



FEDERAL RESERVE BANK *of* NEW YORK

# Evolution in Bank Complexity

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Federal Reserve Bank of New York

Shadow Banking Within and Across National Borders

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The views expressed in this presentation are those of the authors and do not necessarily represent those of the Federal Reserve Bank of New York or the Federal Reserve System

# How has financial intermediation evolved?

- Who does financial intermediation:  
congeneric or conglomerate BHCs?
- Big debate post 1956 BHC act as to whether BHCs would be composed of several banks or several nonbanking firms and banks.

# What we do

We document the evolution of the organization of financial firms through their mergers and acquisitions

Not the only way these firms may become complex, but an important venue

# Main takeaways

- Banks changed their organization from generalist intermediaries (congenerics) to *conglomerated specialists*
- Intermediation is centered around the more diversified BHC, and less so around banks within the BHC

# Data Construction

- Sources
  - SNL US M&A deals. Universe of financial industry over 1983-2012
  - BHC regulatory data (Y-9C)
  - CRSP
- Assembling. Panel of *BHC families* built by recording subsidiaries acquired in each of ten industry groups

# Data Construction

- Subset on whole company, completed, intra-finance acquisitions
- Start with universe of entities in SNL. As deals occur, update ownership, including subs (targets of targets, etc.)
- Snapshot at each quarter end, profile consists of industry counts in acquisition tree

# Unique Entities in Acquisitions Dataset

Industry	Total Unique	Unique Buyers	Unique Targets
Bank	7,893	2,904	5,843
Asset Manager	1,648	374	1,306
Broker-Dealer	1,387	361	1,070
Financial Technology	1,989	426	1,621
Insurance Broker	3,682	504	3,237
Insurance Underwriter	2,193	793	1,514
Investment Company	64	40	27
Real Estate	229	87	150
Savings Bank/Thrift/Mutual	2,352	676	1,927
Specialty Lender	2,014	342	1,707
Total	23,451	6,507	18,402

# Buyer/Target Industry Types

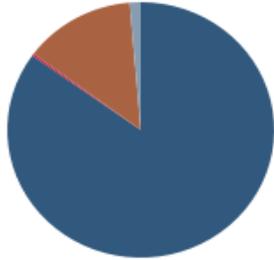
Buyer Industry	Target Industry										Total
	Bank	Asset Manager	Broker-Deal	Financial Tech.	Insurance Broker	Insurance UW	Invest. Company	Real Estate	Savings Bank/T/M	Specialty Lender	
Bank	6,076	519	292	164	759	38	3	1	1,305	653	9,810
Asset Manager	2	459	38	110	27	24	6	17	1	51	735
Broker-Deal	6	127	613	78	59	9	4	9	6	42	953
Financial Tech.	2	13	23	1,123	60	8				13	1,242
Insurance Broker	4	31	12	35	1,762	18			1	6	1,869
Insurance UW	14	138	55	126	533	1,451		4	18	54	2,393
Invest. Company	2	19	4	4	4	2	11	4	1	42	93
Real Estate	1	3	3			1		111	1	10	130
Savings Bank/T/M	359	45	28	8	115	21		2	705	138	1,421
Specialty Lender	19	10	26	20	11	5	3	2	21	769	886
<b>Total</b>	<b>6,485</b>	<b>1,364</b>	<b>1,094</b>	<b>1,668</b>	<b>3,330</b>	<b>1,577</b>	<b>27</b>	<b>150</b>	<b>2,059</b>	<b>1,778</b>	<b>19,532</b>

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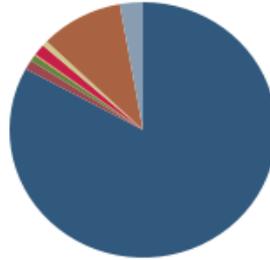
Buyer Industry	Target Industry										Total
	Bank	Asset Manager	Broker-Deal	Financial Tech.	Insurance Broker	Insurance UW	Invest. Company	Real Estate	Savings Bank/T/M	Specialty Lender	
Bank	5,983	43,512	173,952	18,083	3,297	16,783	1,127	333	203,243	276,048	2,142,361
Asset Manager	0	68,463	7,812	46,776	2,575	1,692	416	70,405	17	29,347	227,504
Broker-Deal	6,099	19,461	106,443	4,302	1,467	970	1,921	15,183	2,665	9,463	167,975
Financial Tech.	25	3,813	1,784	91,225	437	1,284				733	99,301
Insurance Broker	10	41	41	5,346	21,359	244			11	1	27,054
Insurance UW	4,460	28,783	15,605	10,929	8,032	527,592		2,284	785	22,354	740,825
Invest. Company	0	654	18	6	129	5	2,657	4,669	19	4,120	12,276
Real Estate	0	599	3			133		136,014	78	93	136,921
Savings Bank/T/M	8,982	3,359	119	74	165	3,409		86	54,333	15,165	95,691
Specialty Lender	110	1,904	2,006	1,884	62	1,824	393	416	848	73,561	83,008
<b>Total</b>	<b>5,669</b>	<b>170,590</b>	<b>307,784</b>	<b>178,625</b>	<b>37,524</b>	<b>553,935</b>	<b>6,514</b>	<b>229,390</b>	<b>261,999</b>	<b>430,885</b>	<b>3,732,916</b>

