THE IMPACT OF THE ORIGINATE-TO-DISTRIBUTE MODEL ON BANKS BEFORE AND DURING THE FINANCIAL CRISIS

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Mortgage sales

I examine the role of mortgage sales by banks.

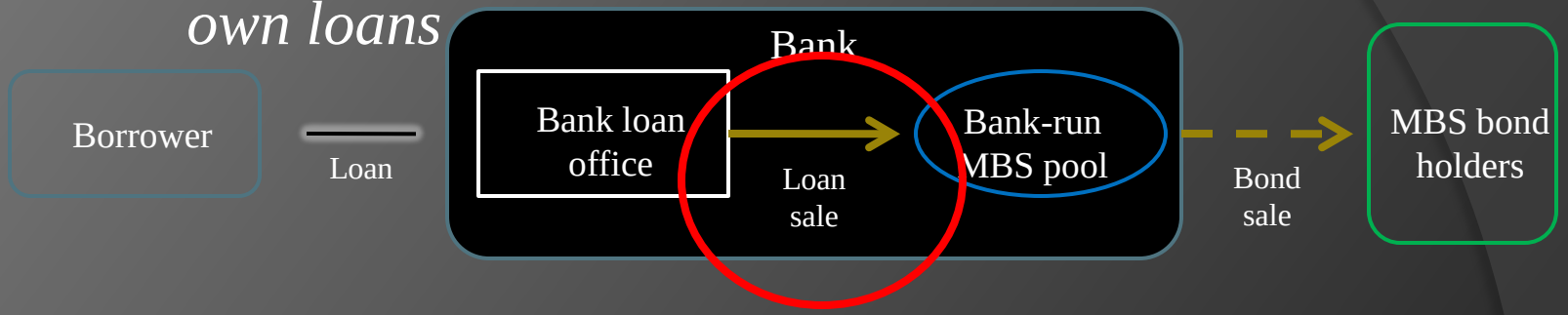
- Some place part of the blame for the recent financial crisis on mortgage markets. Mortgage lending, especially subprime, was aided by the rapid expansion of securitization. Banks were able to sell mortgages because they were easy to securitize.

- Banks often sell the mortgages they originate, but only 5-10 U.S. commercial banks issue bonds backed by mortgages (that is, securitize mortgages).

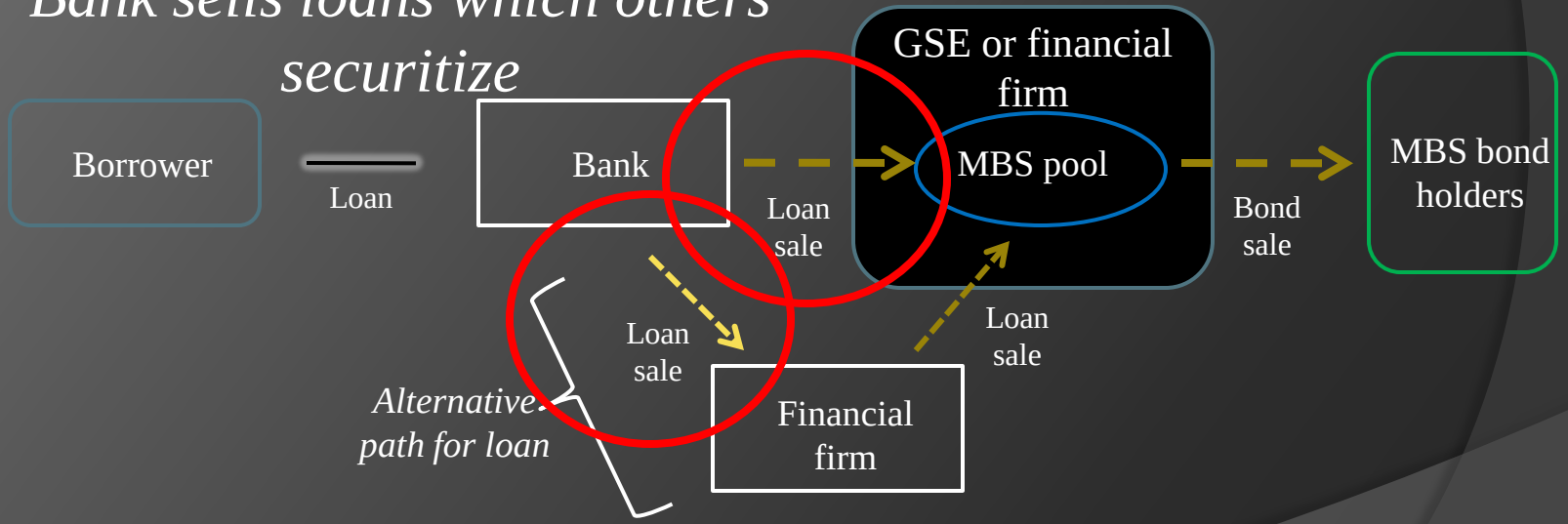
➢ I focus on mortgage sales by the originating bank (and not on the forming or sale of securitized bonds).

