

Study of the Benefits of Securitization Preliminary Results



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American Securitization Forum 2008

Las Vegas, Nevada

February 3, 2008



- Objectives and Research Questions of the ASF Securitization Study
- Literature Review
- Summary of Findings to Date
 - Summary of Interviews with Market Participants
 - Preliminary Findings from the Empirical Studies
- Outline of Remaining Work
- Concluding Remarks

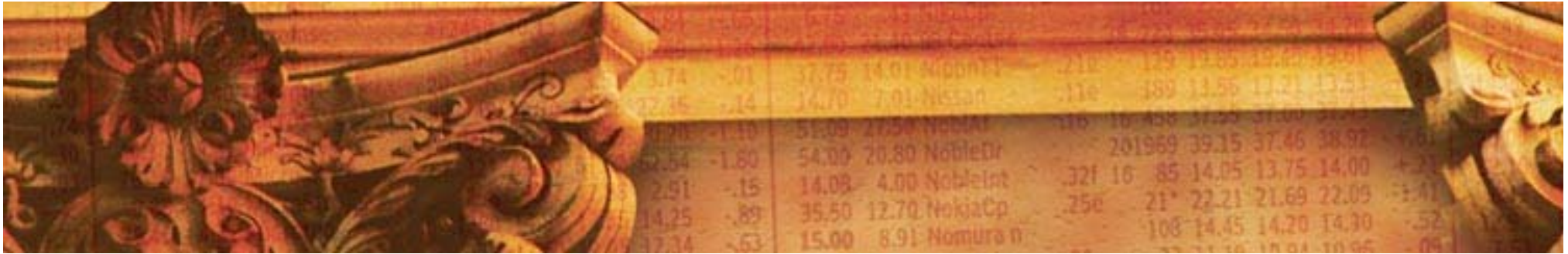
Objectives and Research Questions of the ASF Securitization Study



- An objective and rigorous quantification of the impact of securitization on consumers, businesses, and the economy
- To quantify the impact of securitization on:
 1. Access to Credit
 2. Cost of Credit
 3. Allocation/Dispersion of Risk
 4. Market Liquidity, Discipline and Transparency

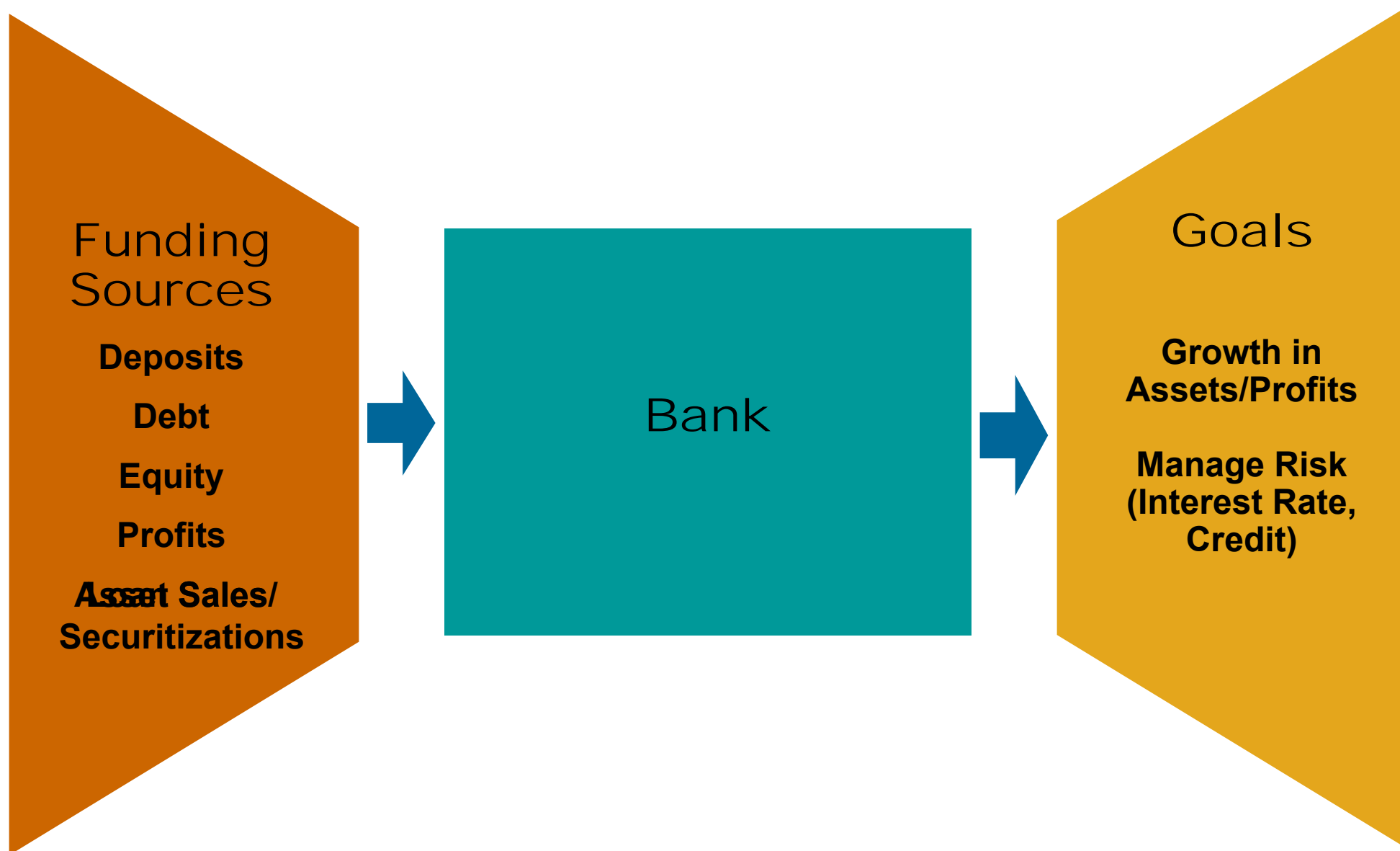


- Approach:
 - Review the existing academic literature
 - Interview industry participants
 - Conduct a series of empirical studies
- Initially focused on mortgage securitization
- Extended portions of analysis to other types of collateral

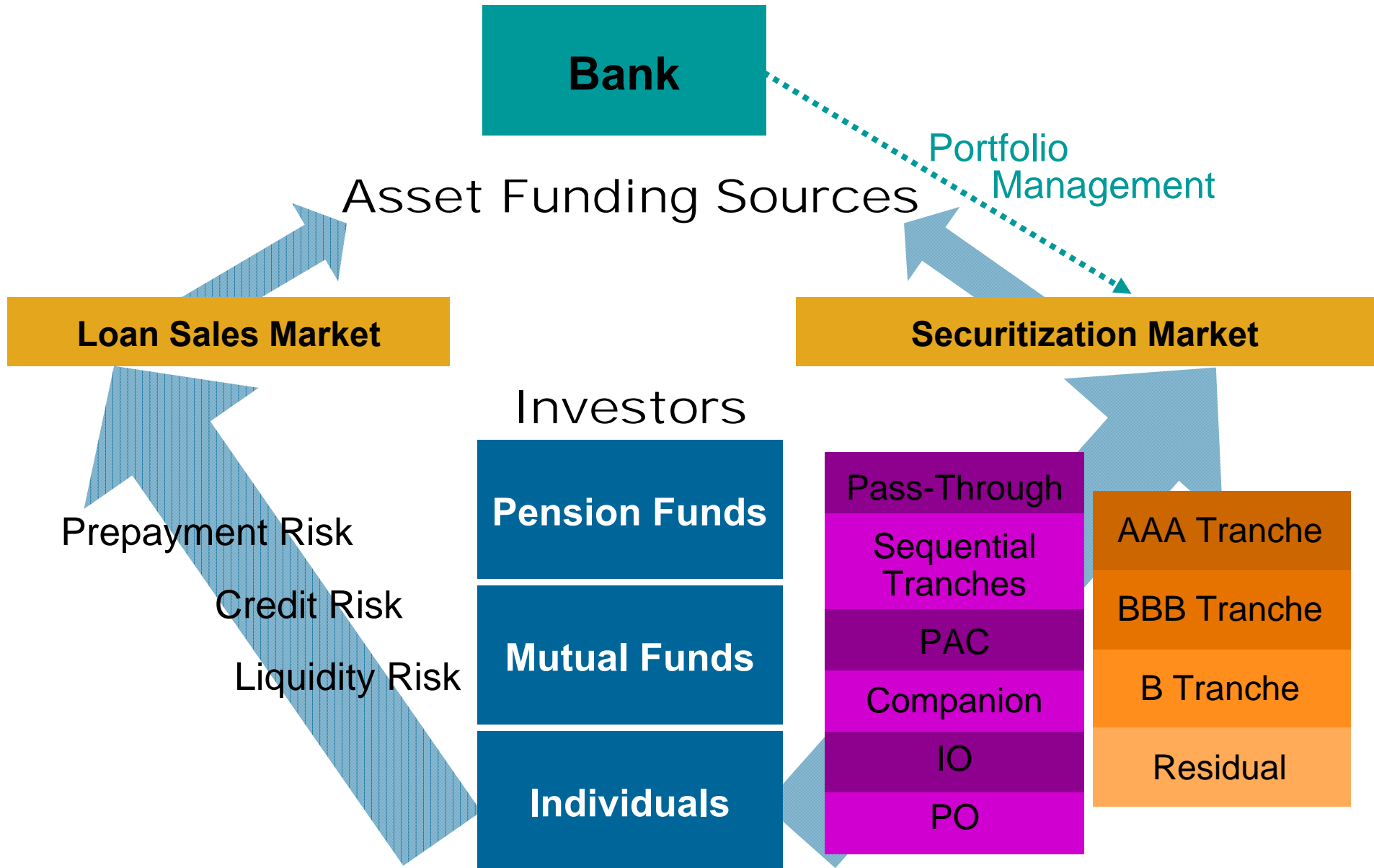


Literature Review

Literature Review: How Securitization Is Supposed to Create Benefits—Need for Funding



