely to be more severe. It is not clear, however, whether the problem is correctly reflected into prices.
- Recent policy proposals to force originators to hold bigger stakes in the securitized pools that include the loans they had originated and disclose the full extent of their exposure to the pool's losses are likely to be useful.