# Buyers in All Acquisitions

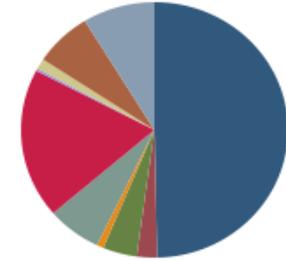
1989-1992



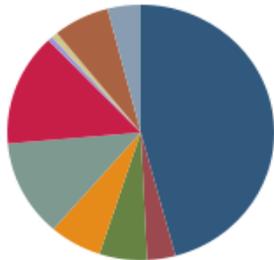
1993-1996



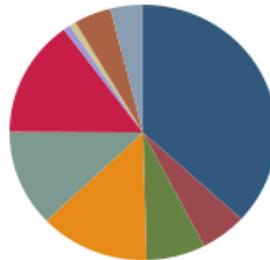
1997-2000



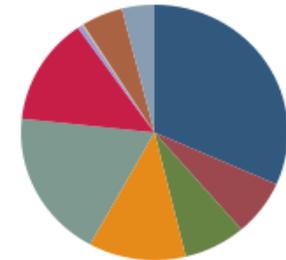
2001-2004



2005-2008



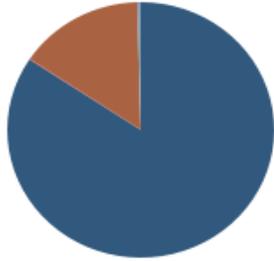
2009-2012



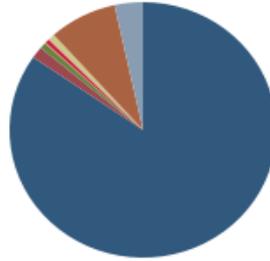
Distribution of Count

# Total in On-Diagonal Acquisitions

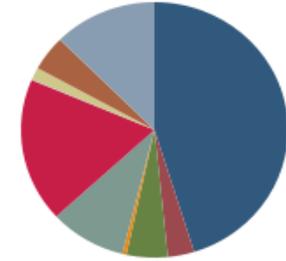
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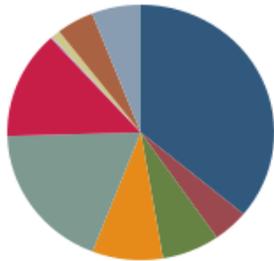
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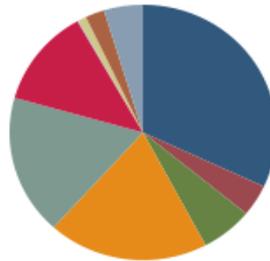
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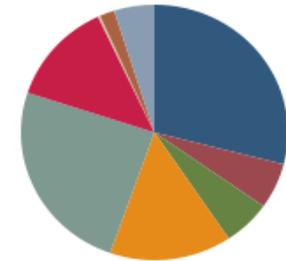
2001-2004



2005-2008



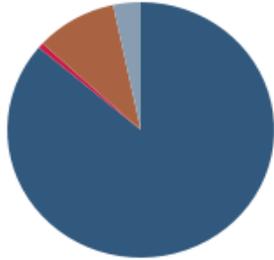
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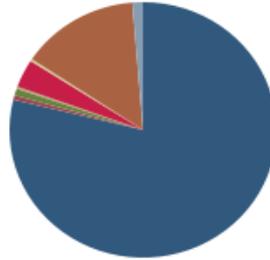
Distribution of Count

# Buyers in Off-Diagonal Acquisitions

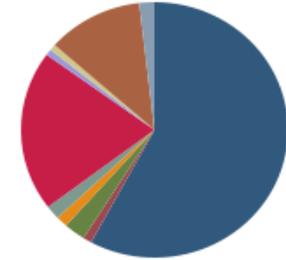
1989-1992



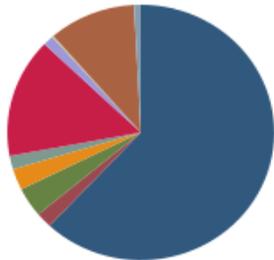
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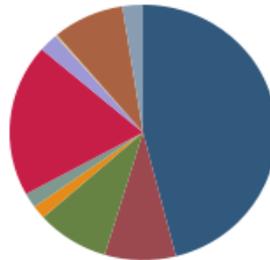
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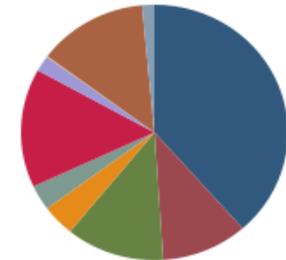
2001-2004



2005-2008



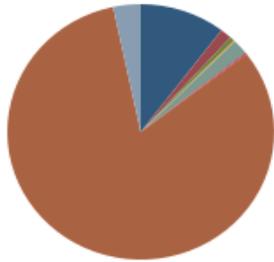
2009-2012



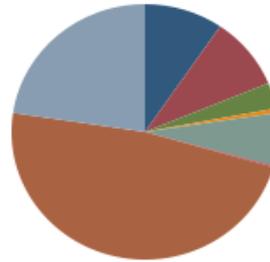
Distribution of Count

# Targets in Off-Diagonal Acquisitions

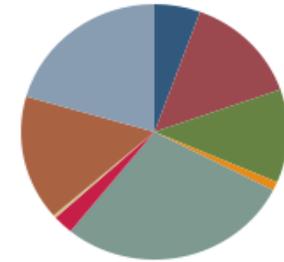
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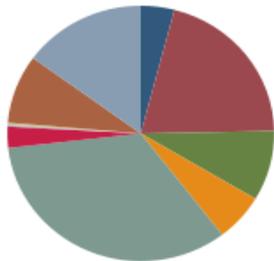
1993-1996



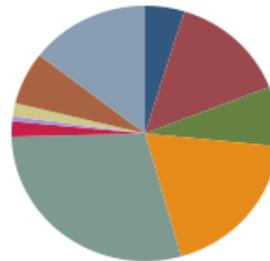
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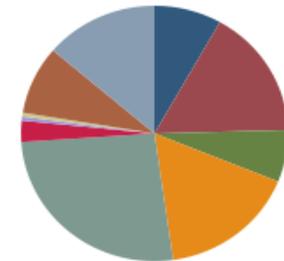
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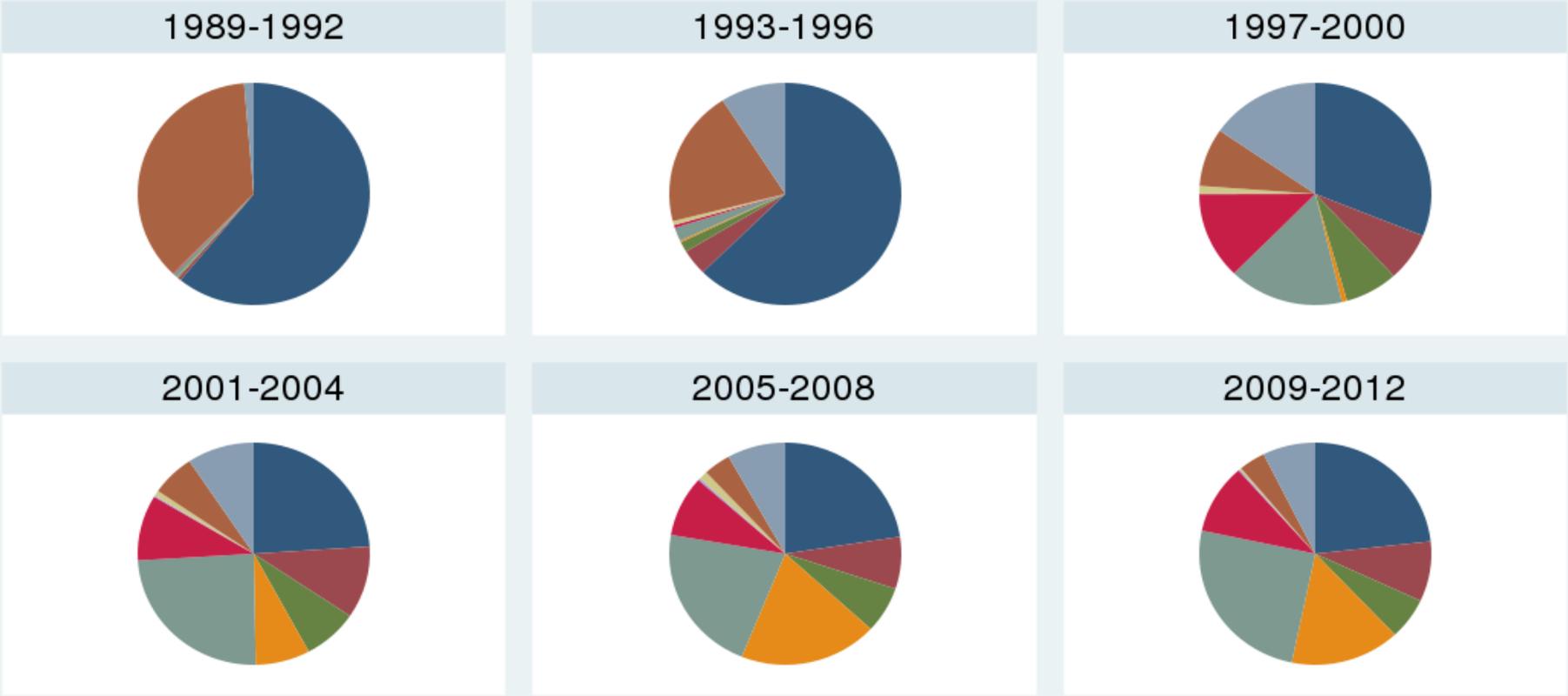


