

Connectedness and Contagion

Hal S. Scott

Nomura Professor of International Financial Systems

Harvard Law School

Director of Committee on Capital Markets Regulation

LSE Conference

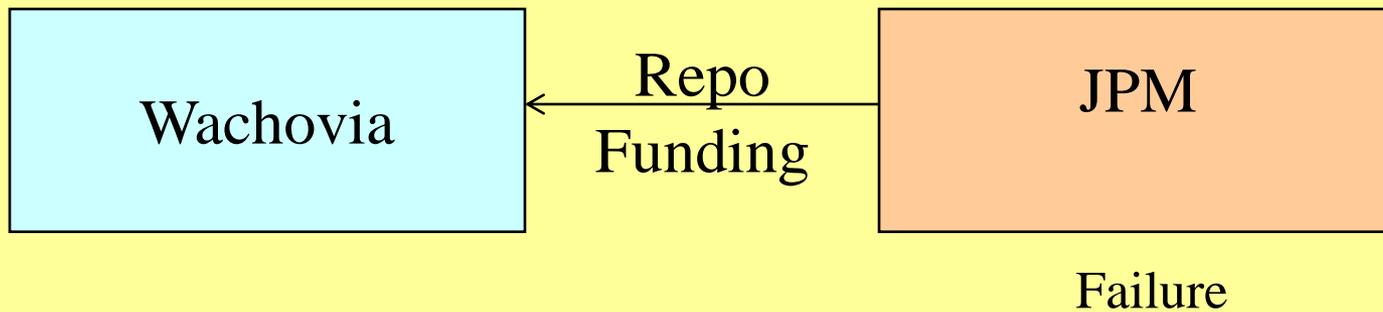
September 17, 2013

Connectedness

Asset Connectedness



Liability Connectedness



Claims Filed Against LBHI and Affiliated Chapter 11 Debtors

(\$ in billions)

		Initial Plan (Apr. 2010)		Modified Third Amended Plan (Aug/Dec 2011)*	
Claim Type	Filed	Outstanding	Allowed	Outstanding	Allowed
Direct	\$ 210	\$ 183	\$ 102	\$ 110	\$ 110
Intercompany	\$ 80	\$ 56	\$ 43	\$ 52	\$ 52
Guarantee	\$ 570	\$ 367	\$ 115	\$ 156	\$ 108
<i>Third Party</i>	\$ 255	\$ 143	\$ 94	\$ 97	\$ 95
<i>Affiliate</i>	\$ 315	\$ 224	\$ 21	\$ 59	\$ 13
Total LBHI Claims	\$ 860	\$ 605	\$ 260	\$ 320	\$ 273
All other Debtors	\$ 302	\$ 135	\$ 135	\$ 50	\$ 89
	\$ 1,162	\$ 740	\$ 395	\$ 370	\$ 362

* Claims data has been made available only for the Third Amended Plan, but the Modified Third Amended Plan is presumably based on the same claims data as the Third Amended Plan. Thus, in the claims context, all references in this report to the Modified Third Amended Plan are based on information from the disclosure statement for the Third Amended Plan.

AIG: Maximum Losses on Multi-Sector CDS Relative to Equity (*\$ billions*)

Firm	Exposure to Maiden Lane III Portfolio	Collateral Posted Prior to Bailout	Max. Possible Loss	Shareholders' Equity (Q2 2008)	Max. Possible Loss as % of Shareholders' Equity
Société Générale	\$16.5	\$5.5	\$11.0	\$56.1	19.6%
Goldman Sachs	14.0	5.9	8.1	44.8	18.1%
Deutsche Bank	8.5	3.1	5.4	50.3	10.7%
Merrill Lynch	6.2	1.3	4.9	42.2	11.6%
Calyon	4.3	2.0	2.3	56.9	4.0%
UBS	3.8	0.5	3.3	42.2	7.8%
Ten other banks	8.8	0.2	8.6		
Total	\$62.1	\$18.5	\$43.6		

U.S. Commercial and Investment Banks

Summary of Assets and Liabilities at Year End 2008 (\$ in Millions)

	JPMorgan	Citigroup	Bank of America	Wells Fargo	Goldman Sachs	Morgan Stanley
Balance sheet date	12/31/2008	12/31/2008	12/31/2008	12/31/2008	11/28/2008	11/30/2008
Total assets	\$2,175,052	\$1,945,263	\$1,817,943	\$1,309,639	\$884,547	\$658,812
Liabilities:						
Deposits	\$1,009,277	\$774,185	\$882,997	\$781,402	\$27,643	\$42,755
Secured repo ^(a)	192,546	205,293	206,598	62,203	118,626	129,749
CP and other short-term	37,845	126,691	158,056	45,871	52,658	10,483
Non-deposit short-term	230,391	331,984	364,654	108,074	171,284	140,232
Trading account, derivative, brokerage, and other ^(b)	166,878	238,452	87,996	--	429,815	245,112
Accrued expenses and other ^(c)	187,978	90,275	36,952	53,921	23,216	16,445
Other ^(d)	142,961	--	--	--	--	--
Long-term debt	270,683	359,593	268,292	267,158	168,220	163,437
Total liabilities	2,008,168	1,794,489	1,640,891	1,210,555	820,178	607,981
Shareholders' equity	166,884	150,774	177,052	99,084	64,369	50,831
Total liabilities and equity	\$2,175,052	\$1,945,263	\$1,817,943	\$1,309,639	\$884,547	\$658,812
Non-deposit short-term debt % assets	10.6%	17.1%	20.1%	8.3%	19.4%	21.3%
<i>% as of Year End 2010</i>	<i>14.7%</i>	<i>14.0%</i>	<i>13.5%</i>	<i>4.4%</i>	<i>28.5%</i>	<i>23.6%</i>

