Evolving Intermediation

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Focus on financial intermediation

- Debate on size and complexity of financial sector really centered on financial intermediation
- Systemic externalities associated with financial intermediation activity well recognized
  - Maturity transformation and “run” risk
  - Liquidity transformation and shock amplification (e.g., fire sales)
  - Disruption in the provision of essential input (credit) in real economic activity

Two current issues in financial intermediation

1. Costs and benefits of large and complex financial intermediaries
   – Is there a “large” that is “too large”, or “too complex”?
   – What does “large” even mean?
   – Recovery and resolution
   – International dimension. Identification of G-SIFIs. Additional supervisory scrutiny.

Two current issues in financial intermediation

2. The rise and growth of shadow financial intermediation
   - "Credit intermediation involving entities and activities outside the regular banking system." (Financial Stability Board report)
   - Who does intermediation?
   - What is the role of regulated entities?
   - Should we expand the boundaries of regulatory oversight?

Implications of shadow financial intermediation

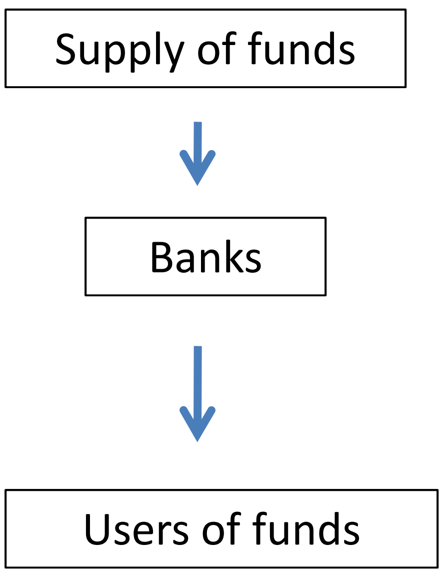
- Regulation itself may spur growth of shadow markets and activities
- If intermediation done outside of regulated entities, should we extend scope of government guarantees?
- Perfect tie with issue of size and complexity: What better definition of complexity of something that is even difficult to identify, let alone monitor and regulate?

Evolution of banks and shadow banking

- How has financial intermediation evolved?
- Have banks – regulated intermediaries – adapted and remained central to the process of intermediation?
- To what extent has intermediation activity instead really moved in the shadow?

Traditional model of intermediation

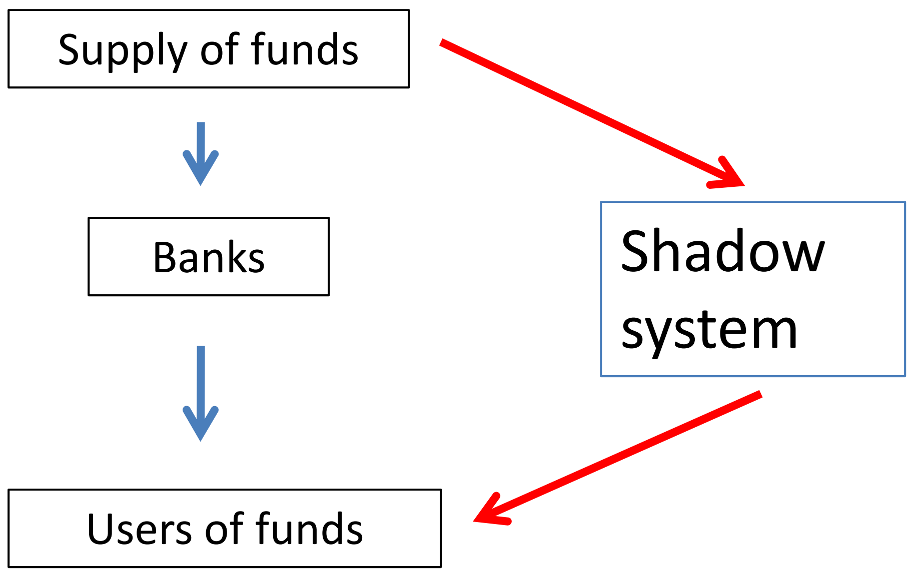
Banks are the main brokers in the process
of credit intermediation



Intermediation activity on banks' balance sheet

New model of intermediation. Two views.

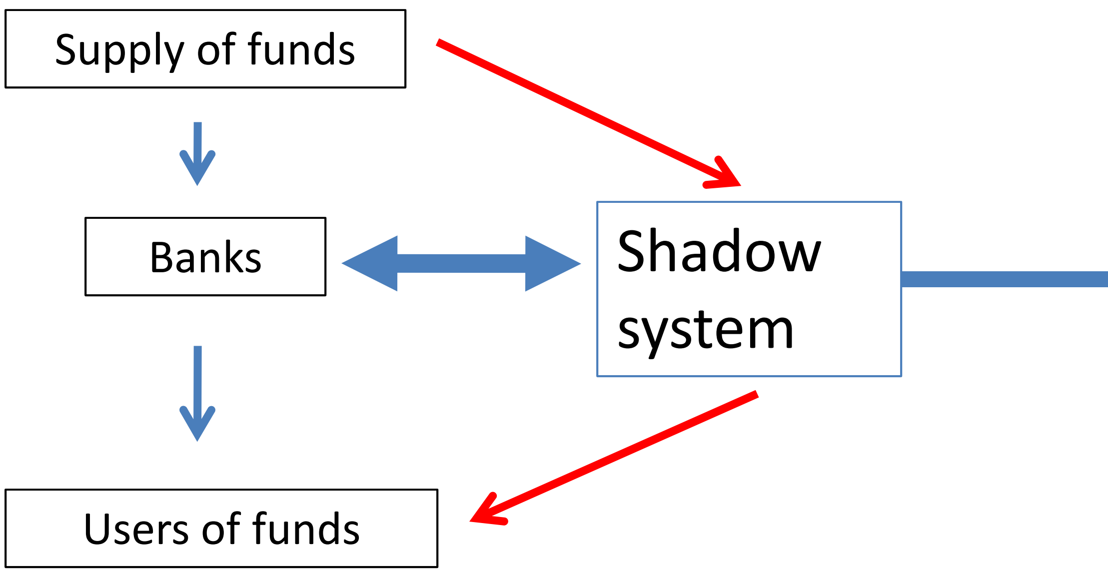
1. Intermediation "technology" the same, but banks bypassed by new, unregulated entities