2009-2012



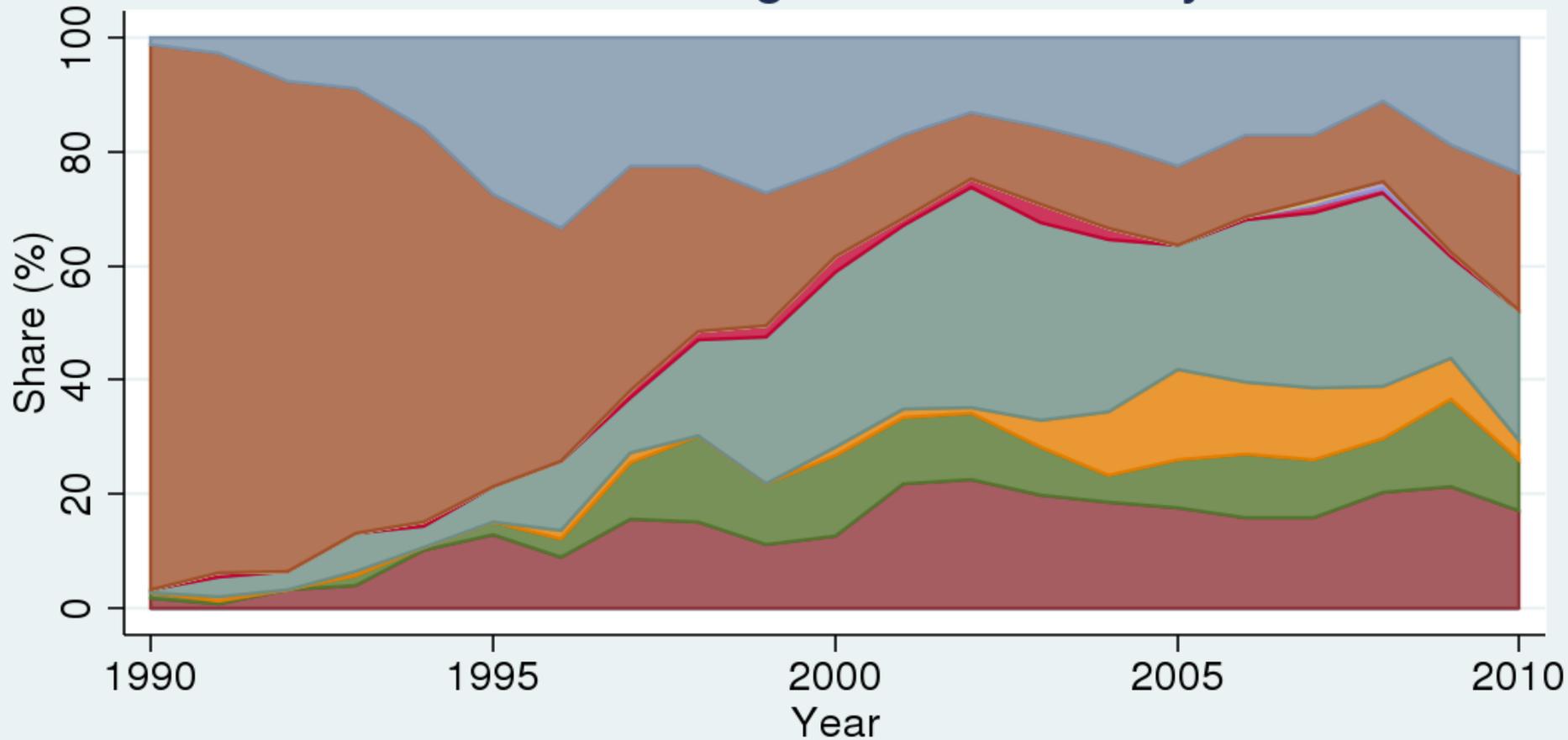
Distribution of Count

# Targets in All Acquisitions

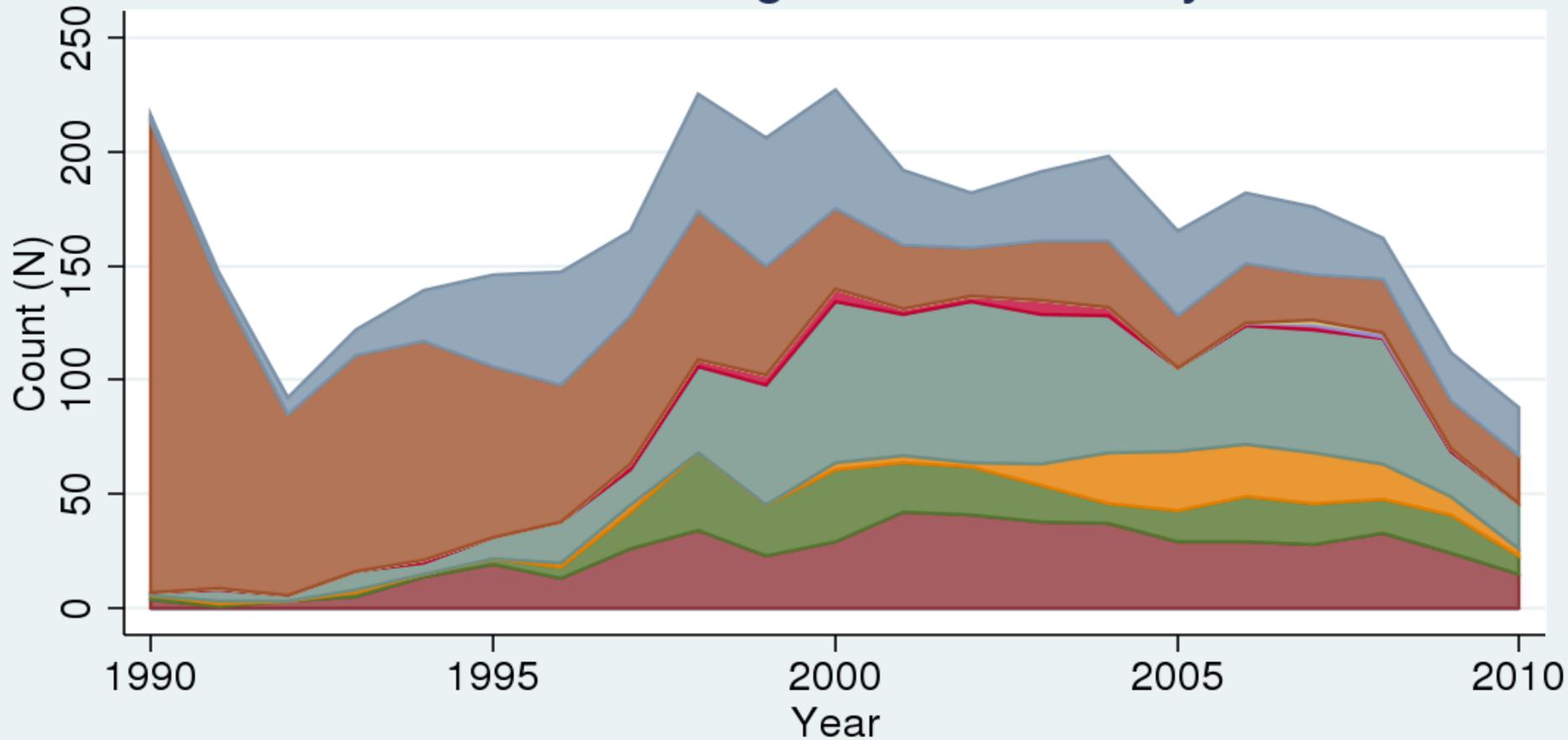


Distribution of Count

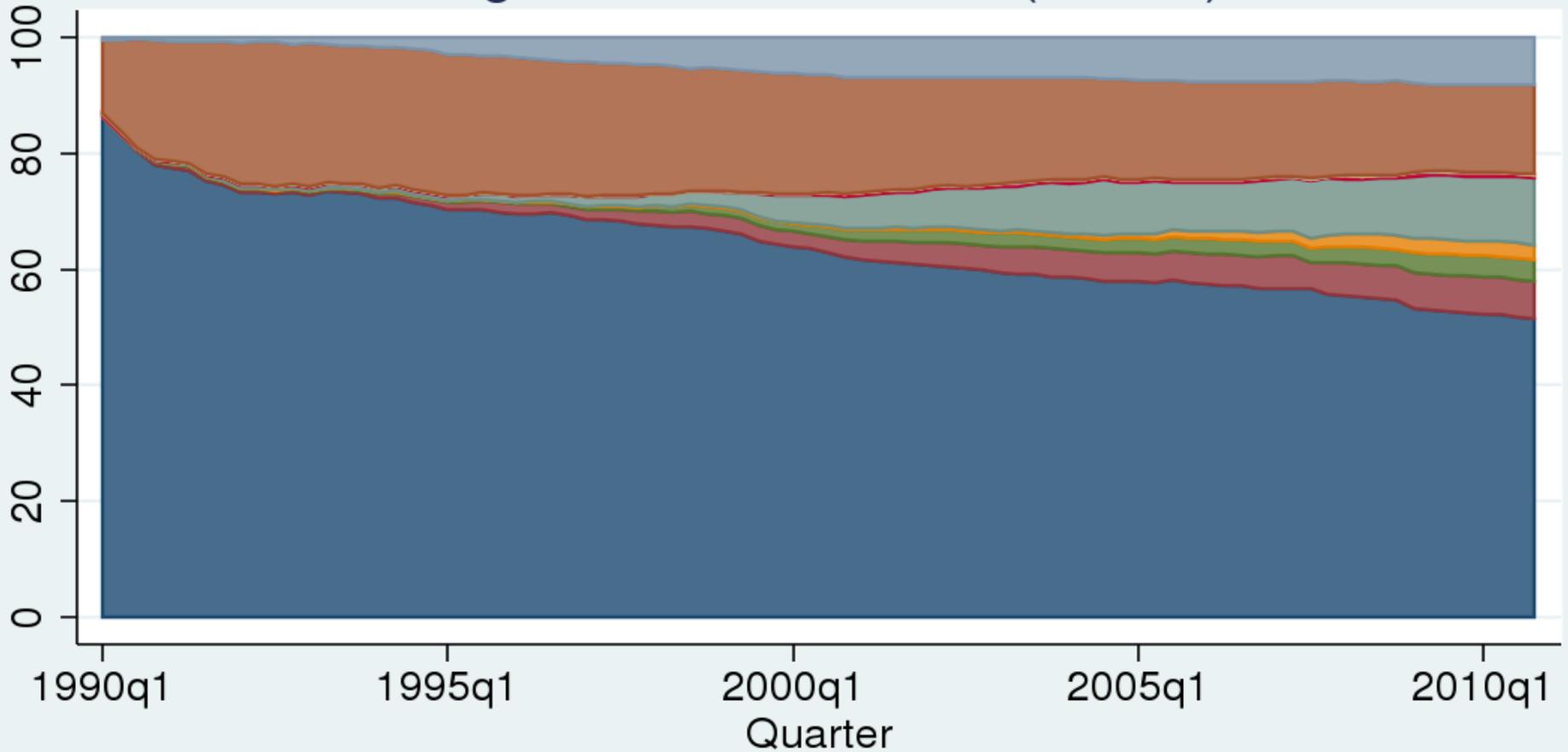