(a) Includes federal funds purchased and sold, securities borrowed, loaned, or sold under repurchase agreements, plus other collateralized borrowings.

(b) Includes trading and derivative liabilities, payables to customers, counterparties, brokers, dealers, and clearing services.

(c) Includes reserves for unfunded lending commitments, allowances for credit losses, and other payables.

(d) For JPMorgan includes borrowings associated with the Federal Reserve AML facility.

Deposit and Non-Deposit U.S. Financial System Liabilities

(1950 – present, \$ in billions)

Year	1950	1960	1970	1980	1990	2000	2007	2008	2009	2010	2011	2012
MMMF Shares	\$ -	\$ -	\$ -	\$ 76	\$ 493	\$ 1,812	\$ 3,033	\$ 3,757	\$ 3,258	\$ 2,755	\$ 2,643	\$ 2,650
Open Market Paper	1	7	40	164	610	1,614	1,789	1,599	1,137	1,057	969	952
Federal Funds and Repos	(1)	(2)	1	103	336	1,001	2,119	1,238	1,488	1,272	1,141	1,123
Securities Loaned, net	-	-	-	1	71	508	1,240	887	857	733	658	580
Short-Term (est.)	0	4	41	345	1,511	4,935	8,180	7,482	6,741	5,818	5,411	5,304
GSE Liabilities	3	11	45	190	468	1,923	3,081	3,390	2,977	6,589	6,378	6,217
Agency/GSE backed pools	0	0	5	114	1,020	2,493	4,464	4,961	5,377	1,139	1,305	1,437
ABS Issuer Liabilities	-	-	-	-	269	1,504	4,515	4,101	3,288	2,231	1,983	1,767
Non-Deposit Liabilities	\$ 3	\$ 16	\$ 91	\$ 649	\$ 3,268	\$ 10,855	\$ 20,241	\$ 19,934	\$ 18,382	\$ 15,778	\$ 15,076	\$ 14,725
Comparison: Domestic Bank Deposits												
Insured	\$ 91	\$ 150	\$ 350	\$ 949	\$ 2,785	\$ 3,055	\$ 4,292	\$ 4,751	\$ 5,408	\$ 6,315	\$ 6,979	\$ 7,416
Uninsured	76	111	196	376	631	1,157	2,629	2,755	2,298	1,572	1,800	2,059
Total Deposits	\$ 168	\$ 260	\$ 545	\$ 1,324	\$ 3,415	\$ 4,212	\$ 6,922	\$ 7,505	\$ 7,705	\$ 7,888	\$ 8,779	\$ 9,475
% insured	54.4%	57.5%	64.1%	71.6%	81.5%	72.5%	62.0%	63.3%	70.2%	80.1%	79.5%	78.3%
Memo: Cap (000s)	\$ 10	\$ 10	\$ 10	\$ 100	\$ 100	\$ 100	\$ 100	\$ 100	\$ 250	\$ 250	\$ 250	\$ 250
Estimated uninsured short-term liabilities												
Non-deposit uninsured	\$ 0	\$ 4	\$ 41	\$ 345	\$ 1,511	\$ 4,935	\$ 8,180	\$ 7,482	\$ 6,741	\$ 5,818	\$ 5,411	\$ 5,304
Deposit Uninsured	76	111	196	376	631	1,157	2,629	2,755	2,298	1,572	1,800	2,059
Total Uninsured	\$ 77	\$ 115	\$ 236	\$ 720	\$ 2,141	\$ 6,092	\$ 10,810	\$ 10,236	\$ 9,039	\$ 7,391	\$ 7,211	\$ 7,393
% total short-term	45.6%	43.5%	40.4%	43.2%	43.5%	66.6%	71.6%	68.3%	62.6%	53.9%	50.8%	49.8%

Dodd-Frank/Basel Responses to Contagion

- More Capital
- More Liquidity
- Orderly Resolution

Increased Capital

- **Common Equity to RWA**
 - 4.5% baseline (2015)
 - 2.5% conservation buffer (2016-2019)
 - Discretionary (up to 2.5%) countercyclical buffer
- **Tier I Capital to RWA**
 - Increased from 4% to 6% (2015), total capital remains at 8% (Tier II decreased to 2%)
 - U.S. Basel I floor (Collins Amendment)
- **Stress Test Capital Requirements**
- **Higher capital requirements for G-SIBs**
 - Basel identifies 29 G-SIBs which will have to hold 1-2.5% additional capital depending on their systemic importance, also required by U.S. under DFA
- **Leverage Ratios**
 - Basel III: 3% of all assets (OBS included in assets) (2018)
 - U.S Implementation of Basel III for well-capitalized banks: 5% (without OBS in assets)
 - U.S. Supplemental Leverage Proposal (with OBS in assets) for G-SIBs: 6%
- **Operates in context of tougher accounting consolidation rules**

The Dog and the Frisbee



“The Dog and the Frisbee,” Speech by Mr. Andrew G Haldane, Executive Director, Financial Stability, Bank of England, and Mr. Vasileios Madouros, Economist, Bank of England.