Loan sales vs. securitization

Bank securitizes its own loans



Bank sells loans which others securitize



Loan sales

There are many reasons why banks might sell loans:

- To reduce expected regulatory costs (Pennacchi, 1988) or reduce expected bankruptcy costs (Gorton and Souleles, 2006).
    - Reallocating risk (Benveniste and Berger, 1987).
- Regulatory arbitrage (Martin-Oliver and Saurina, 2007; Minton, et al., 2004).
- Raise capital (Calomiris and Mason, 2004).
- Take advantage of investors (Keys, et al., 2010; Purnanandam, 2010).
- As a line of business – the originate-to-distribute (OTD) model (Purnanandam, 2010).

Data

To test the use and impact of mortgage sales I use:

- Info on mortgage sales: HMDA
- Balance sheet data: Call Reports
- Stock market data: CRSP

I initially focus on banks in the 1996-2006 period before the start of the financial crisis.

- The sample is limited to banks with some mortgage activity.
- Banks also must have traded stock (so most small banks are not in the sample).

➢ The final sample has 460 banks (using parent level for banks; unbalanced panel).

Key mortgage flow data

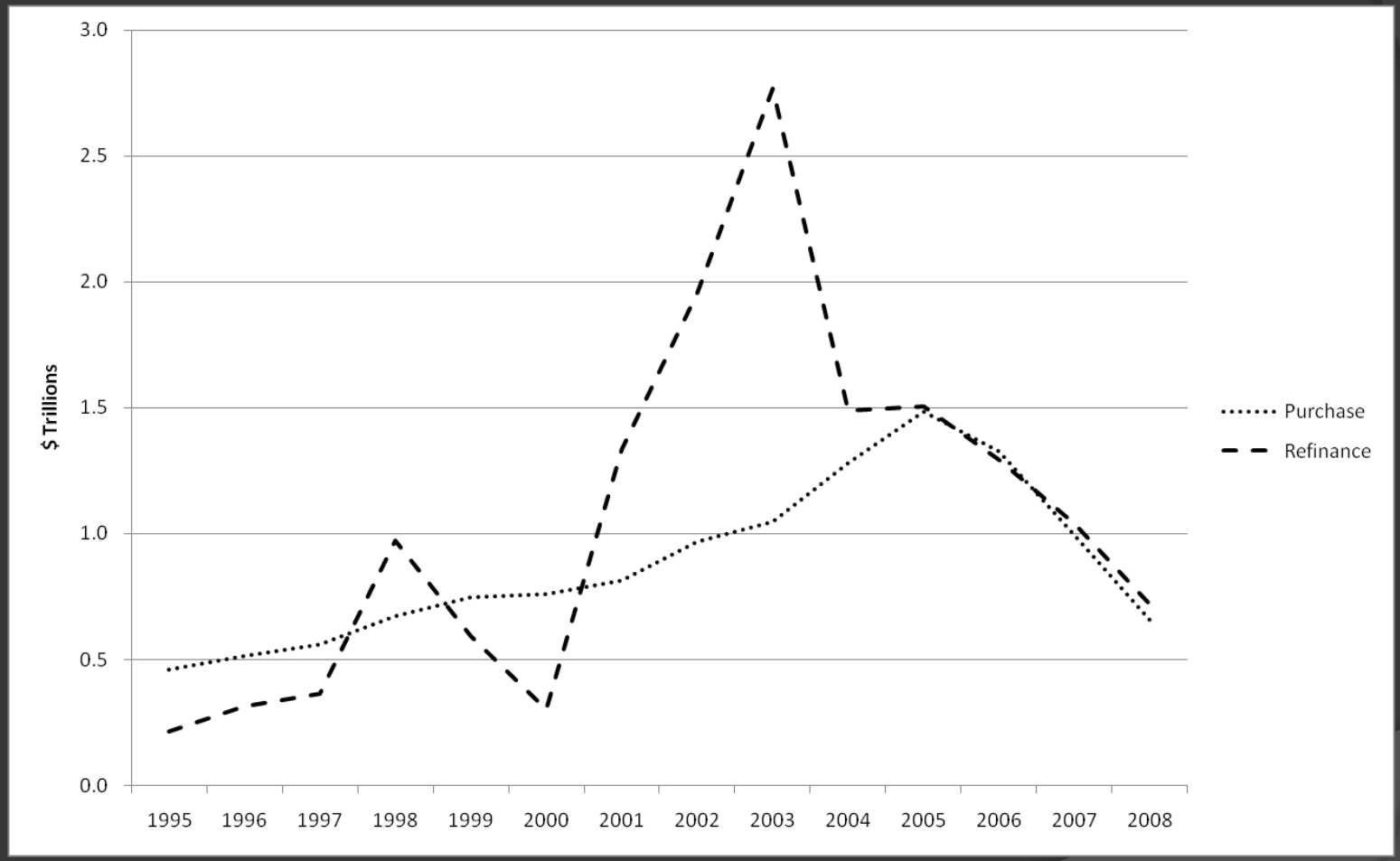
- Slightly under half (45%) of mortgages originated by banks in my sample were sold in 1996-2006.
- The average sales per bank per year was $2.4 billion, but the median sales per bank per year was $0.1 billion.
- I focus on SOLD which is mortgages sold/total assets.
  - SOLD has a mean of 0.12 (median = 0.04).