# Non-Bank Targets of Bank Buyers



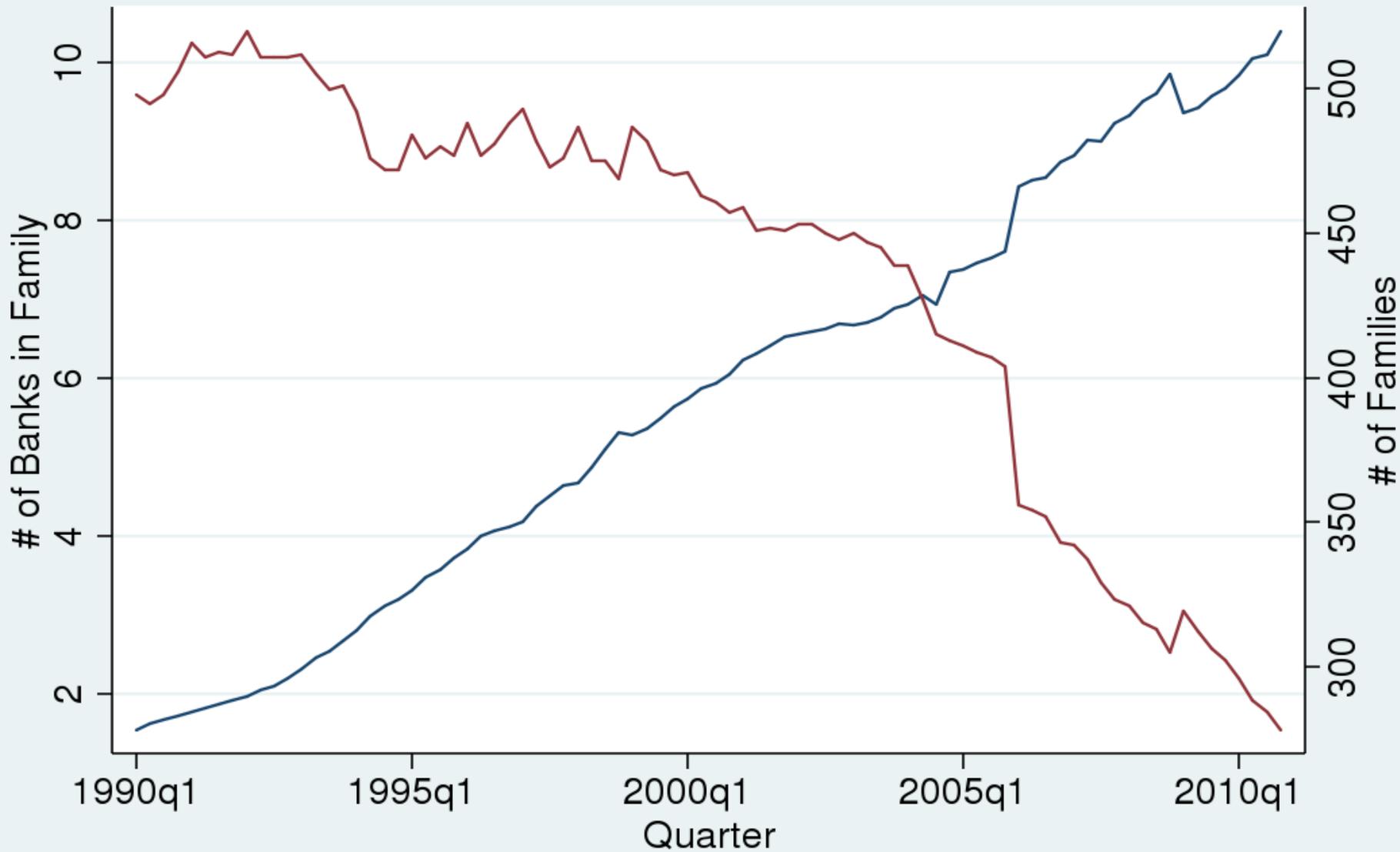
# Non-Bank Targets of Bank Buyers



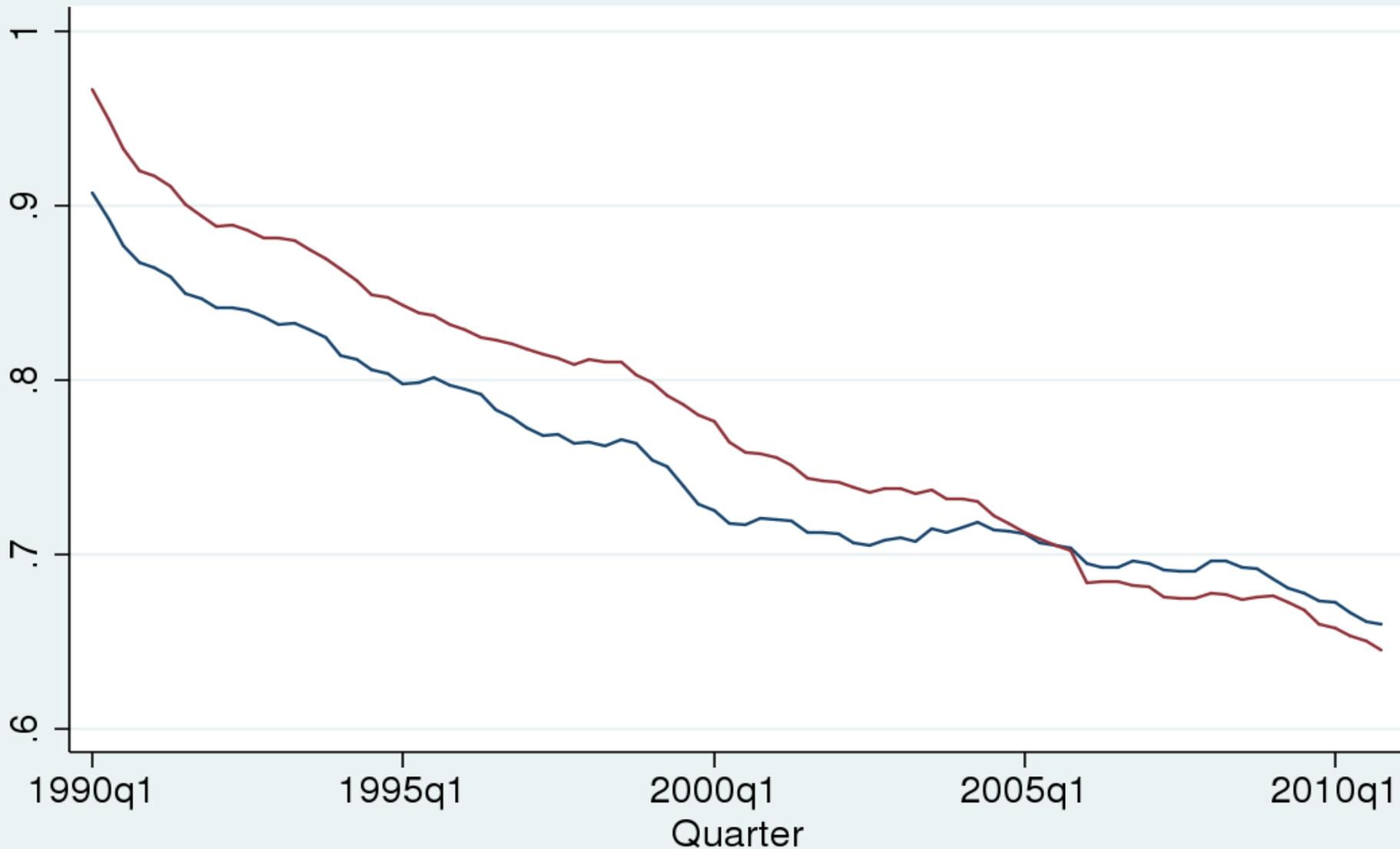
# Organizational Profile (Share)



# Absolute Concentration



# Relative Diversification



— % Banks in Family — HHI

# Key Observations

1. BHCs expanded by adding additional banks in early and mid-1990s
2. BHCs became less bank-centric starting in mid-1990s
3. Phenomenon was very widespread
4. Financial firms other than BHCs also expanded scope.