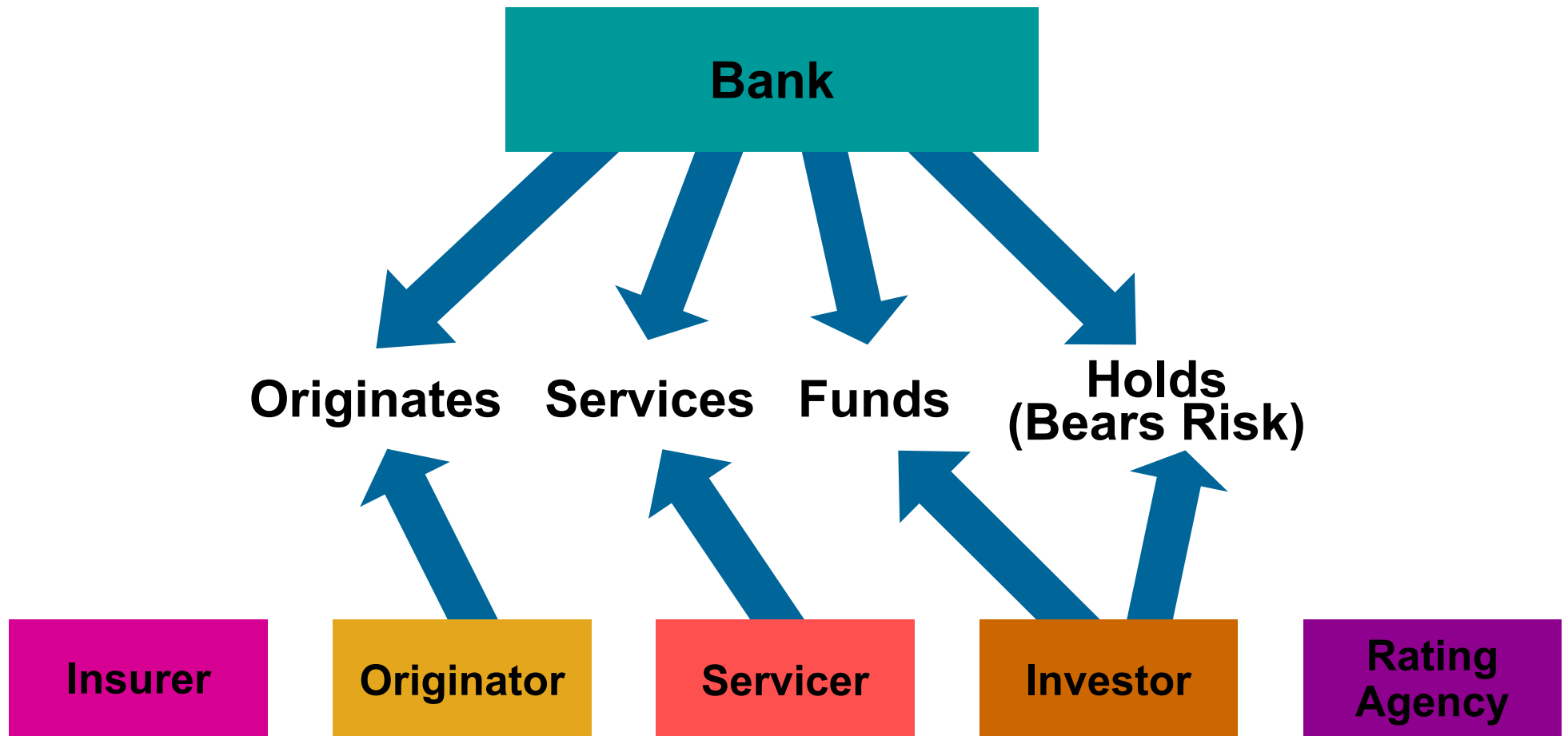
How Securitization Is Supposed to Create Benefits: Enhance Asset Liquidity, Risk Dispersion and Portfolio Management



How Securitization Is Supposed to Create Benefits: Specialization (Unbundling) of the Loan Process



Bank Model of the Loan Process



Securitization Model of the Loan Process

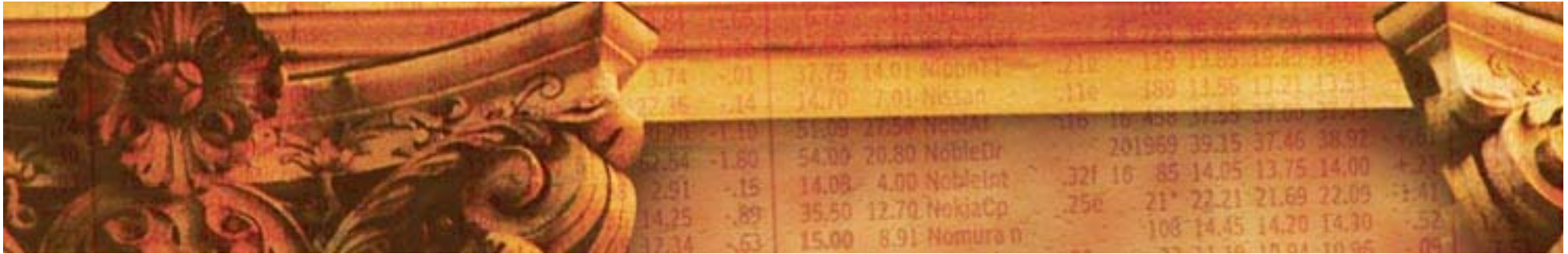


- The literature focused primarily on the impact of securitization by the GSEs
 - Studies have found reductions in cost of credit in the range of 5 to 60 basis points
 - Studies have found varying effects of the GSEs on the availability of credit in underserved neighborhoods
- Few empirical studies have examined securitization of subprime and jumbo mortgage loans, and other collateral



- Effects of securitization on bank liquidity and response to interest rate shocks
 - Securitization is an alternative source of liquidity
 - Securitization reduces the effects of interest rate shocks on loan growth

- Motivation of banks to securitize
 - Balance sheet management
 - Regulatory arbitrage



Summary of Interviews With Market Participants

Summary of Interviews With Market Participants



- The goal of the interviews is to better understand the:
 - Specific role played by the interviewees within the securitization process
 - Perceived benefits and costs of the process
 - Risks involved in their roles in the securitization process
 - Impact of the current credit crisis
- 24 Interviews completed
- Interviewees include lenders, issuers, master servicers, attorneys, accountants, regulators, trustees, investors

1.74	-01	37.75	14.01	Alphabet	210	129	19.85	19.60	19.91	
12.45	-14	14.70	7.01	Nissan	110	189	13.56	13.21	13.51	
1.10	-1.10	51.09	27.50	Noboru	116	16	456	37.25	37.00	
2.54	-1.80	54.00	20.80	NobleDr	201969	39.15	37.46	38.97	38.97	
2.91	-15	14.08	4.00	NobleInt	321	16	85	14.05	13.75	14.00
14.25	-89	35.50	12.70	NokiaCp	250	21*	22.21	21.69	22.09	
17.34	-53	15.00	8.91	Nomura n	108	14.45	14.20	14.30	14.30	

Empirical Studies

Study 1: Impact of Securitization on Credit Availability



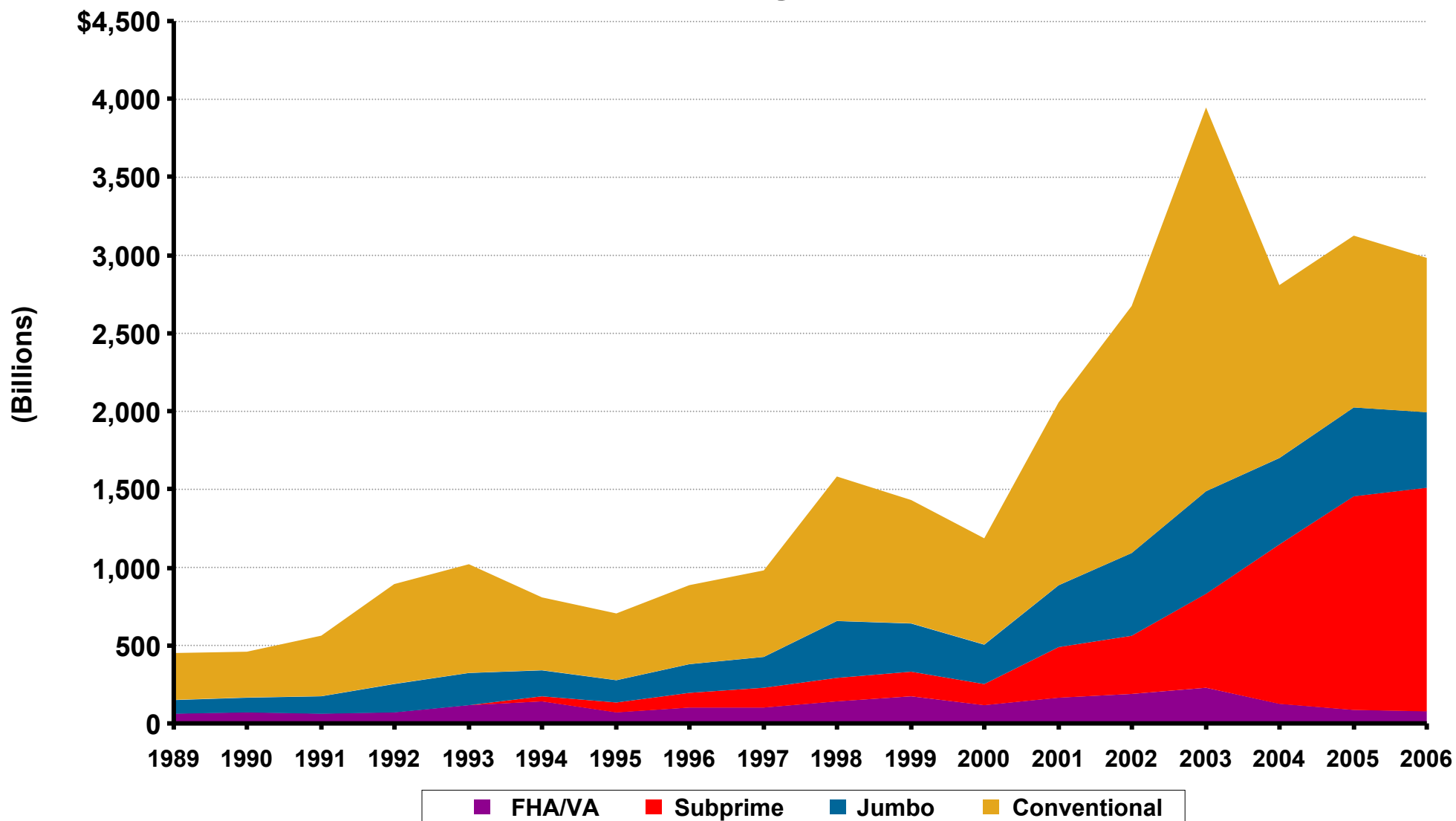
Goals:

- Estimate the impact of secondary market activity on credit availability to various income groups in different geographic areas over time
- Document the changes in credit availability in underserved areas
- Document the extent of secondary market purchases in underserved areas