Purchase vs. refinancing

Mortgages were used either to purchase a new home (PURCH) or to refinance an existing mortgage (REFI).

- Purchases grew steadily in the pre-crisis period while refis had boom and bust periods.

Purchase vs. refinancing



Data on mortgages (Table 1): mortgage flow / total assets

Ranked by SOLD:	SOLD	PURCH SOLD	REFI SOLD	PORT	TA ($ bil)	STK RET NET
Below median	1.99%	0.82%	1.17%	3.62%	29.90	2.26%
Median-75th pctile	6.76%	2.86%	3.90%	3.72%	39.80	3.72%
75-90th pctile	14.48%	6.30%	8.18%	4.57%	13.60	3.71%
90-100th pctile	67.75%	32.34%	35.45%	5.77%	29.80	5.95%
Sample mean	11.71%	5.34%	6.38%	4.01%	28.60	3.22%

Effect of mortgage flow on bank portfolios (Tables 3-4)

An increase in mortgage sales leads to:

- A minimal increases in residential loans on balance sheet.
- No significant impact on future non-performing loans.
- Little impact on non-mortgage assets (except MBS, which fall).
  - Consistent with a pipeline effect as part of an OTD model.
  - Not consistent with other reasons such as signaling models (e.g., Greenbaum-Thakor, 1987) or cherry picking models.

Effect of mortgage sales on profit (Table 5)

VARIABLES	(1) ΔSTK RET	(2) ΔSTK RET
ΔSOLD	0.217***	
ΔPORT	-0.291	
ΔPURCH SOLD		-0.054
ΔREFI SOLD		0.279***
ΔPURCH PORT		-0.379
ΔREFI PORT		0.207
ΔSECUR	0.287	0.290

Effect of mortgage sales on profit

Sold mortgages increase profit, but this increase is due to refis.

- Do some banks use refi booms to increase market share?
  - If so, market share gains should be mostly temporary.

Are increases in refi mortgage sales permanent? (Table 7)

	REFI SOLD	PURCH SOLD	REFI PORT	PURCH PORT
1-year persistence	0.837	0.907	0.760	0.885
2-year persistence	0.573	0.855	0.591	0.775
3-year persistence	-0.365	0.755	0.466	0.924
4-year persistence	-0.160	0.960	0.480	0.968

Do loans in refi booms look different from loans in other periods? (Table 8)

VARIABLES	(1) ΔREFI SOLD LOAN/INC	(2) ΔREFI PORT LOAN/INC	(3) ΔPURCH SOLD LOAN/INC	(4) ΔPURCH PORT LOAN/INC
ΔREFI BOOM TOP 10	0.387***	-0.494	0.002	-0.520*
ΔREFI BOOM BOT 90	0.019	-0.048	0.097	-0.045

The financial crisis, the OTD model, and bank profit: What goes up must come down?

I examine stock returns for the crisis (2007-2008) and compare them to stock returns for the pre-crisis period (2001-2006).

Crisis could reduce equity value of OTD banks because:

- Loss of new business
- Pipeline loan losses
- Clawbacks

Changes in profit as a function of mortgages sales ranked over 2001-2006 (Table 9B)

	2007-2008 stock return		2001-2006 stock return	
	0-90th pct of SOLD	90th – 100th pct of SOLD	0-90th pct of SOLD	90th – 100th pct of SOLD
PURCH SOLD	-0.47%	-0.10%	-10.51%	-39.60%
REFI SOLD	-1.07%	-29.43%	8.21%	64.50%
Memo: Stock return	-22.97%	-46.72%		

Conclusions

- The impact of mortgage sales on banks are consistent with the OTD model.
- The OTD model is easily scalable, and the evidence is consistent with some banks temporarily scaling up for refi booms.
- The increase in profit for banks from mortgage sales during the pre-crisis period was largely offset by losses during the crisis.
  - Gains and losses associated with mortgage sales were small for most banks (in absolute size and relative to overall gains and losses), but not for the banks most concentrated in mortgage sales.