# Conglomerated Specialists

- In the “shadow banking” model, there are many specialist firms, with more *market mediation* of transactions.
- Some traditional agency frictions are resolved, but other frictions are created (e.g. Ashcraft and Schuerman, 2008)
- Folding specialists under common ownership and control provides access to internal capital markets, deal flow and information.
- BHC expansion is an efficient solution to modern intermediation frictions

# Summary

- Documented a significant process of organizational transformation of banks over the last 30 years
- Massive consolidation (we knew already) but also substantial and widespread expansion into nonbank industries via acquisition
- A lot done by the largest BHCs but process diffused

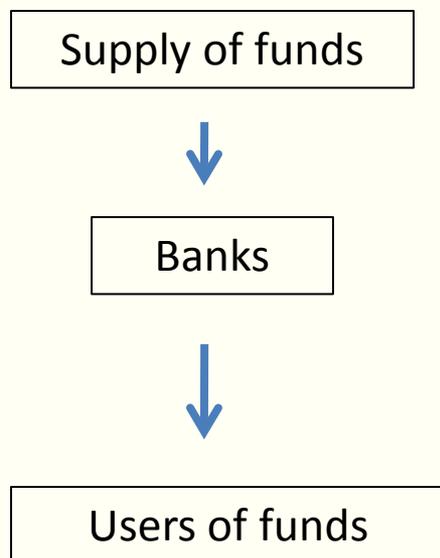
# Implications

- Expanded scope and complexity of individual BHCs
- Industrial organization of finance is changing profoundly
  - More market interactions
  - More numerous and more specialized firms (in BHCs)
- Increasingly less bank-centric BHCs
  - Consolidated supervision
  - Cooperation among larger set of functional regulators



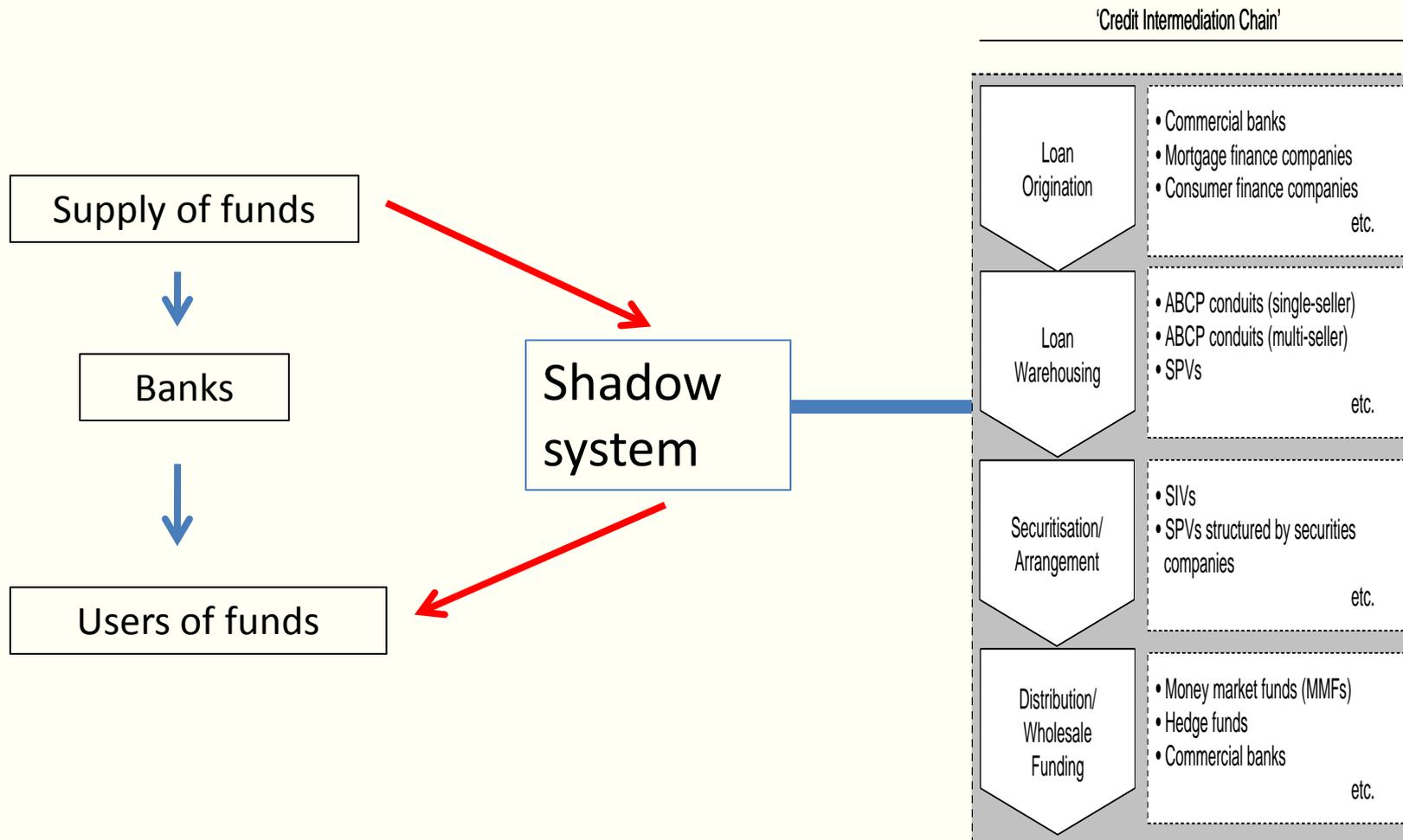
# Traditional model of intermediation

Traditional model. Banks are the main brokers in the process of credit intermediation



Intermediation activity on banks' balance sheet

# New model of intermediation



# Implications of shadow financial intermediation

- What is the role of regulated intermediaries?
- Should we expand the boundaries of regulatory oversight?
- Moving target? Regulation itself may spur growth of new shadow markets and activities
- If intermediation done outside of regulated entities, should we extend scope of government guarantees?