Total Originations By Type of Mortgage



1989 through 2006

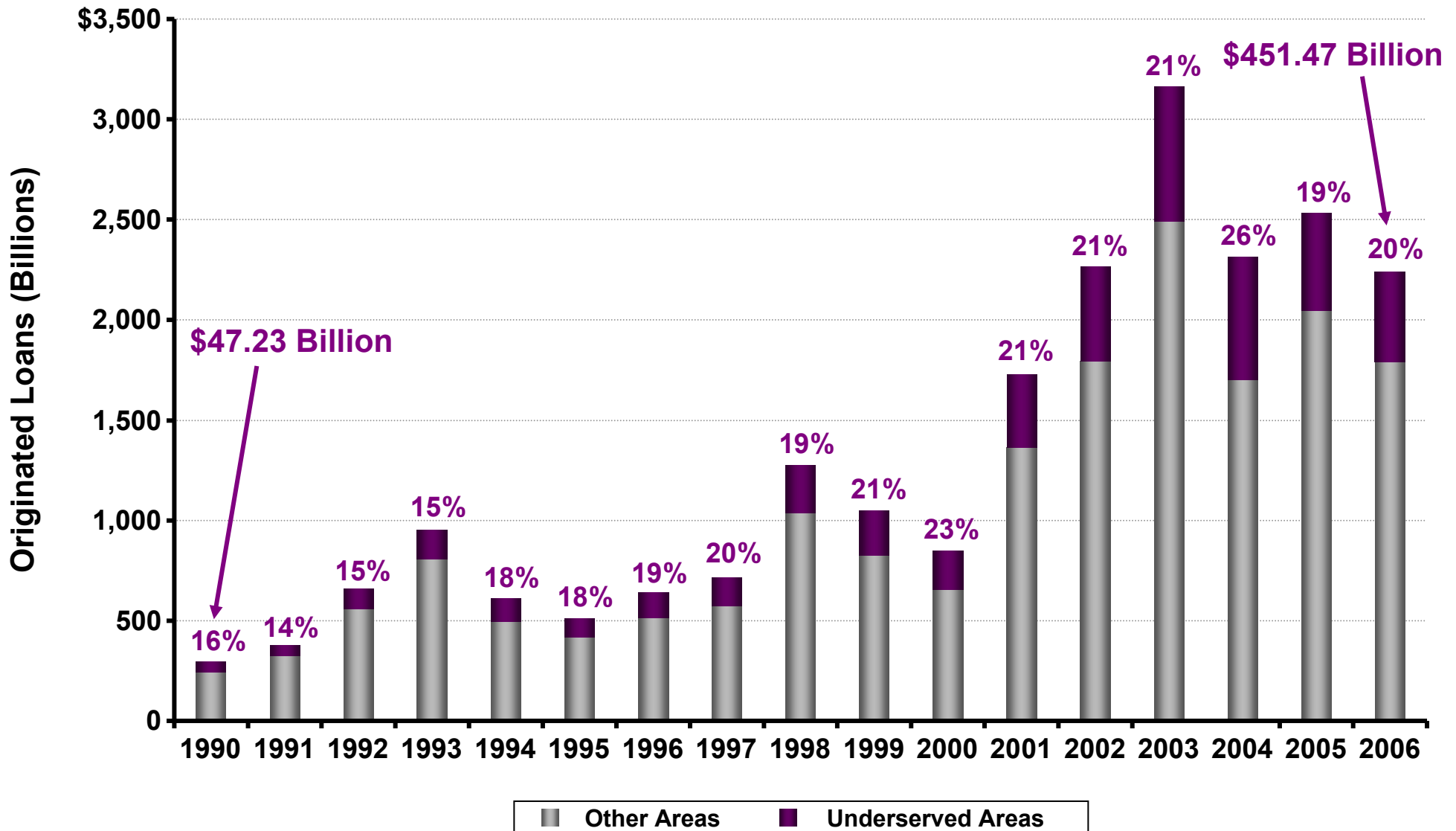


Notes: Data from Inside Mortgage Finance Publishing, Inc.. From 1989 to 1992, Jumbo mortgages were classified as Non-Conforming. From 2001 to 2006, Subprime mortgages include Alt-A, and Home Equity Loans

Percentage of Loans Originated In Underserved Areas



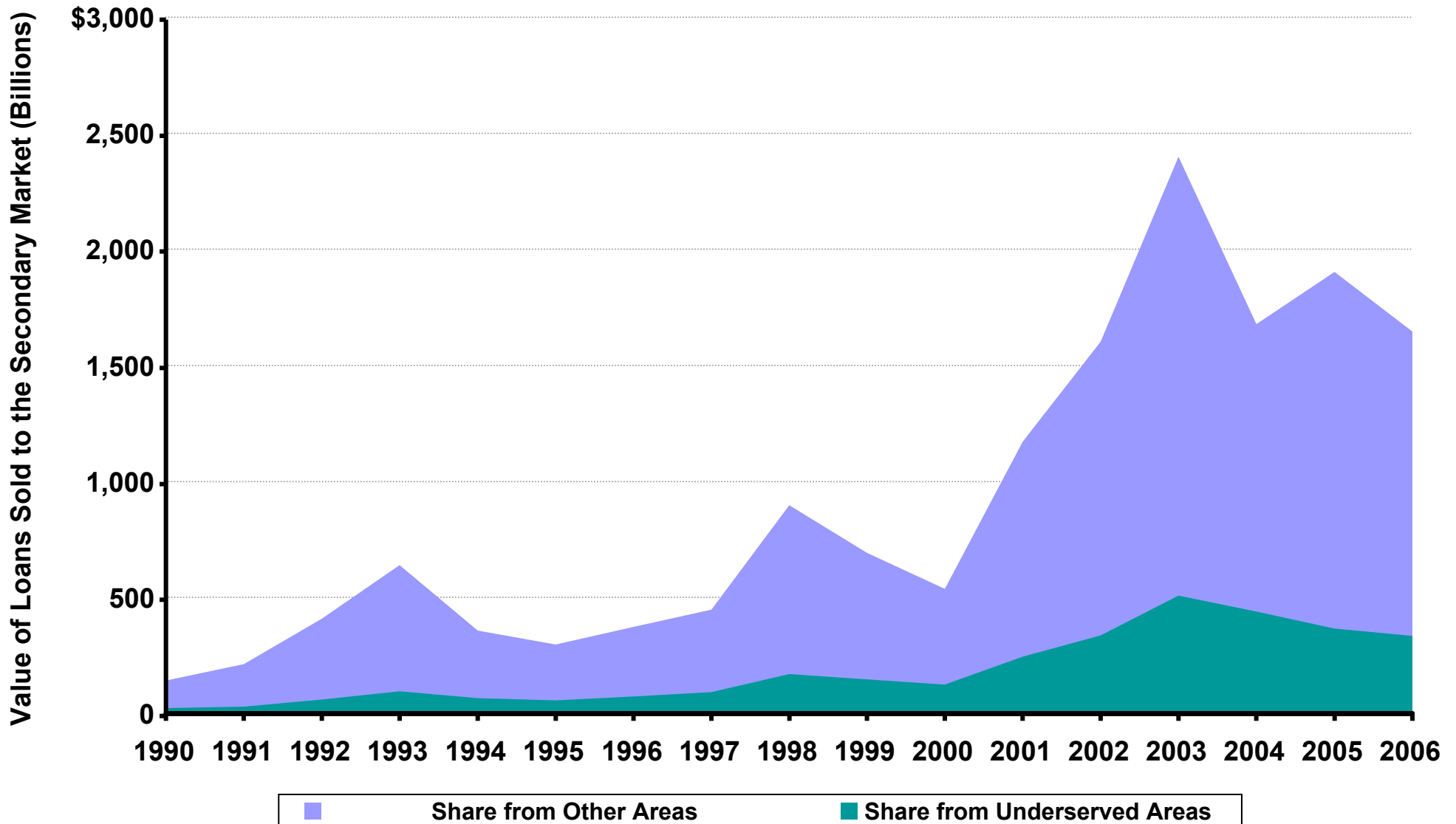
1990–2006



Secondary Market Purchases Overall and In Underserved Areas



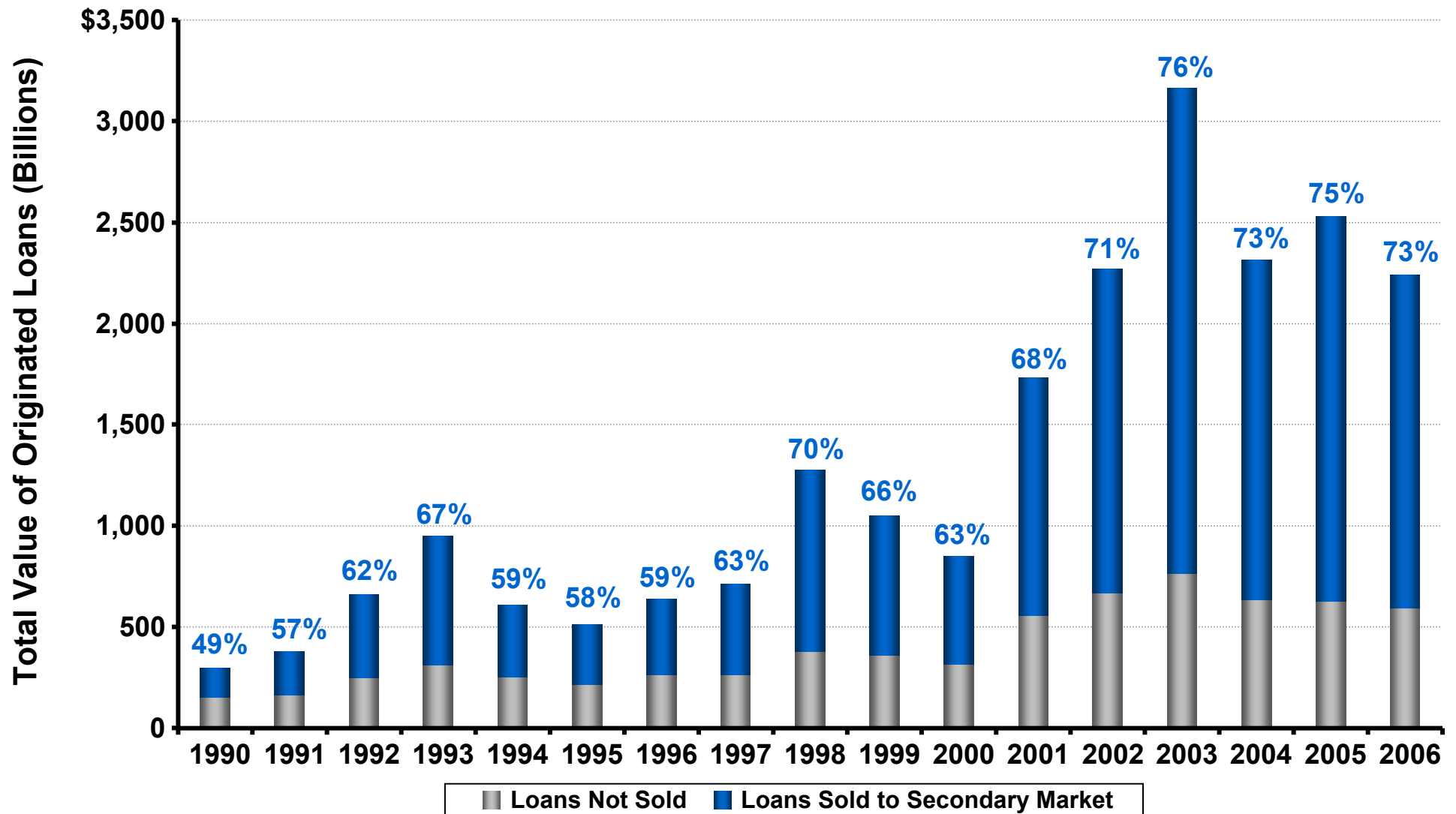
1990–2006



Loans Sold to the Secondary Market As a Percent of Total Loans Originated Each Year