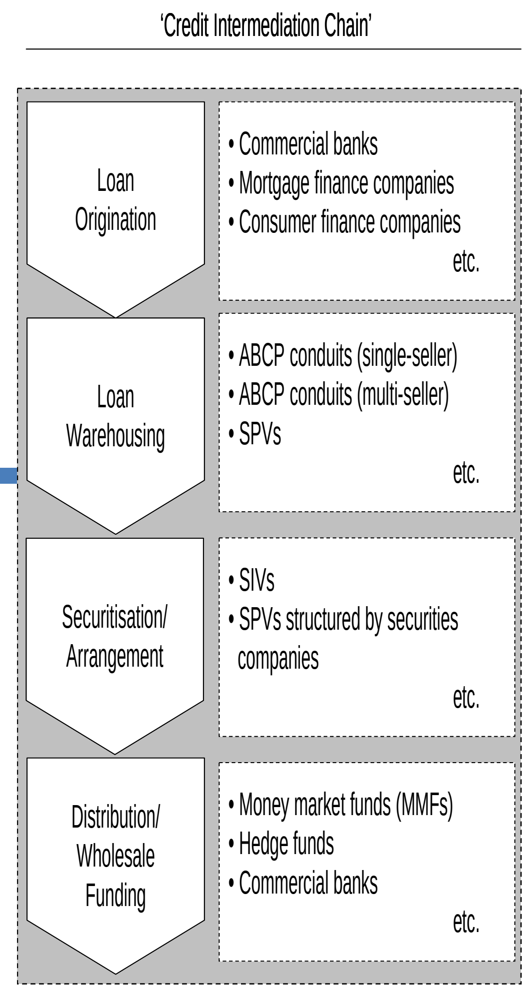


Banks lose centrality and become less relevant

New model of intermediation. Two views.

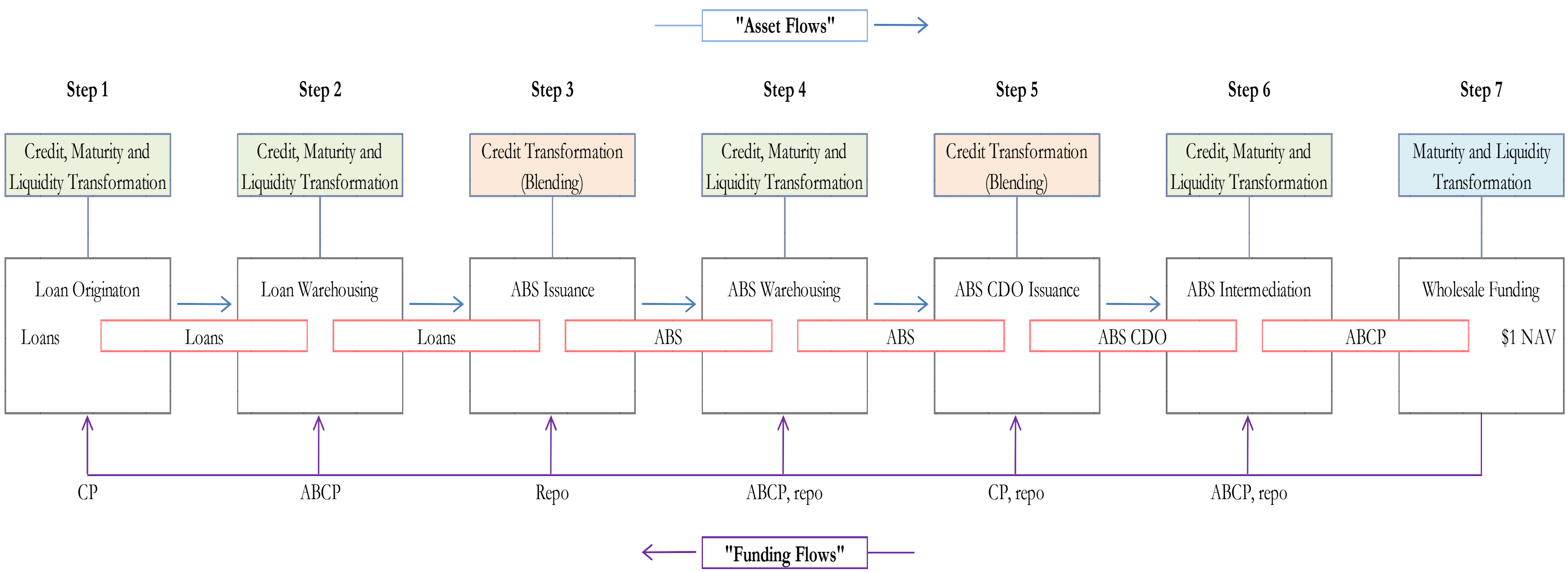
2. Technology changes, new entities and markets emerge, but banks adapt





Banks remain an integral part in the new model of intermediation

A more detailed view of the modern credit intermediation chain



Source: Shadow Banking (Pozsar, Adrian, Ashcraft, Boesky (2010))