# Monitoring and regulatory implications

- Differences in monitoring and regulatory approaches depending on whether:
  - Shadow banking starts and develops “independently”
  - Banks and shadow banks are intimately connected.

# A contribution to this debate

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Volume 18 Number 2

## ECONOMIC POLICY REVIEW

SPECIAL ISSUE:  
THE EVOLUTION OF  
BANKS AND FINANCIAL  
INTERMEDIATION

July 2012

**1. *The Evolution of Banks and Financial Intermediation: Framing the Analysis***

Nicola Cetorelli, Benjamin H. Mandel, and Lindsay Mollineaux

**2. *Regulation's Role in Bank Changes***

Peter Olson

**3. *The Rise of the Originate-to-Distribute Model and the Role of Banks in Financial Intermediation***

Vitaly M. Bord and João A. C. Santos

**4. *The Role of Bank Credit Enhancements in Securitization***

Benjamin Mandel, Donald Morgan, and Chenyang Wei

**5. *The Role of Banks in Asset Securitization***

Nicola Cetorelli and Stavros Peristiani

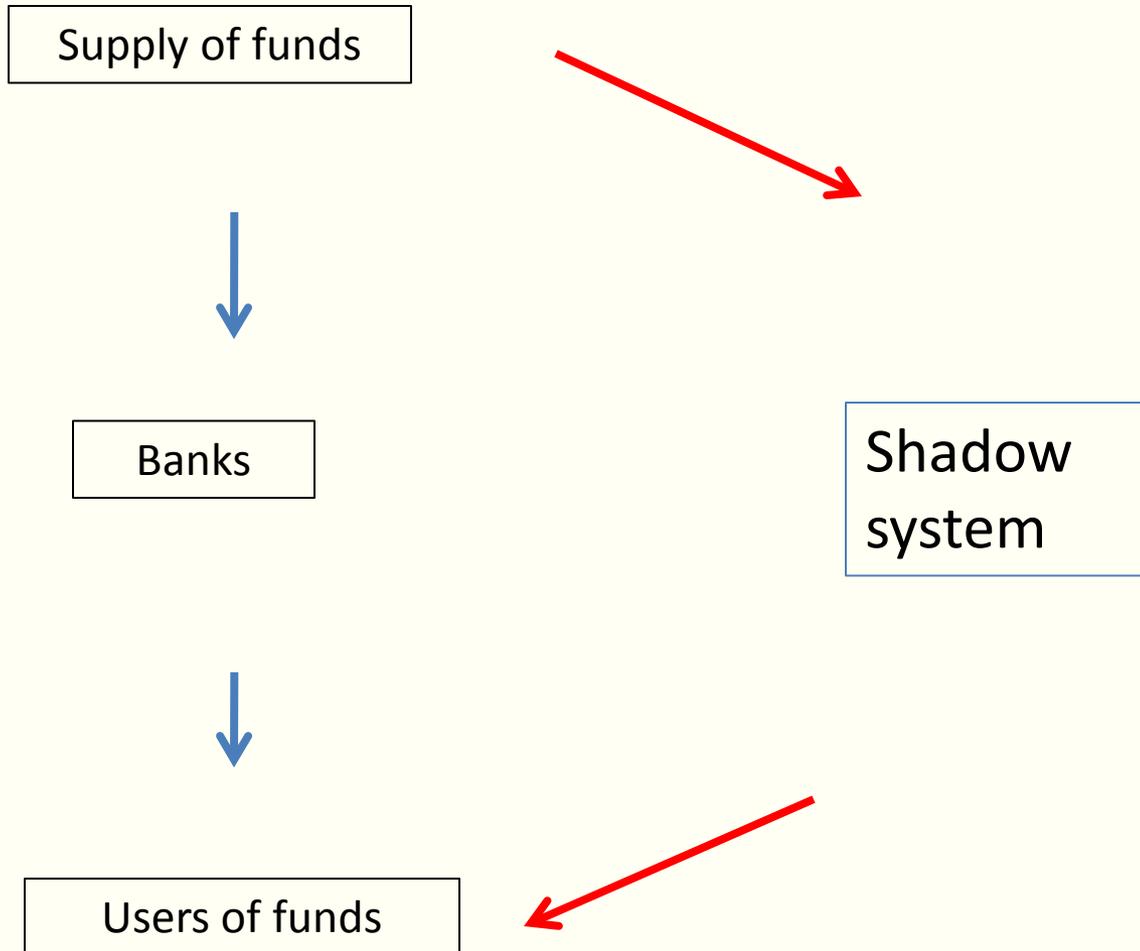
**6. *A Structural View of U.S. Bank Holding Companies***