1990–2006



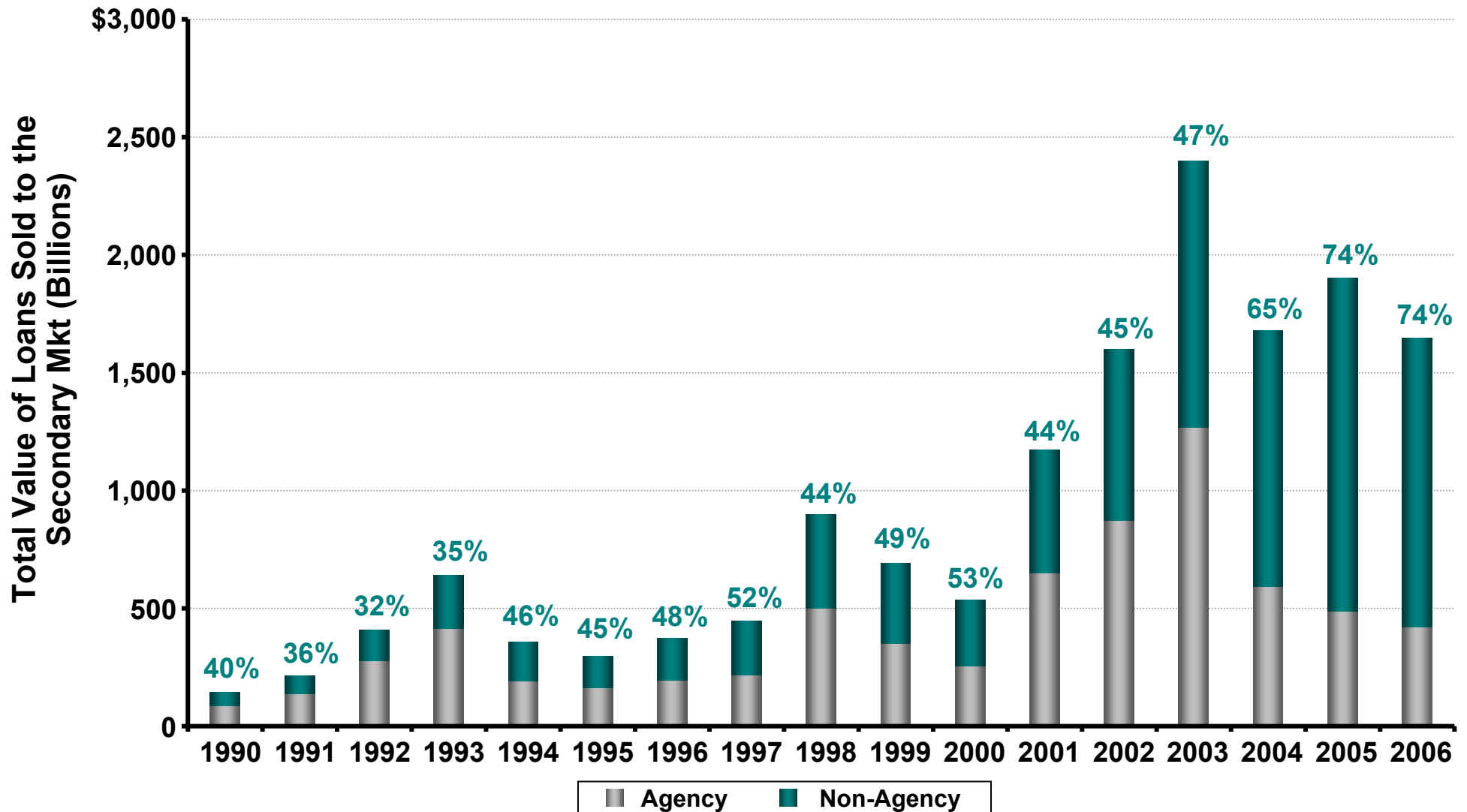
Notes and Sources:

Home Mortgage Disclosure Act Data, Loan Application Registers
 Institutions reporting to HMDA disclose both originated and purchased loans. For purposes of this analysis, only loans originated are used.
 All loans sold to the secondary market are based on loans originated in the same calendar year.

The Non-Agency Share of Secondary Market Purchases Has Increased



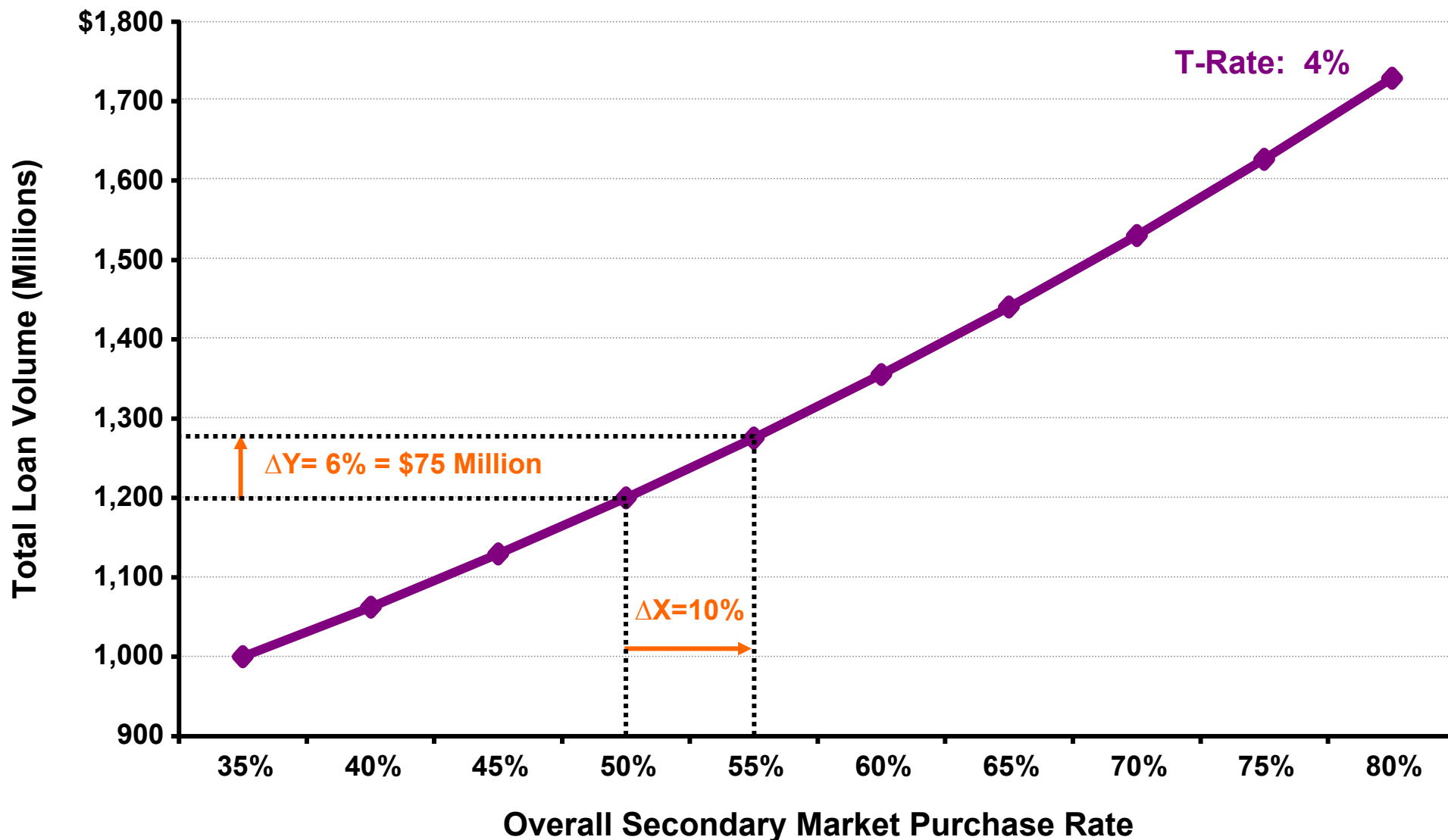
1990–2006



Notes and Sources:

Home Mortgage Disclosure Act Data, Loan Application Registers
 Institutions reporting to HMDA disclose both originated and purchased loans. For purposes of this analysis, we only consider those loans which are originated by the institution.
 Agency purchasers include Fannie Mae, Freddie Mac, Ginnie Mae, and Farmer Mac. All loans sold to the secondary market are based on loans originated in the same calendar year.

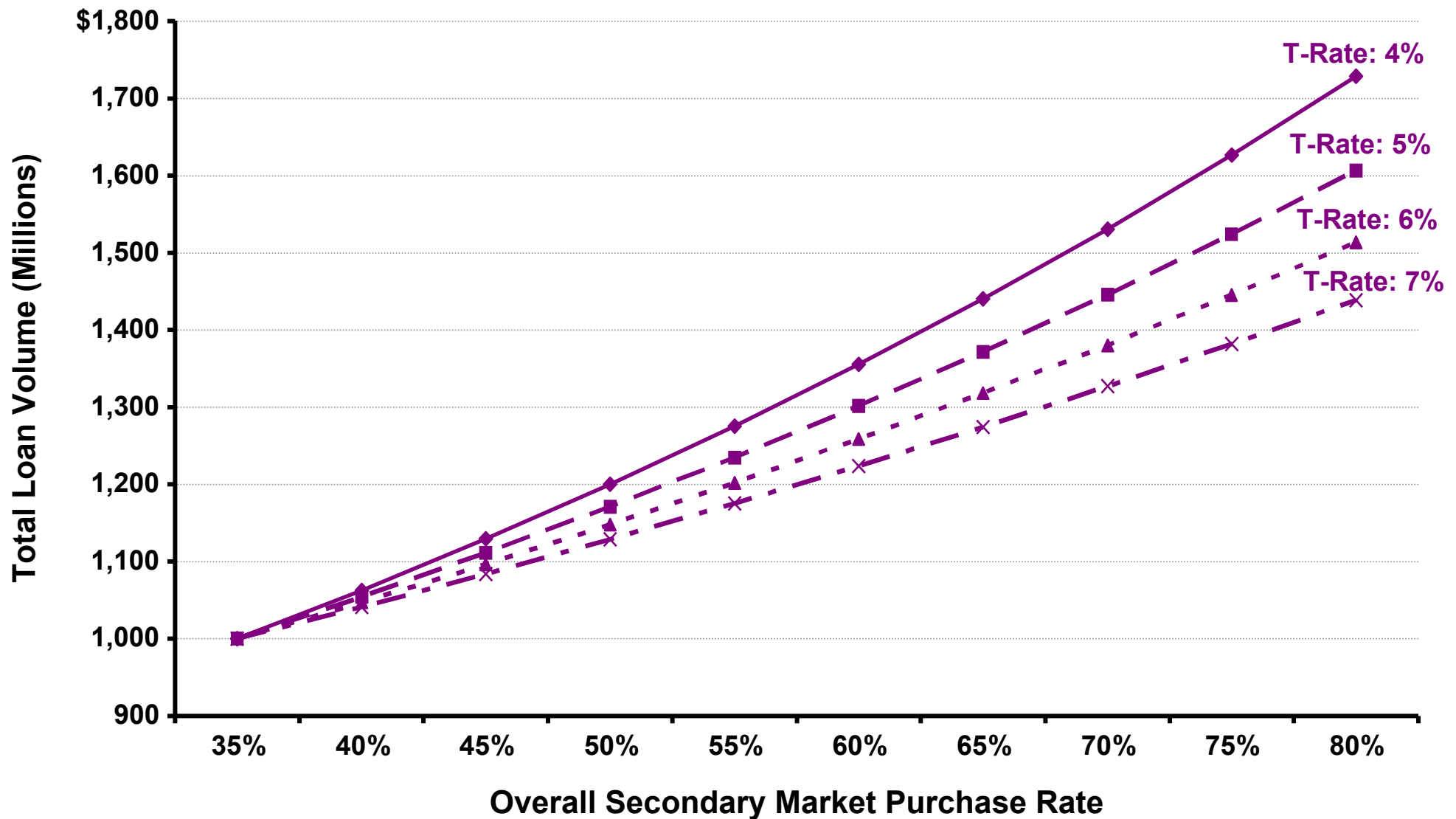
An Increase In Purchase Rates Increases Origination Volume In an MSA



Notes & Sources:

Assumptions: (i) starting point of \$1 billion in loan originations with a purchase rate of 35%, (ii) population of 500,000, and (iii) 2SLS regression results.