Slide courtesy of Tobias Adrian

Very different implications depending on what is the "correct" view

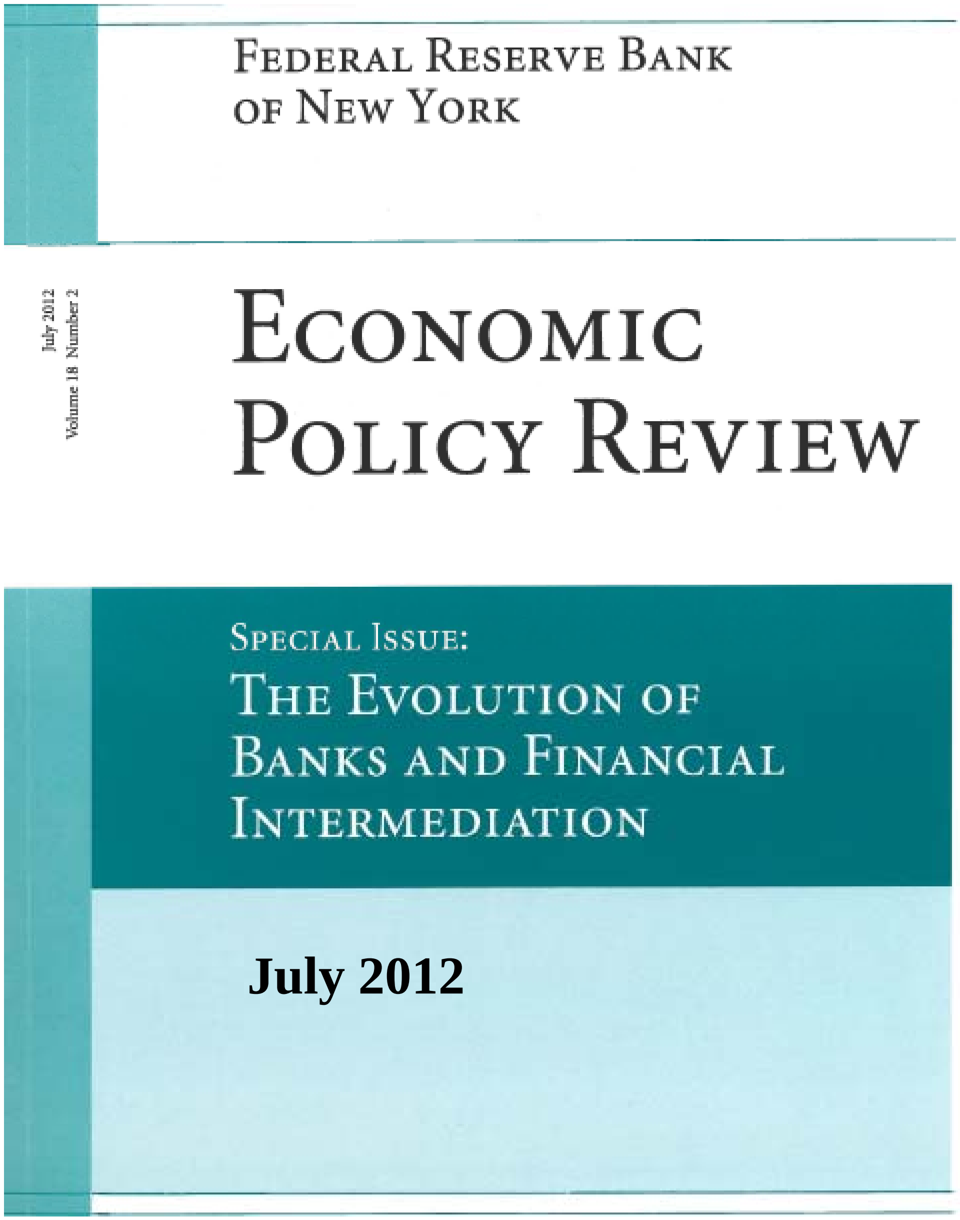
- Differences in monitoring and regulatory approaches depending on whether:
  - Shadow banking starts and develops "independently"
  - Banks and shadow banks are intimately connected.

- Current regulatory options on the table refer to what already recognized as previously “in the shadow”
- Necessarily so: Regulation is subordinated to identification

Forward-looking monitoring

- Are the monitoring and regulatory efforts in place suited to capture the dynamic evolution of modern intermediation?
- Much of future evolution itself the result of new monitoring and regulatory measures put in place to handle the recent past

A contribution to this debate



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

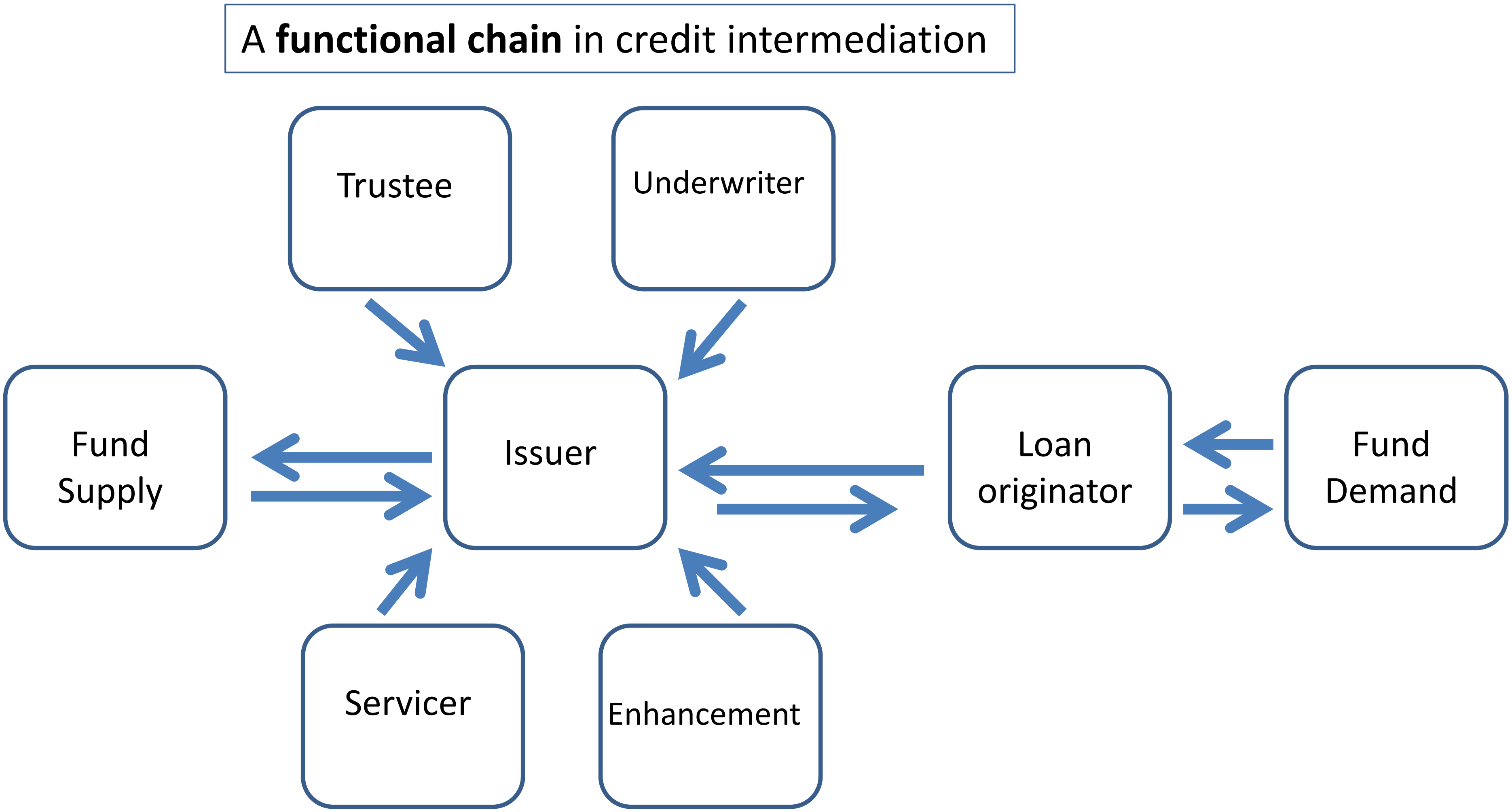
6. *A Structural View of U.S. Bank Holding Companies*
Dafna Avraham, Patricia Selvaggi, and James Vickery