Dafna Avraham, Patricia Selvaggi, and James Vickery

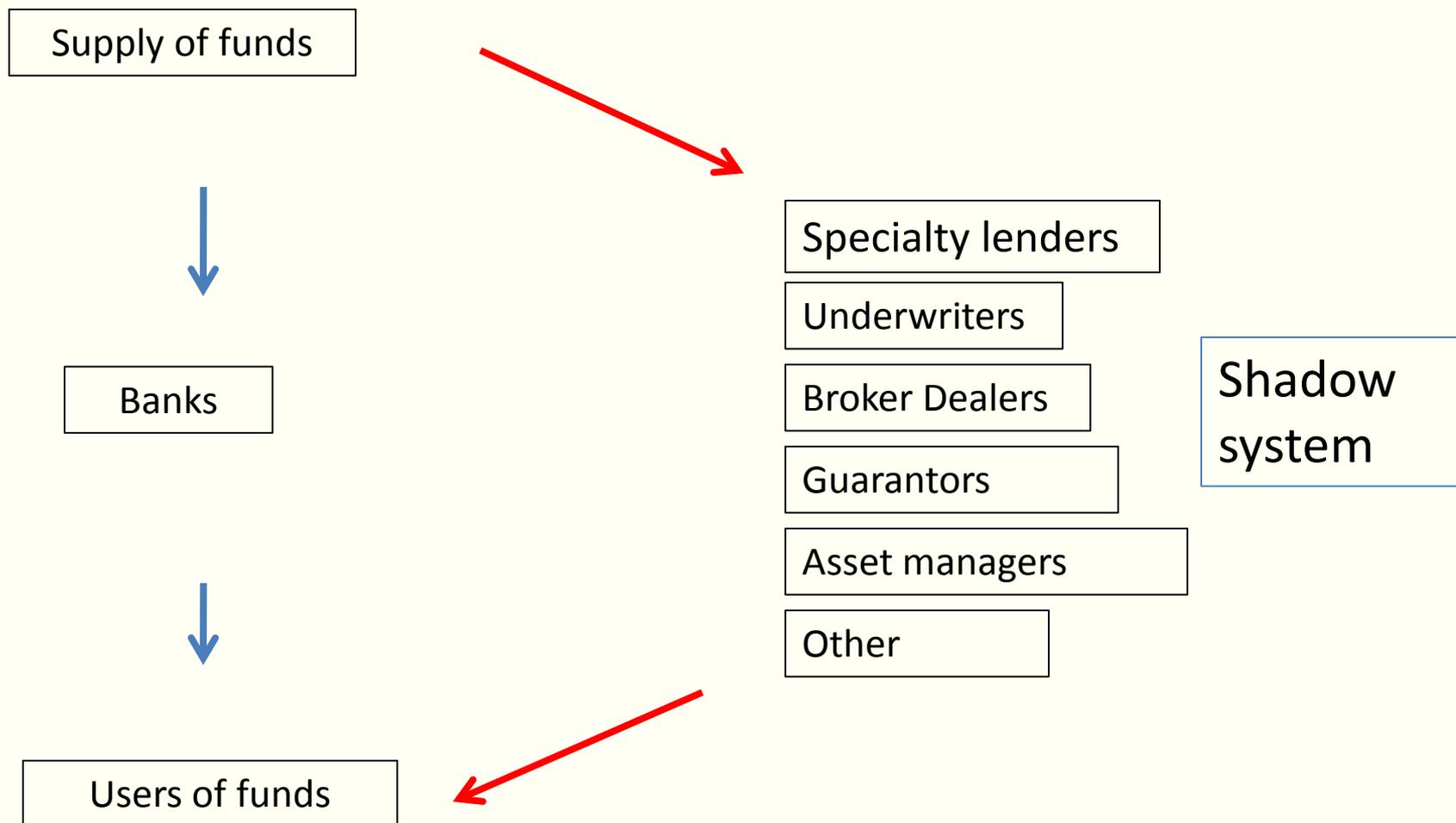
**7. *Heterogeneity among Larger Bank Holding Companies: 1994 to 2010***

Adam Copeland

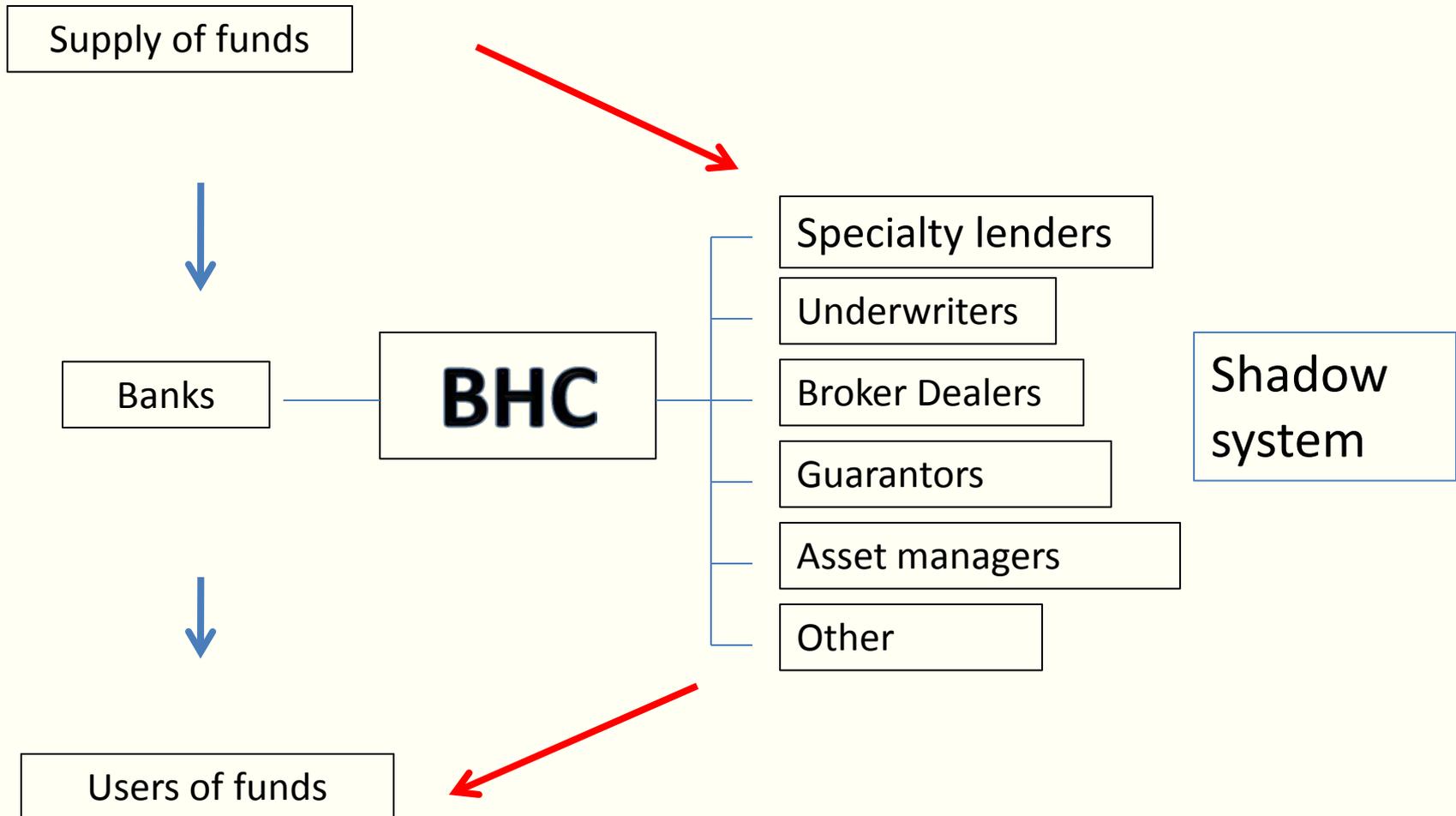
# Expansion of the boundaries of the banking firm



# Expansion of the boundaries of the banking firm



# Expansion of the boundaries of the banking firm



# Why the BHC umbrella?

- A bank IO argument
- In traditional model the commercial bank emerges as an efficient device to resolve a number of well known information frictions (liquidity, screening, monitoring, etc.)

# Implications for bank complexity

- Organizational approach offers a key to understanding evolution of intermediaries and shadow banking
- Also instrumental to another “hot” topic, that of bank complexity
- A possible link: bank complexity a natural evolution to an increasingly complex intermediation technology

# Implications for policy

- If transformation into complex organization driven by evolving industry/technology, then break ups, capping, not necessarily best policies.
- Perhaps fueling growth of shadow banking (regulatory arbitrage, emergence of nonbank alternatives, etc).