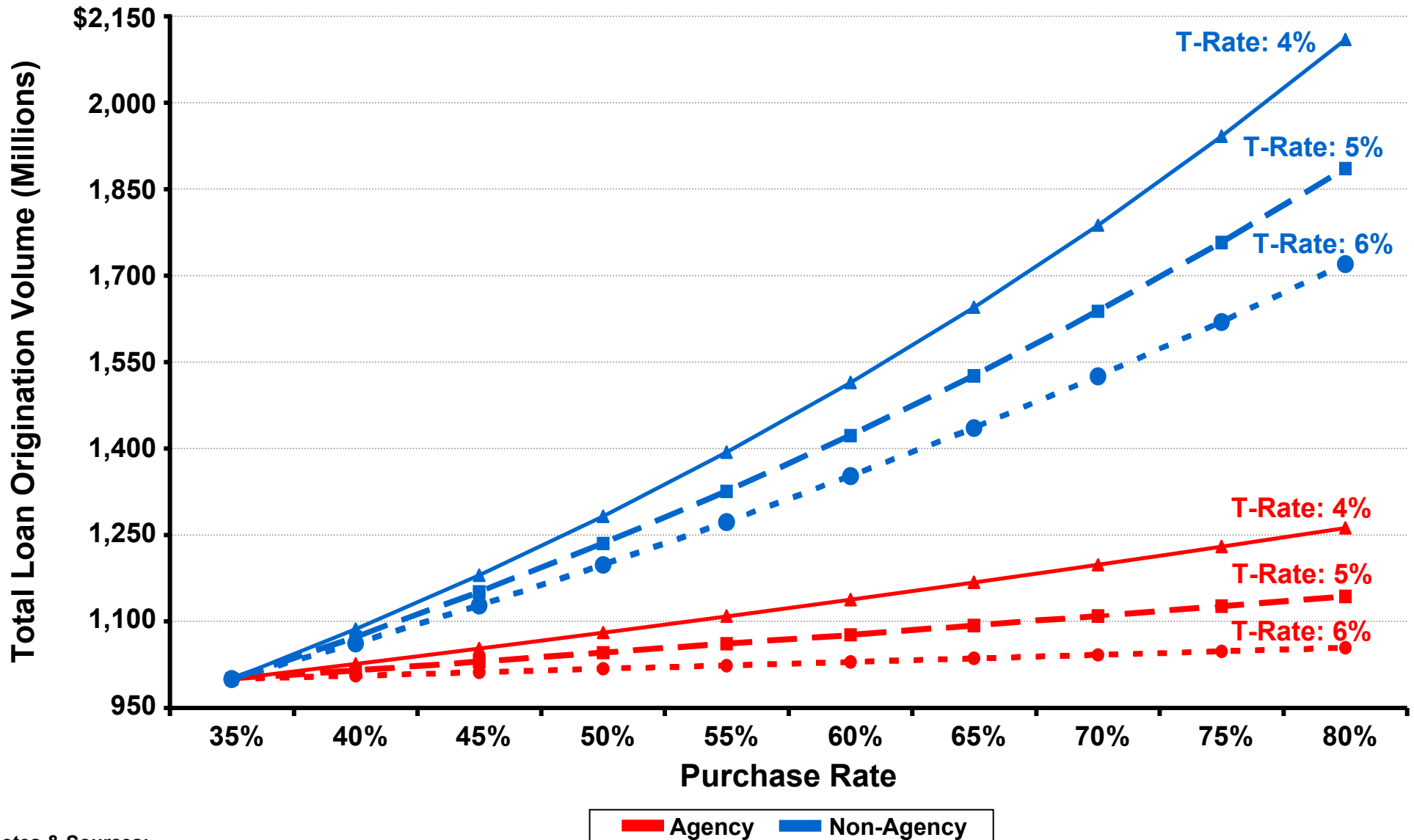
The Impact of Secondary Market Purchases Is Greater in Lower Rate Environments



Notes & Sources:

Assumptions: (i) starting point of \$1 billion in loan originations with a purchase rate of 35%, (ii) population of 500,000, and (iii) 2SLS regression results.

The Impact of Non-Agency Purchases is Greater Than Agency Purchases



Notes & Sources:

Assumptions: (i) starting point of \$1 billion in loan originations with a purchase rate of 35%, (ii) population of 500,000, and (iii) 2SLS regression results.

Study 2: Impact of Securitization on the Cost of Credit to Consumers



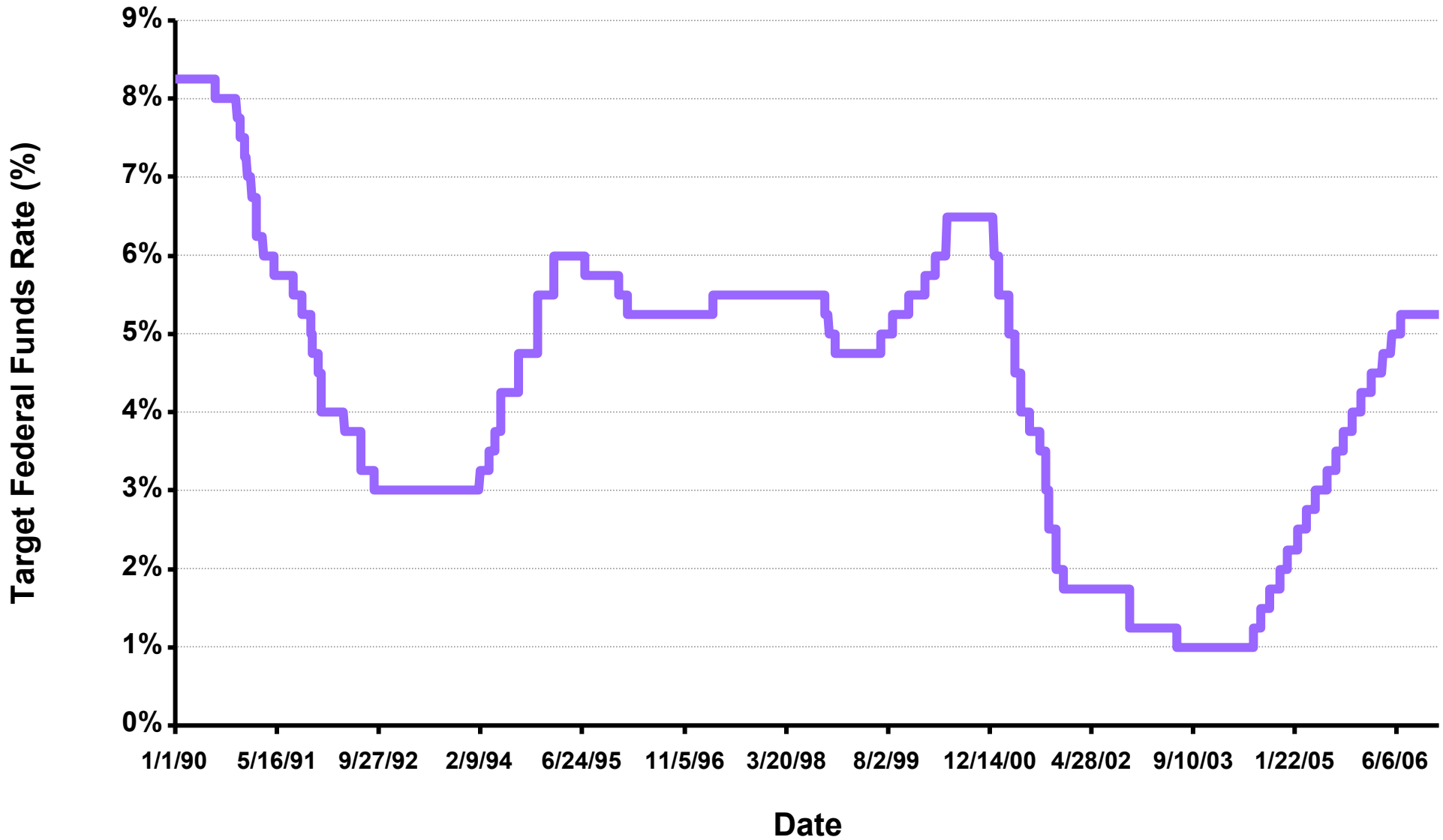
Goals:

- Quantify the relationship between securitization rates and mortgage yield spreads to determine whether securitization lowers the cost of credit to mortgage holders
- Extend the existing literature using the data from 1990's to the present
- Examine the impact of the non-agency market and the auto loan market

Federal Funds Target Rate



1990–2006



Securitization of Loans Has Lowered the Cost to Borrowers



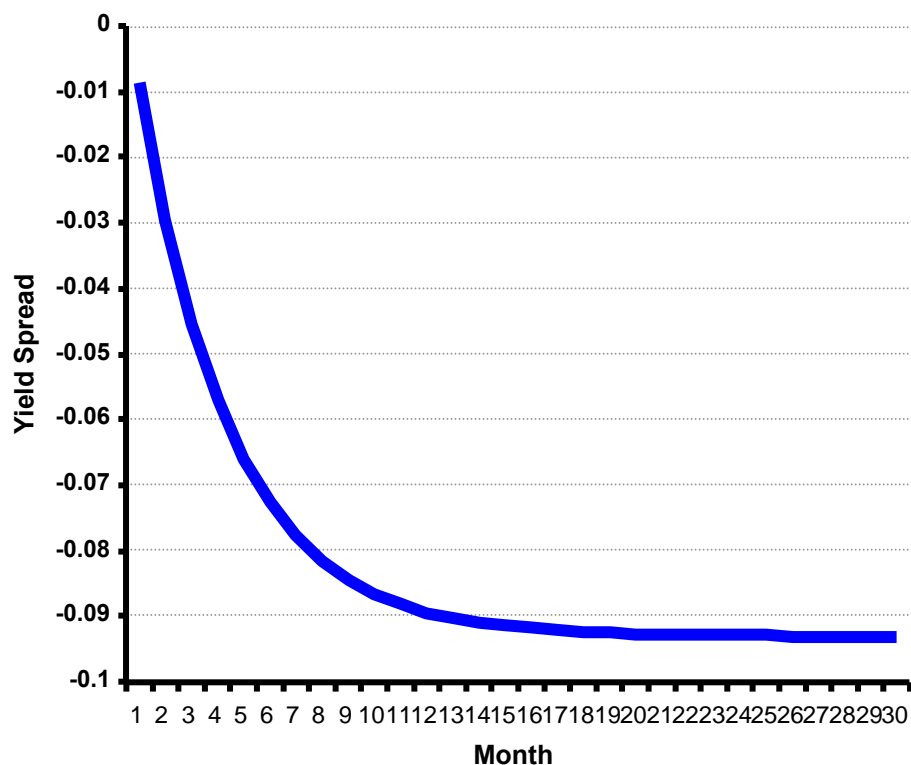
- A 10% increase in the securitization rate leads to a 24 to 38 basis point decrease in yield spreads for subprime mortgages
- A 10% increase in the securitization rate leads to a 4 to 12 basis point decrease in yield spreads for jumbo mortgages