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

A new framework of analysis. Two-prongs approach

1. **Role-based** analysis. Modern intermediation requires “new” roles along the intermediation chain. Who offers those roles?

New map of financial intermediation



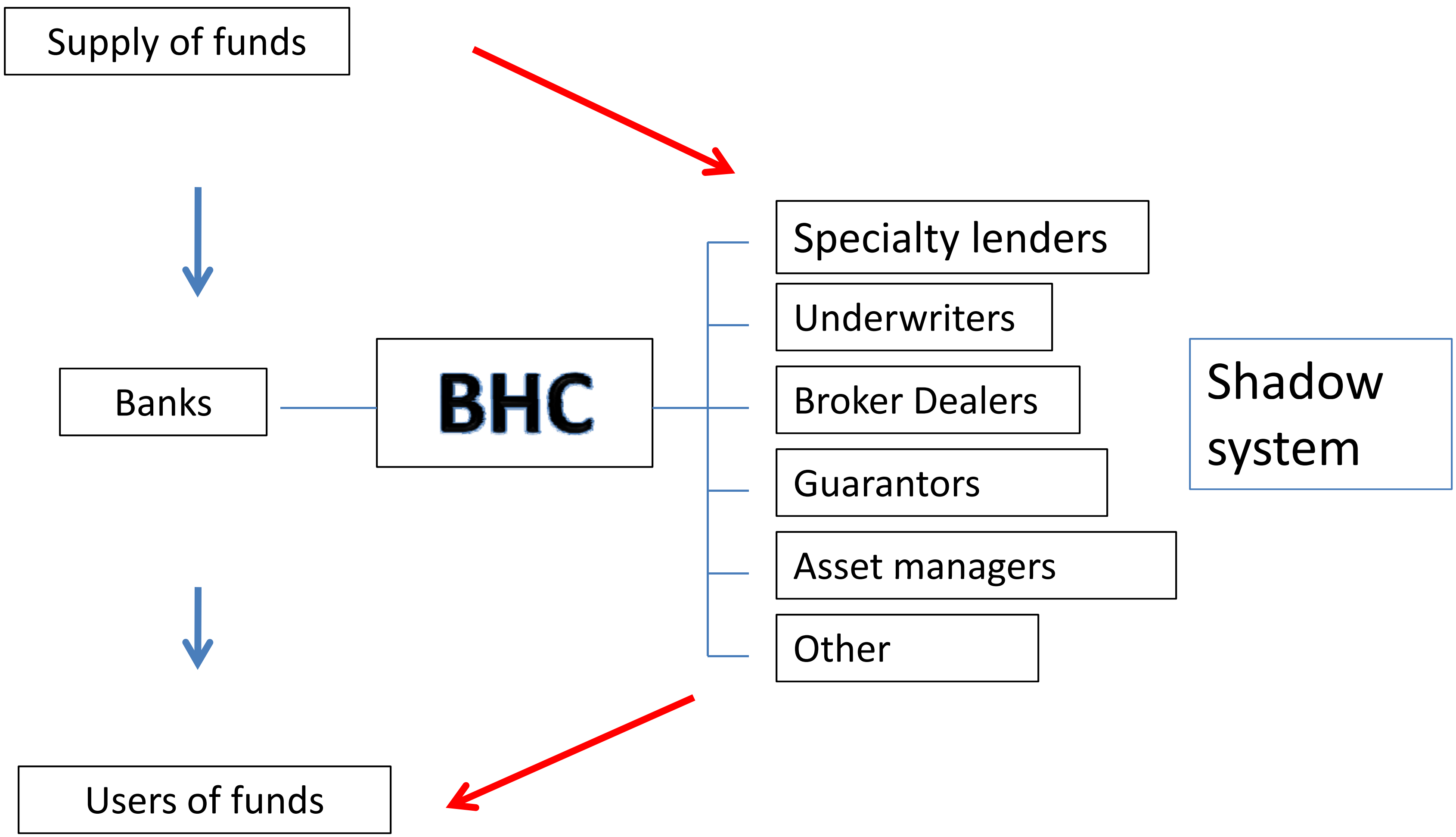
Map morphologically equivalent to Poszar et al (2010). It stresses *roles / functions* rather than *steps / markets* along the chain.

A new framework of analysis. Two-prongs approach

1. **Role-based** analysis. Modern intermediation requires “new” roles along the intermediation chain. Who offers those roles?

2. **Entity-based** analysis. Adaptation by banks through organizational changes: expand the boundaries of the banking firm. Incorporation of non-bank, specialized intermediaries under common ownership and control. Shift focus from *commercial bank* to *bank holding company.*

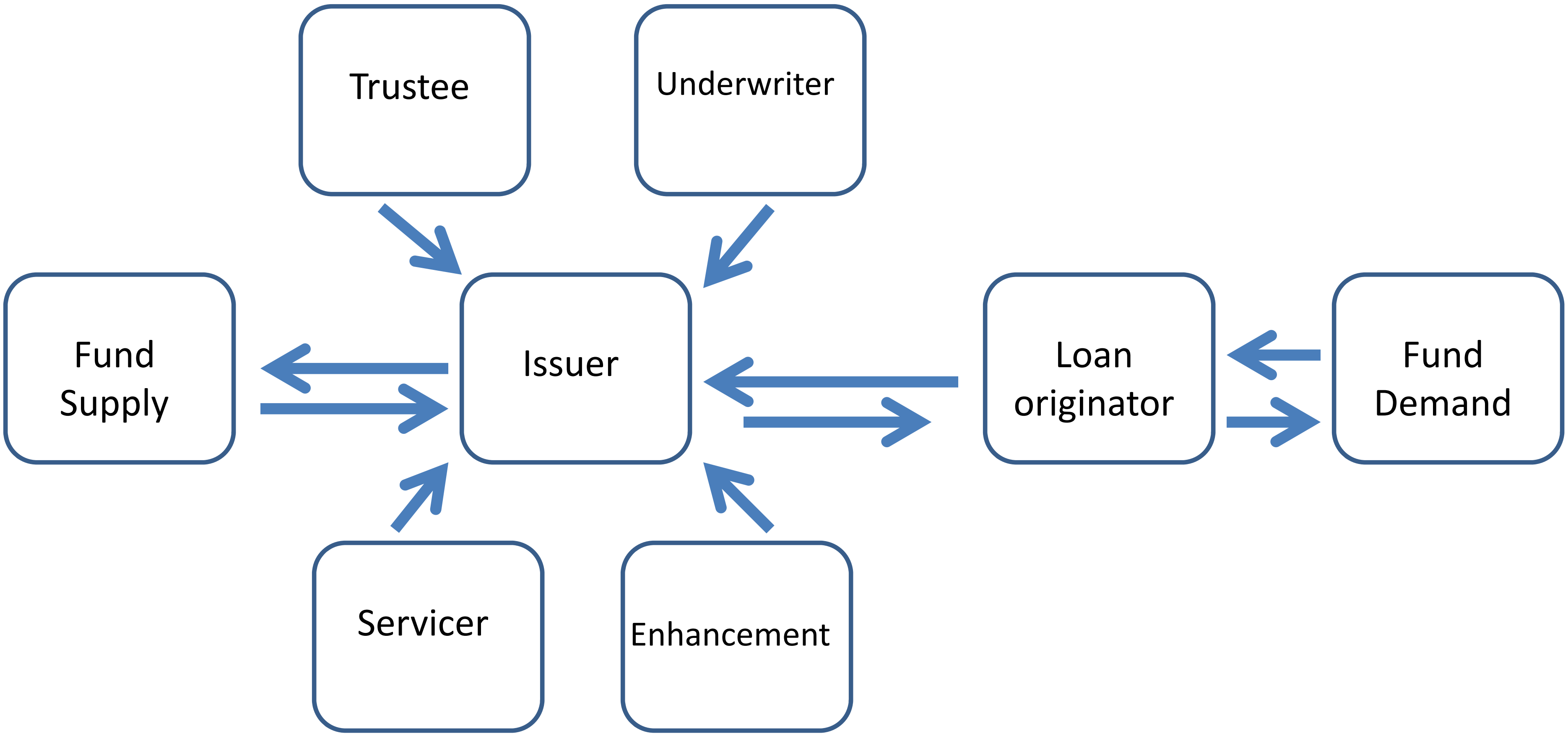
Expansion of the boundaries of the banking firm