Securitization of Loans Has Lowered the Cost to Borrowers



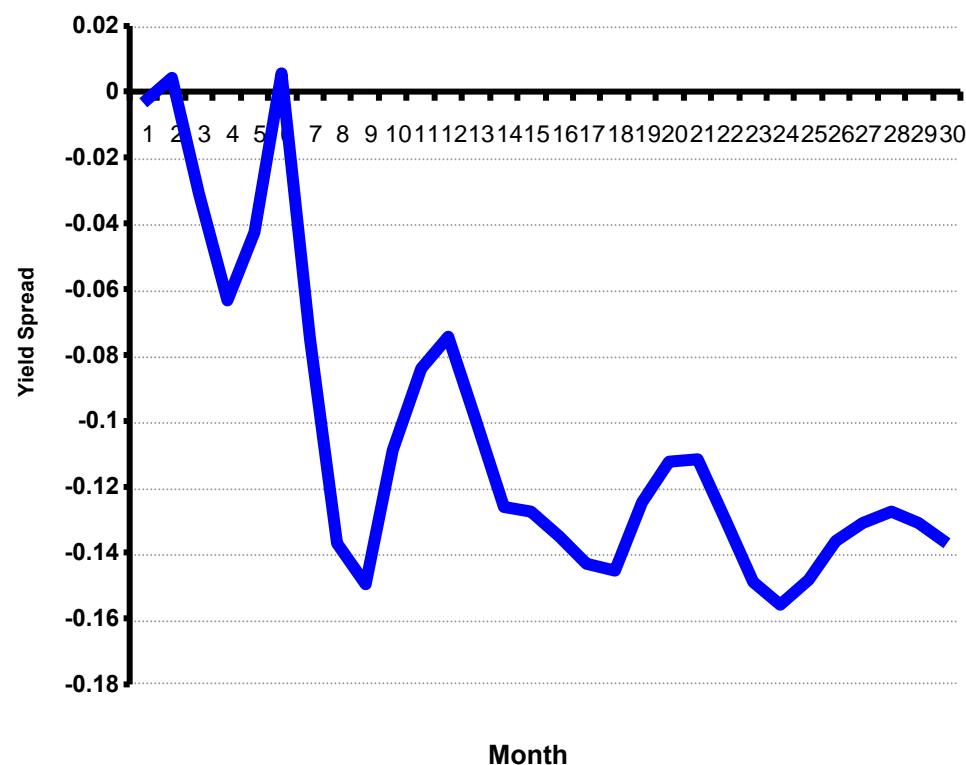
Response of Yield Spread to One S.D. in Securitization Rate

Subprime Mortgages



Model Specification: Period: 1/1999 to 12/2006, 96 monthly observations.
 YSP = Weighted Average Coupon on Subprime Loans (from LoanPerformance)—10-Year Constant Maturity Treasury
 SEC = Dollar Volume of Subprime Securities Issuance divided by Dollar Volume of Subprime Mortgage Originations (from LoanPerformance, scaled by Federal Reserve numbers)

Jumbo Mortgages



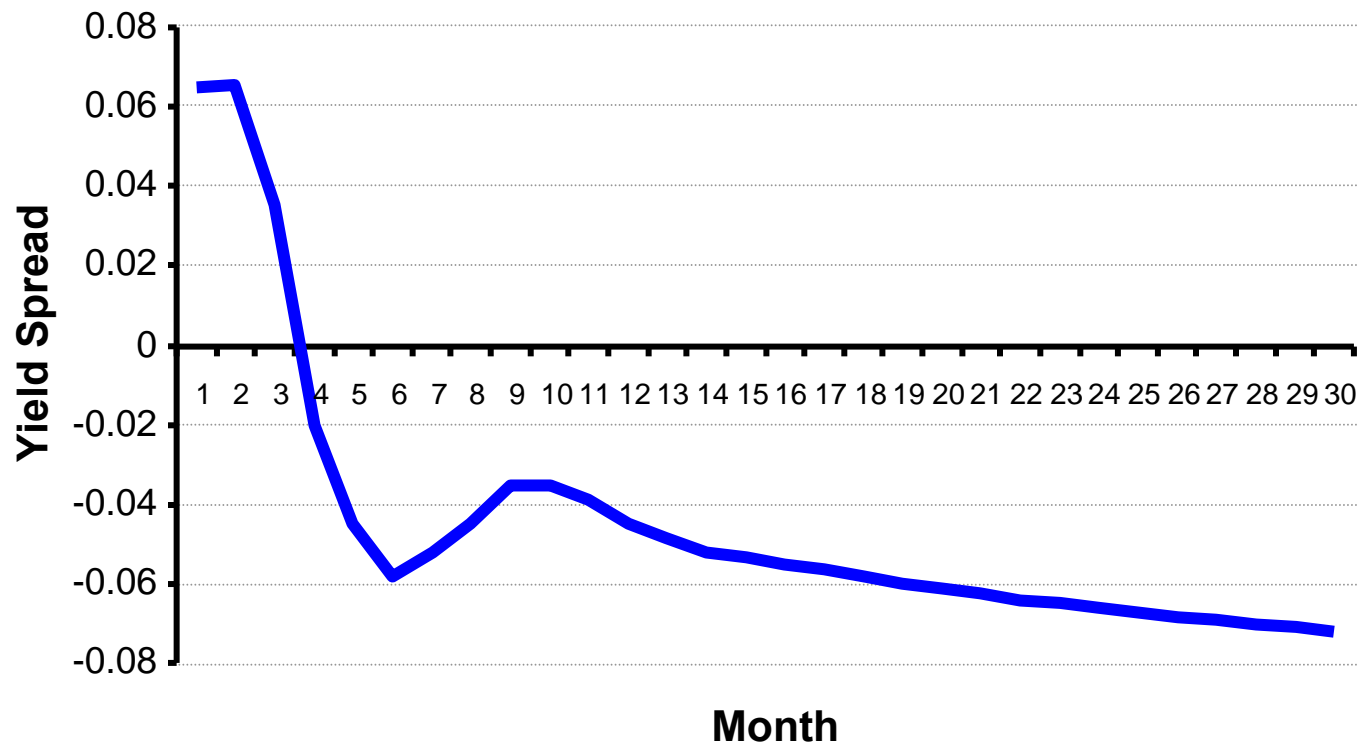
Model Specification: Period: 1/2003 to 6/2006, 42 monthly observations.
 YSP = Weighted Average Coupon on Jumbo Loans (from LoanPerformance)—10-Year Constant Maturity Treasury
 SEC = Dollar Volume of Jumbo Securities Issuance divided by Dollar Volume of Jumbo Mortgage Originations (from LoanPerformance, scaled by Inside Mortgage Finance numbers)

Securitization of Auto Loans Has Lowered the Cost to Borrowers



- A 10% increase in the securitization rate leads to a 22 to 64 basis point decrease in yield spreads for auto loans

Response of Yield Spread to One S.D. in Securitization Rate



Model Specification: Period: 1/1989 to 12/2006, 216 monthly observations.

YSP = Auto Loan Primary Market Interest Rate (from the Federal Reserve) - 3-Year Constant Maturity Treasury

SEC = Securitized Motor Vehicle Loan Assets divided by Owned plus Securitized Motor Vehicle Loan Assets (from the Federal Reserve)

Study 3: Impact of Securitization on Bank Lending



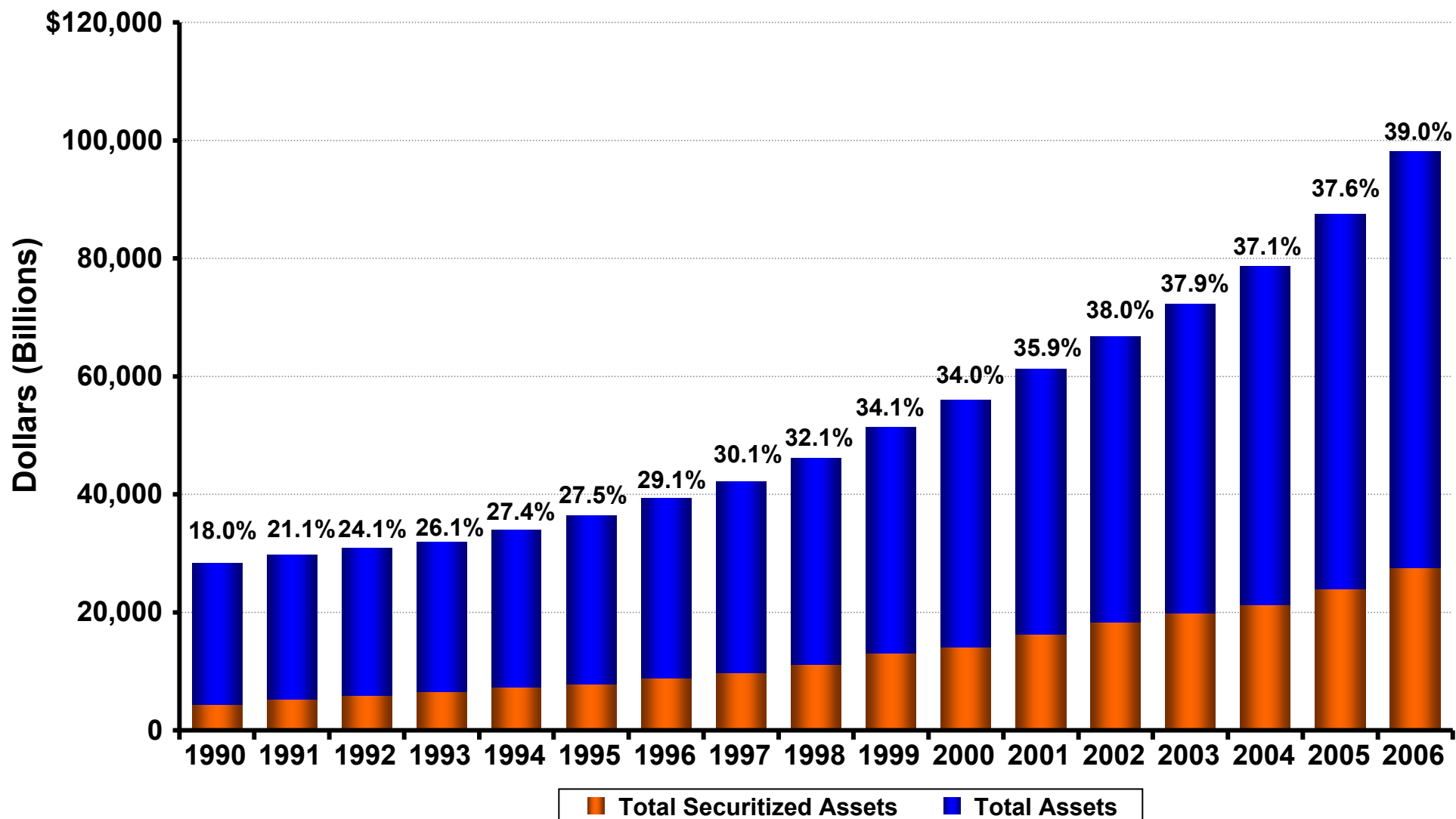
Goals:

- Assess the effect on banks' responses to interest rate shocks
- Securitizable assets index:
 - A bank's loan portfolio is broken into six loan categories
 - The securitizability of each bank's loan portfolio is calculated as the sum of the share of each type of loan multiplied by its securitization rate in the U.S. market

Dollar Amount of Outstanding Balance of Total Loans Securitized



1990 through 2006



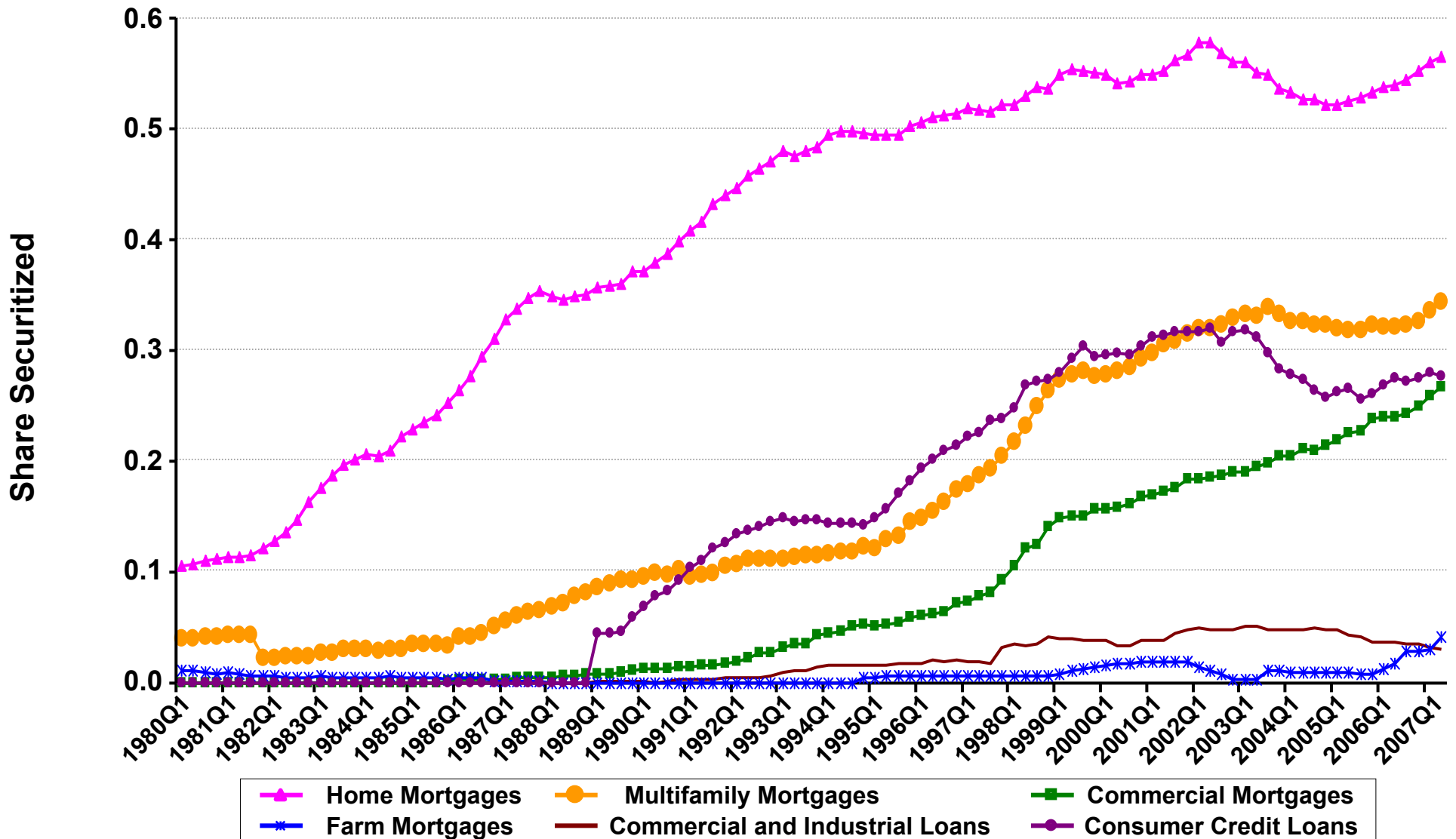
Notes and Sources:

Data from the Federal Reserve's US Flows of Funds Accounts (Table L2, L125, L126) for the period Q1 1990–2006. Share securitized is calculated as the percentage of loans securitized outstanding over total loans outstanding. Total dollar amount securitized in 1990 was \$4,437 billion; total dollar amount securitized in 2006 was \$27,520 billion.

Securitization of Loans in the US Economy Q1 1980—Q2 2007

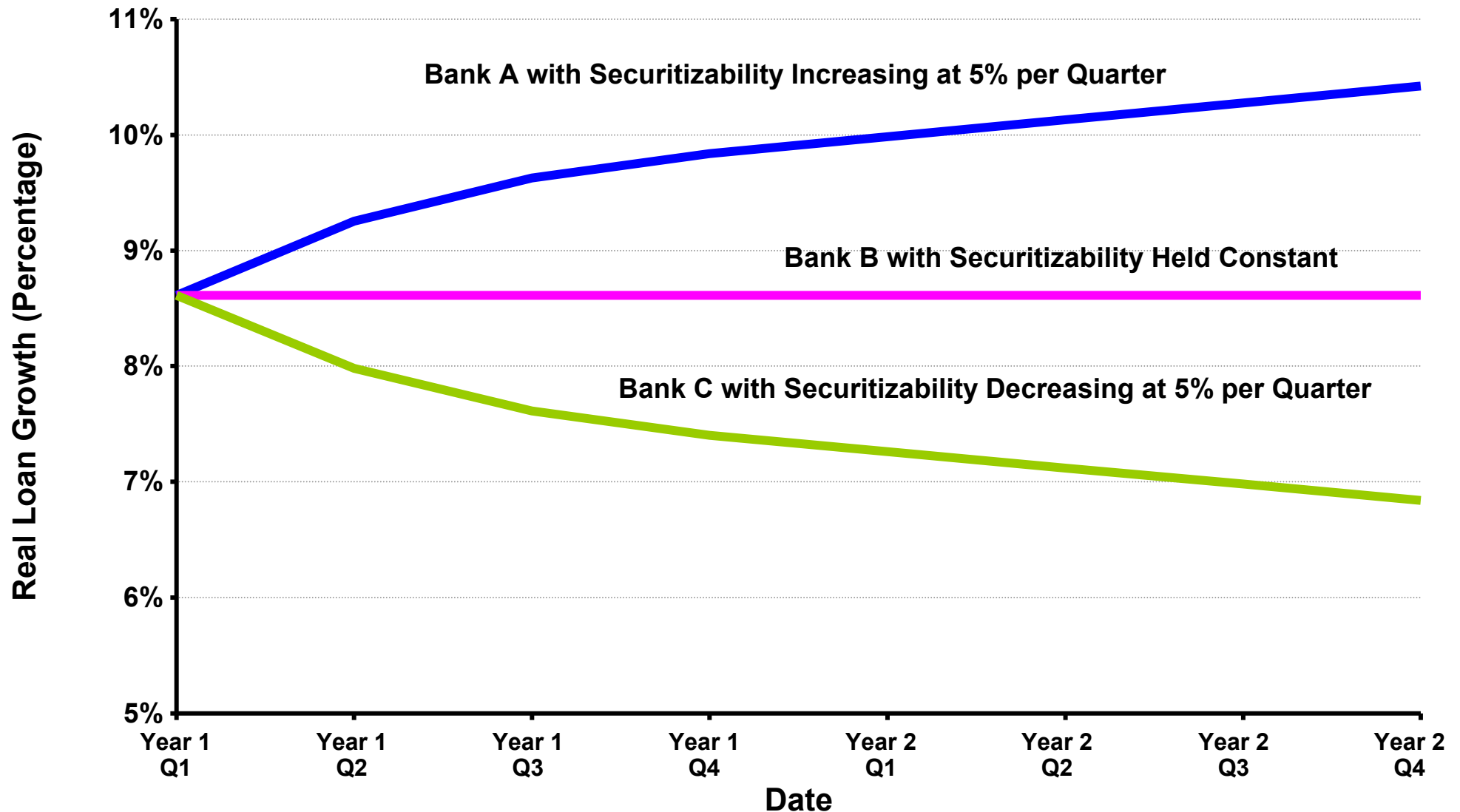


Securitization of Loans in the US Economy



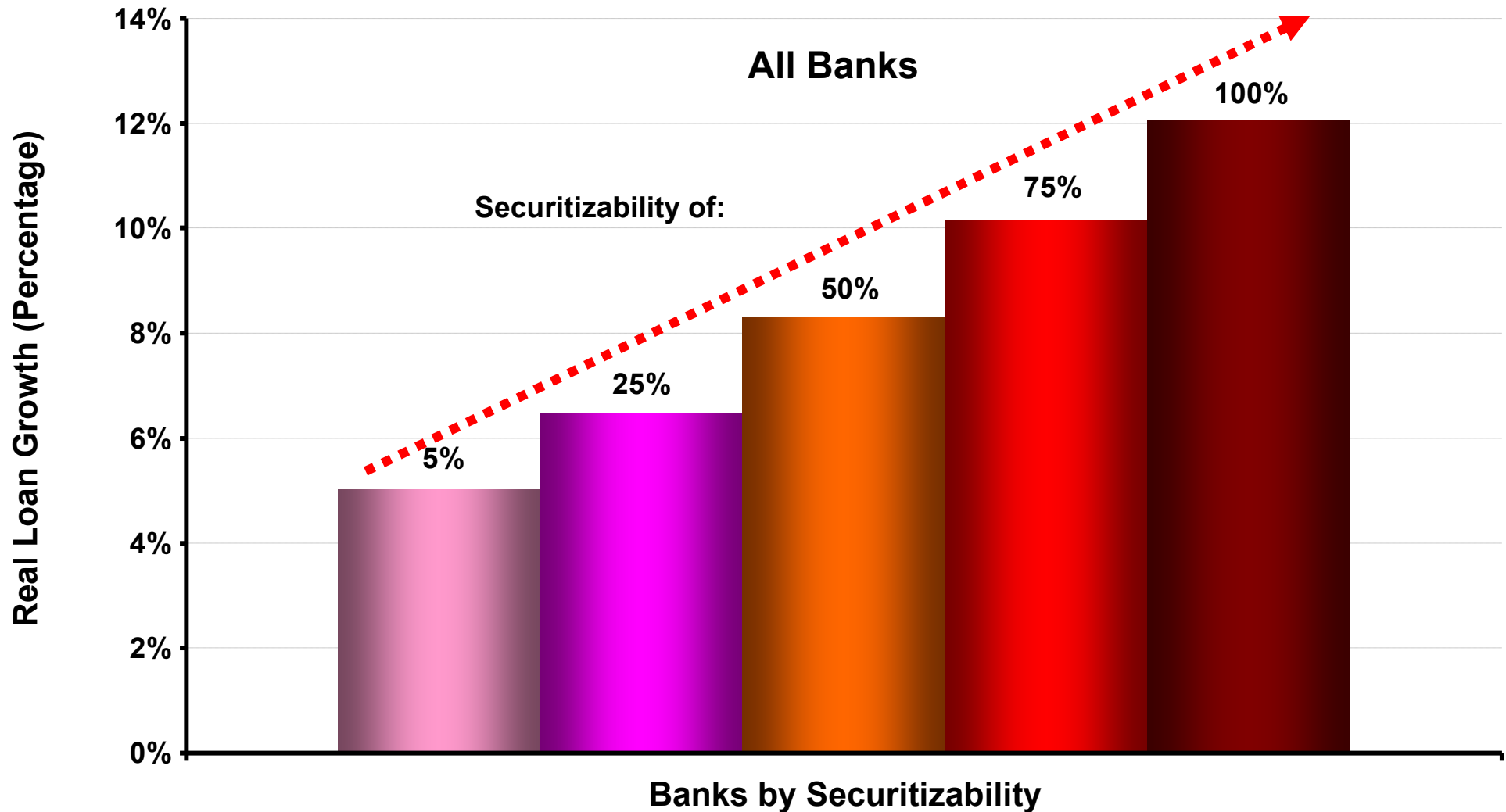
Source: Data from the Federal Reserve's US Flows of Funds Accounts (Table L2, L125, L126) for the period Q1 1980 - Q2 2007. Share securitized is calculated as the percentage of loans securitized outstanding over total loans outstanding.