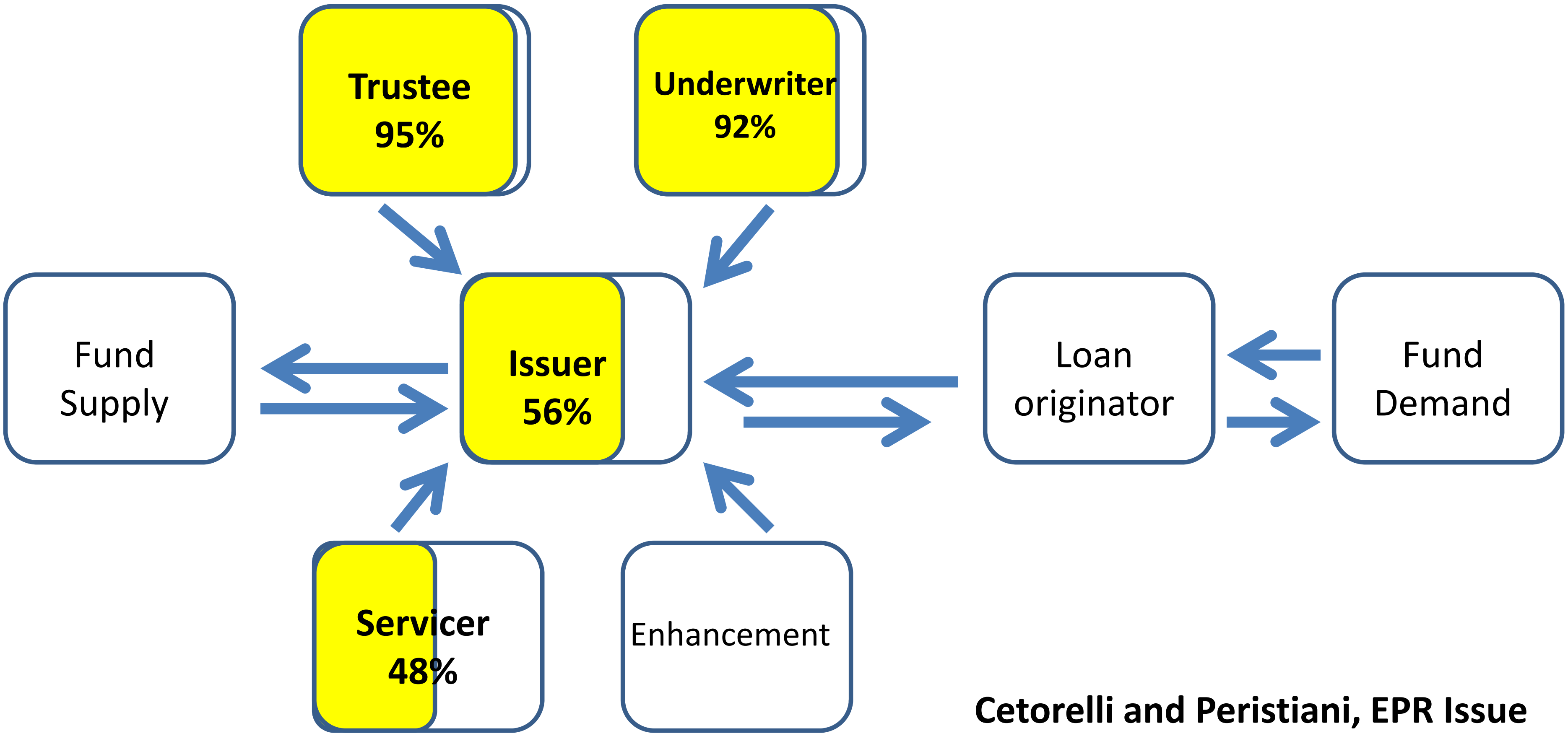
The evidence

- Direct role. Banks are active participants in many of the steps of the credit intermediation chain.
- Indirect role: Banks are main providers of credit and liquidity support to shadow banks
- Organizational adaptation. Banks’ organizational structure has indeed grown increasingly complex over the last twenty years. Increasing role played by non-bank subsidiaries

Back to the map

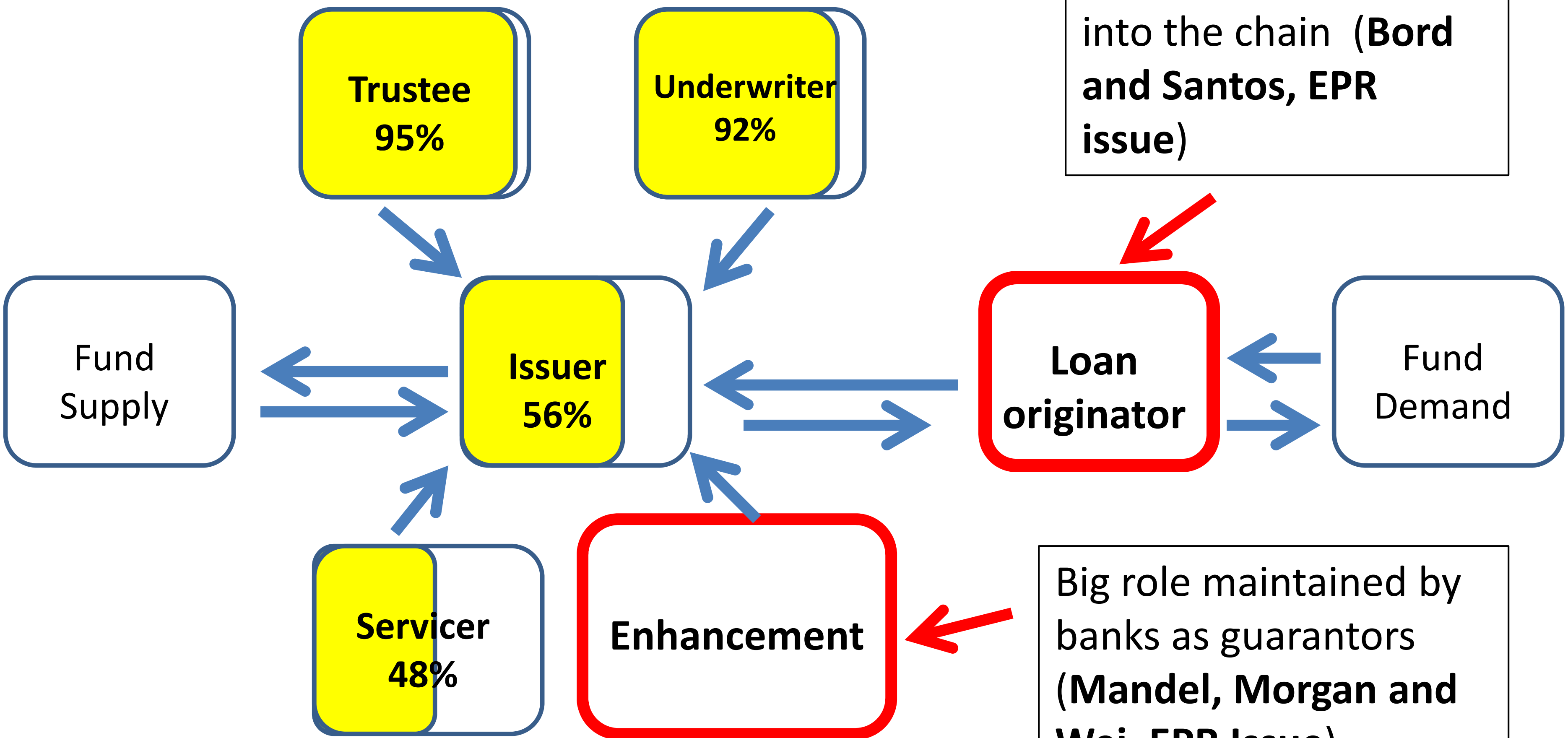


Dominant role of BHCs along the credit intermediation chain



Cetorelli and Peristiani, EPR Issue

Dominant role of BHCs along the credit intermediation chain



Banks as input feeders into the chain (**Bord and Santos, EPR issue**)