Illustrative Example: Higher Levels of Securitized Assets Increase the Rate of Real Loan Growth



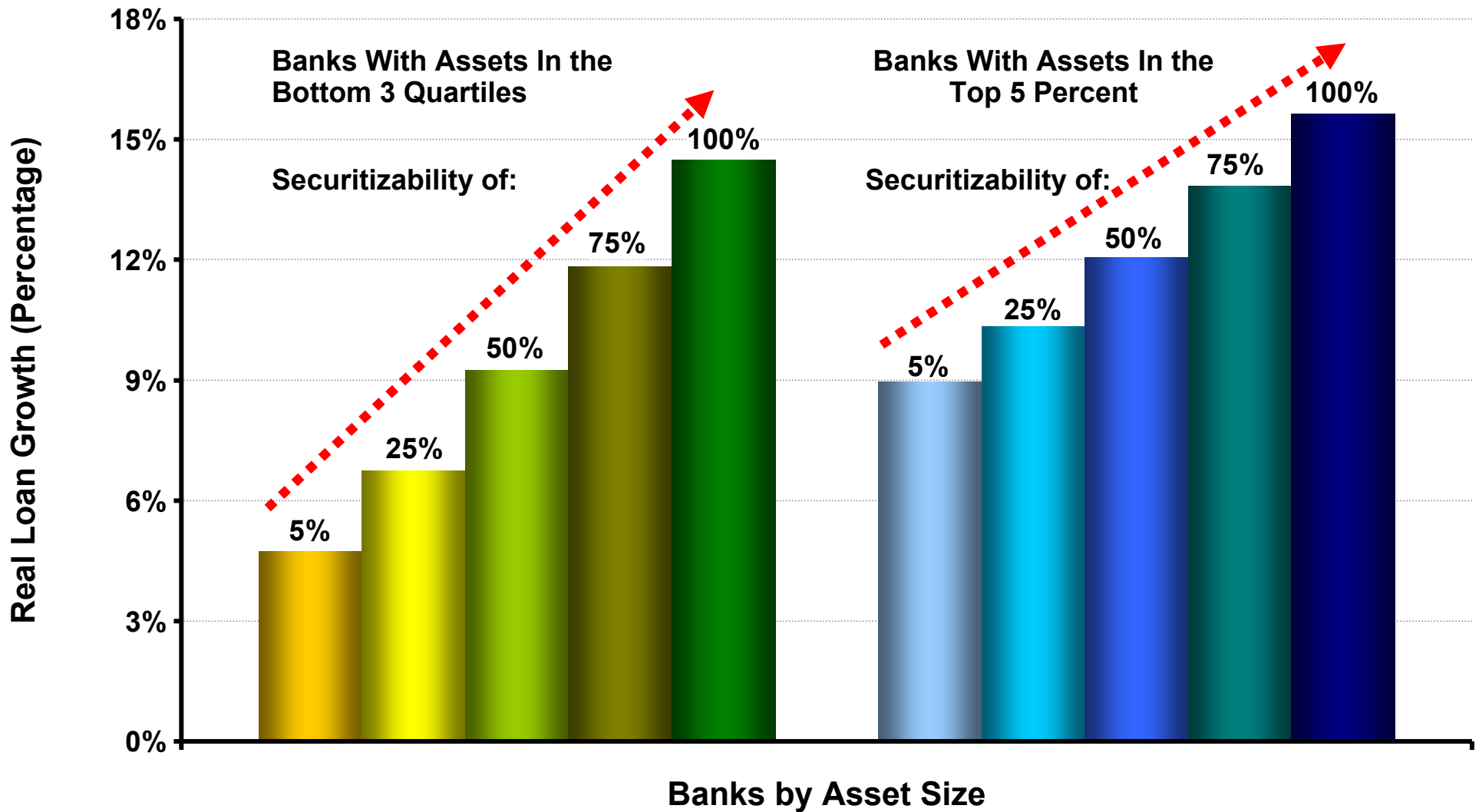
Note: The initial securitizability is 40%.

Illustrative Example: High Levels of Securitized Assets Reduce the Impact of Interest Rate Shocks



Note: Interest rate shock is measured by an increase in the spreads between the 3-month commercial paper rate and the 3-month T-bill rate. The real loan growth calculation captures the cumulative effects of interest rate shock and securitization in the previous 4 quarters.

Illustrative Example: Higher Levels of Securitization Have a More Pronounced Effect on Smaller Banks



Note: Interest rate shock is measured by an increase in the spreads between the 3-month commercial paper rate and the 3-month T-bill rate. Real loan growth calculation captures the cumulative effects of interest rate shock and securitizability in the previous 4 quarters.

Outline of Remaining Work



- Refine Results
- Availability of Credit
 - Underserved Areas
- Cost of Credit
 - Conforming Loans
 - Credit Cards
- Market Liquidity, Discipline and Transparency
- Written Report on Results

Concluding Remarks



- Availability of Credit
 - Mortgage Loans in Underserved Areas
 - Share increased from 16% to as high as 26% since 1990
 - Secondary market purchases
 - Also increased from 16% to as high as 26% since 1990
 - Agency share decreased
 - Have a significant and positive impact on mortgage loans per capita
 - Non-agency effect is larger
- Cost of Credit
 - Securitization Rate and Yield Spreads have a long-term negative relationship
 - Subprime and Jumbo Mortgages
 - Auto Loans
- Impact of Securitization on Bank Lending
 - Banks with more securitizable assets have higher loan growth
 - Loan growth at banks with more securitizable assets is more resistant to interest rate shocks
 - Loan growth for smaller banks is more sensitive to the securitizability of assets

1.74	-01	37.75	14.01	Alpari	21e	129	19.85	19.60	19.91		
12.45	-14	14.70	7.01	Nissan	11e	189	13.56	13.21	13.51		
1.16	-1.10	51.09	27.50	Noblat	11e	16	456	37.25	37.00	37.41	
2.54	-1.80	54.00	20.80	Nobletr		201969	39.15	37.46	38.97	+0.01	
2.91	-15	14.08	4.00	Nobleint	32f	16	85	14.05	13.75	14.00	+2.00
14.25	-89	35.50	12.70	NokiaCp	25e	21*	22.21	21.69	22.09	-1.41	
17.34	-63	15.00	8.91	Nomura n		108	14.45	14.20	14.30	-52	

Appendix

Impact of Securitization: Reflections from Market Participants



The Benefits of Securitization:

- Creates an alternative and less expensive way of financing
- Increases liquidity and provides a stronger, more efficient flow of capital
- Allows originators to isolate their assets and therefore achieve a strong credit position for issuing investment grade securities out of non-investment grade collateral
- Lowers the cost of borrowing for consumers
- Increases availability of credit in all asset classes
- Allows Wall Street to deliver highly tailored investment opportunities to investors thereby increasing the number of investors in the market
- Improves capital market rigor and discipline
- Led to the development of the ability to provide information to a 3rd party and increased the transparency of collateral
- Advanced the discipline of risk management
- Diversifies risk across a variety of investors all over the world
- Allows originators to remove assets off their books and reduces required regulatory capital
- Increased homeownership
- Allows for a lot more specialization

Impact of Securitization: Reflections from Market Participants



Concerns About Securitization:

- Inhibits an investor's ability to differentiate between assets, as all AAA securities are taken as being the same
- Created securities that are complex to understand and require a significant amount of energy and resources to analyze
- Allowed for the continued segmentation of the lending process which stretches out the lending process and hurts the feedback loop which is used to shape underwriting guidelines
- Resulted in lax underwriting guidelines and a loss of internal controls on the issuing side
- Divorces risk from controls by isolating the securities from the underlying collateral
- Creates serious credit issues for companies that are excessively dependent on securitization as a sole source of funding
- Resulted in too much liquidity at times—too much money chasing too few profitable investments
- Increased the general indebtedness of all Americans because of the cheapness of credit

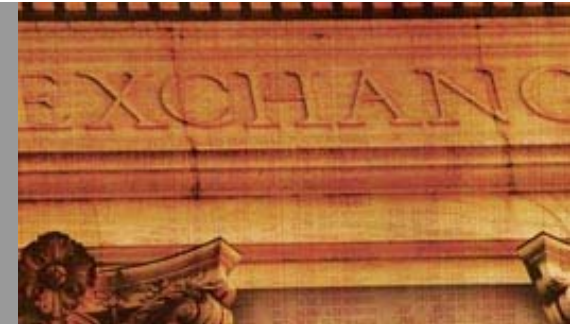
Impact of Securitization: Reflections from Market Participants



Thoughts on the Current Crisis

- Securitization is a critical part of the economy. The crisis did not arise due to the technology but because of its misuse and poor information in the markets.
- The industry has tested the envelope of “anything can be securitized.”
- The crisis is a natural part of the cycle. Risk management and control infrastructure have always lagged the introduction and growth of a major product.
- The crisis will provide the opportunity for more transparency, more oversight, and more reliable data to be provided to the market.
- There needs to be an increased emphasis on the quality of the assets at origination. Good underwriting matters.
- Some things with the securitization process went wrong. Rating agencies were relied upon too heavily, AAA does not mean they are riskless. All assets were treated the same without accounting for differences in companies, security structure, etc.
- We haven’t seen the end of the crisis because we haven’t seen the value of property stop declining.
- The crisis has not changed the benefits of securitization. The markets have already seen the crisis give rise to greater transparency; companies are pooling data on the loans and securities to better measure and model performance.
- Everyone is sitting on the sidelines and it’s going to take time before they have confidence and come back but hopefully the markets will settle a bit and pick up.

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