Big role maintained by banks as guarantors (**Mandel, Morgan and Wei, EPR Issue**)

Organizational dynamics.
Mergers and Acquisition, U.S. Financial Industry, 1982-2012

Buyer	**Target** Asset Manager	Bank	Broker-Dealer	Fin Techn	Ins Broker	Ins Underwriter	Inv Company	Savings Bank/Thrift	Specialty Lender	
Asset Manager	401	0	23	57	17	14	4	2	50	568
Bank	390	7,802	162	146	744	20	1	2,340	830	12,435
Broker-Dealer	108	8	477	70	57	5	2	6	67	800
Financial Technology	9	1	17	841	55	5	0	1	22	951
Insurance Broker	30	0	9	31	1,626	23	0	1	4	1,724
Insurance Underwriter	90	5	30	104	490	1,180	0	10	55	1,964
Investment Company	17	1	2	5	4	2	11	1	64	107
Savings Bank/Thrift/M	41	581	28	5	141	6	0	1,330	217	2,349
Specialty Lender	6	17	15	26	11	5	3	19	937	1,039
	1,092	8,415	763	1,285	3,145	1,260	21	3,710	2,246	21,937

Substantial "off-diagonal" asset acquisition by banks

BHCs organizational structure in 2012

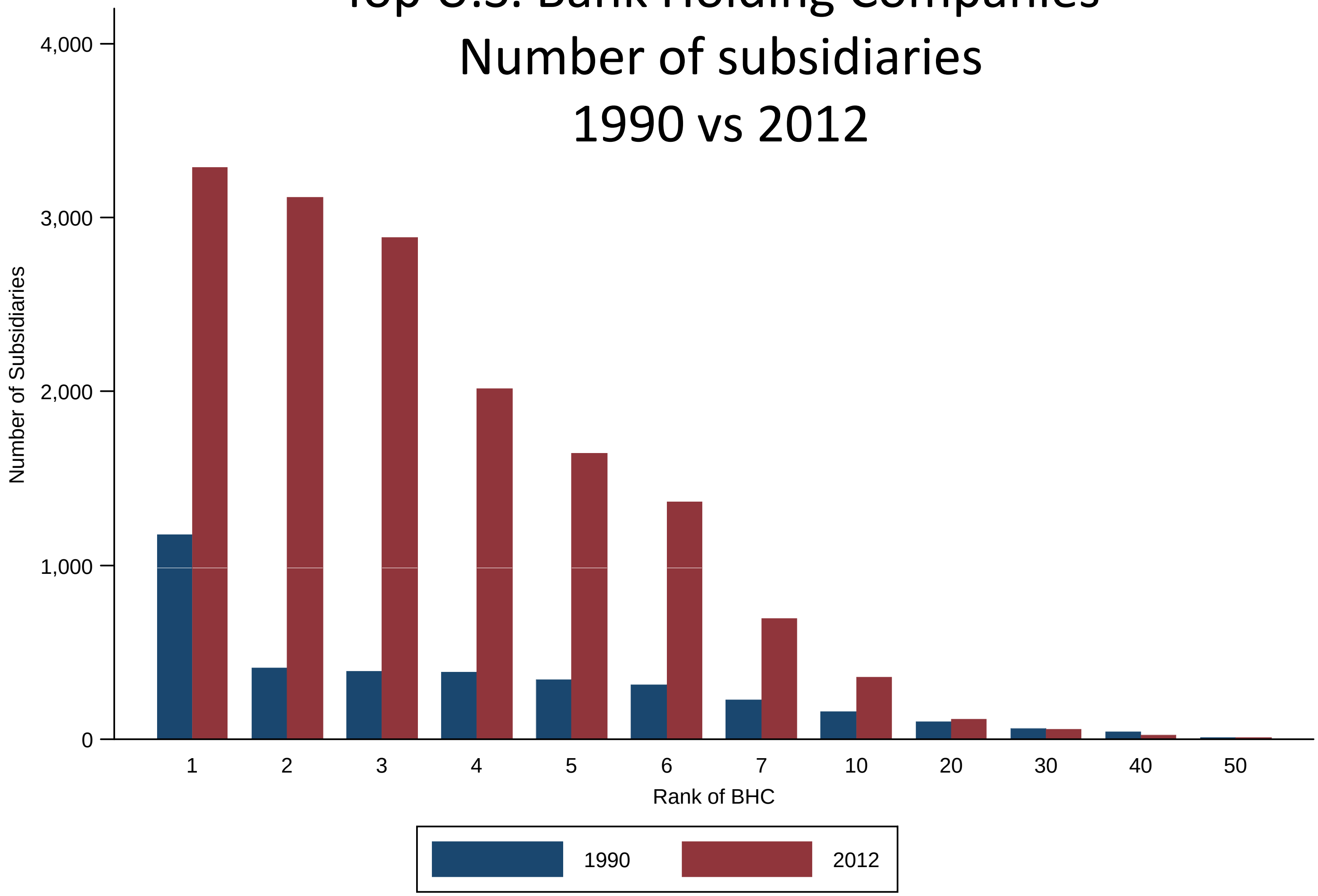
Number and Distribution of Subsidiaries: Selected Top 50 Bank Holding Companies

BHC rank	BHC Name	Number				Asset value	
		Domestic		Foreign	Total	Domestic Commercial bank (% of Y-9C Assets)	Consolidated Total Assets (Y-9C) (in billions USD)
		Commercial bank	Other				
1	Jpmorgan Chase & Co.	4	2,936	451	3,391	86.1%	2,265.8
2	Bank Of America Corporation	5	1,541	473	2,019	77.9%	2,136.6
3	Citigroup Inc.	2	935	708	1,645	68.8%	1,873.9
4	Wells Fargo & Company	5	1,270	91	1,366	92.5%	1,313.9
5	Goldman Sachs Group, Inc., The	1	1,444	1,670	3,115	11.2%	923.7
6	Metlife, Inc.	1	39	123	163	3.2%	799.6
7	Morgan Stanley	2	1,593	1,289	2,884	10.5%	749.9
10	Bank Of New York Mellon Corporation, The	3	211	146	360	83.2%	325.8
20	Regions Financial Corporation	1	35	4	40	97.1%	127.0
30	Comerica Incorporated	2	72	2	76	99.8%	61.1
40	First Horizon National Corporation	1	35	1	37	99.1%	24.8
50	Webster Financial Corporation	1	21	0	22	99.8%	18.7
Total		86	13,670	5,847	19,603	70.4%	14,359.1

Notes: Structure data are as of February 20, 2012. Financial data are as of 2011Q4. The number of subsidiaries of each BHC is determined based on the Regulation Y definition of control. Asset data include approximately 3,700 of the more than 19,600 subsidiaries belonging to the top 50 BHCs that meet particular reporting threshold criteria.

Avraham, Selvaggi and Vickery, EPR issue

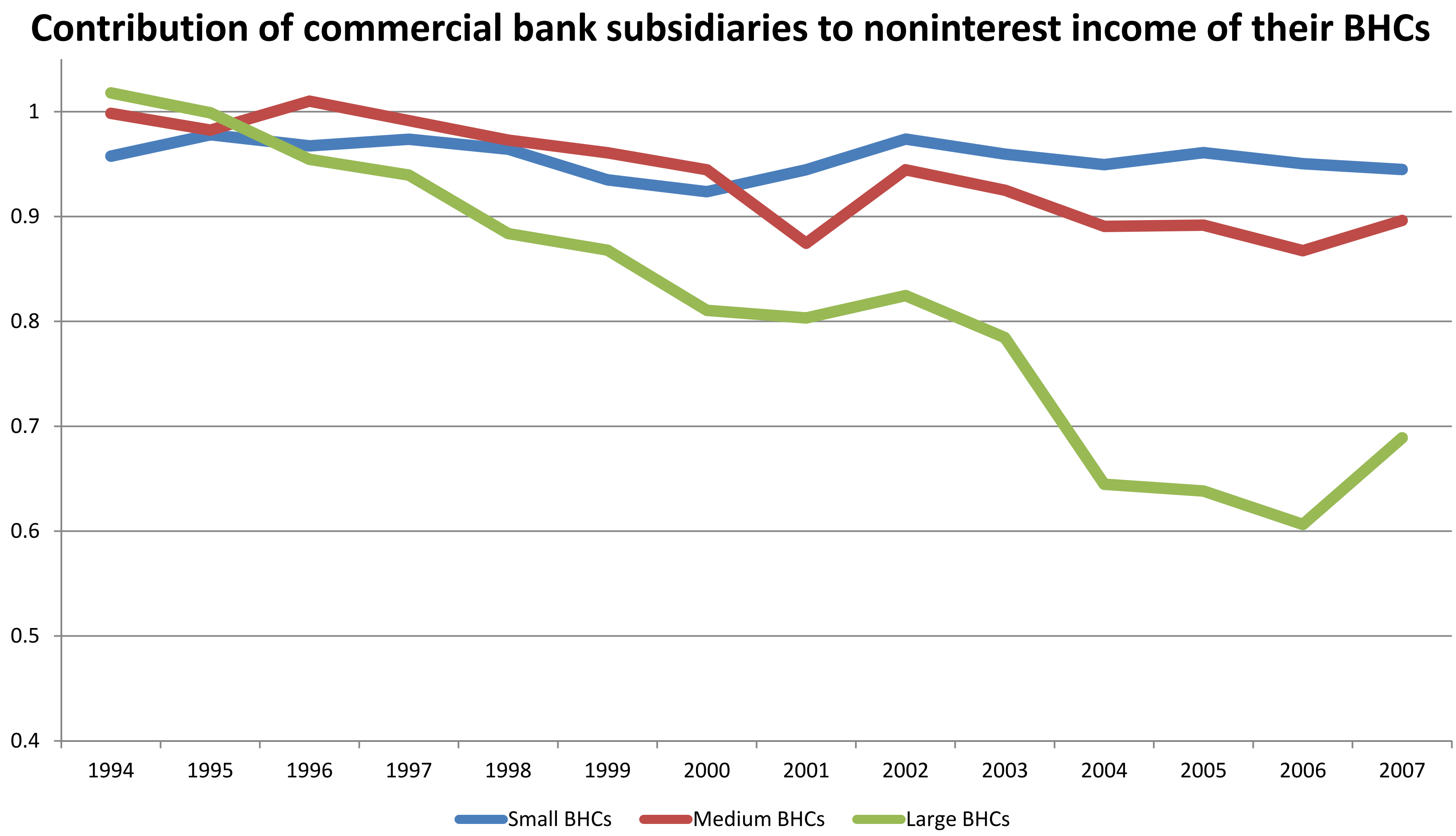
Top U.S. Bank Holding Companies
Number of subsidiaries
1990 vs 2012



Notes: Structure data are as of February 20, 2012, and December 31, 1990, and include the top 50 BHCs at each of these dates.

Avraham, Selvaggi and Vickery, EPR issue

Increasing role of non-bank subsidiaries



Copeland, EPR issue

Summing up

- Modern system of financial intermediation is complex
- Many more entities other than banks involved (rise of “shadow banks”)
- Risks moved away from banks’ balance sheet
- Huge monitoring and regulatory implications
  - Expand regulatory umbrella outside of banking
  - Expand official “wrap”
  - Curb complexity

Bottom line: When looked closely, modern financial intermediation seems less “shadowy” than we thought

Regulated bank entities have kept a considerable footprint in modern financial intermediation.

How do we track *future* evolution?

Current regulatory option: expand perimeter of prudential supervision to what recognized as “in the shadow”

But new regulation may be a source of future shadow banking

Our analysis suggests if new products or activities emerge, there’s a very good chance a bank will be part of it.

A tool for effective forward-looking monitoring

Intermediation has certainly grown complex, but the monitoring of banks can still provide an effective window into its continuous evolution, thus allowing for the identification of new risks and the design of prompt regulatory measures

Stress the role of bank supervisory agencies (focus on whole BHC structure) for effective forward-looking monitoring, before embarking in the possible creation of new regulatory bodies.