Given at the Federal Reserve Bank of Kansas City’s 366th economic policy symposium, “The changing policy landscape,” Jackson Hole, Wyoming, 31 August 2012.

Capitalization of Bank Subsidiaries

Bank Sub Balance Sheet before recap	
Assets	Debt to Others
	Debt to Holdco \$100 bn
	Tier 1 \$25 bn

Holdco downstreams
\$75 billion of Tier 1 capital
through cancellation of
intercompany debt

Bank Sub is thus re-
capitalized at \$100
billion of Tier 1 capital



Top 10 US Bank Holding Company Subsidiary Data

As of March 31, 2012 (\$ in millions)

<u>As of March 31, 2012</u>	<u>Tier 1 Capital ⁽²⁾</u>	<u>Tier 1 Ratio ⁽³⁾</u>	<u>BHC Loans to Bank Subs (aggregate) ⁽⁴⁾</u>	<u>BHC Loans / Sub Tier 1 Capital (Col 3/Col 1)</u>
JP Morgan Chase & Co. (BHC)				
JPMorgan Chase Bank, N.A. (Sub)	\$100,846.0	9.58%	\$40,809.00	40.47%
Bank of America Corporation				
Bank of America, National Association	\$118,432.0	12.26%	\$45,514.50	38.43%
Citigroup Inc.				
Citibank, National Association	\$127,118.0	15.54%	\$0.00	0.00%
Wells Fargo & Company				
Wells Fargo Bank, National Association	\$93,339.0	10.13%	\$20,874.00	22.36%
Goldman, Sachs Group Inc.				
Goldman Sachs Bank USA	\$19,769.0	19.03%	\$26.00	0.13%
MetLife, Inc.				
Metlife Bank, National Association	\$1,310.7	21.29%	\$1.70	0.13%
Morgan Stanley				
Morgan Stanley Bank, N.A.	\$8,982.0	14.90%	\$4,469.00 ⁽⁵⁾	49.76%
U.S. Bancorp				
U.S. Bank National Association	\$26,071.3	9.89%	\$6,291.82	24.13%
HSBC North America Holdings Inc.				
HSBC Bank USA, National Association	\$16,119.6	13.54%	\$5,000.00	31.02%
Bank of New York Mellon Corporation				
The Bank of New York Mellon	\$12,872.0	14.75%	\$4,511.00	35.05%

1. Top 10 by total consolidated assets; Source: National Information Center as collected by the Federal Reserve System, www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx

2. Includes perpetual preferred stock, noncontrolling interests in subsidiaries and trust preferred capital debt securities (i.e. not Tier 1 Common)

3. Source for BHCs: FDIC Bank Data & Statistics Call Reports; Source for Parent Company: National Information Center / Federal Reserve, Company Filings

4. Source: National Information Center / Federal Reserve, Company Filings; includes Loans, Advances, Notes and Bonds in both Bank Operating Subsidiaries as well as Subsidiary Bank Holding Companies

5. Does not include \$14.65 billion of loans to Subsidiary Bank Holding Companies, which includes non-bank subsidiaries

Illustrative Bail-in of Citigroup Balance Sheet as of December 31, 2008 (\$ in Millions)

ASSETS	12/31/2008	REALIZED IMPAIRMENT OF:	
	Actual	20.0%	50.0%
Cash, deposits, fed funds, and brokerage receivables ^(a)	\$427,995	\$427,995	\$427,995
Trading account assets	380,043	304,034	190,022
Investments, available for sale and held to maturity)	253,393	202,714	126,697
Loans, net of allowances	664,915	531,932	332,458
Other assets ^(b)	218,917	218,917	218,917
TOTAL ASSETS	\$1,945,263	\$1,685,593	\$1,296,088
Total losses to be absorbed	--	(\$259,670)	(\$649,176)
LIABILITIES AND EQUITY			
Deposits	\$774,185	Protected/ineligible funding source that cannot be impaired through bail-in.	
Repurchase agreements	205,293		
Brokerage payables	70,916		
Trading account liabilities	167,536		
Short-term borrowings	126,691		
Other liabilities ^(c)	90,275		
Subtotal - Protected or ineligible liabilities	1,434,896		
Long-term debt	359,303	Available to absorb losses	
Other secured debt	290		
Shareholders' equity	150,774		
TOTAL LIABILITIES AND EQUITY	\$1,945,263		
Tier 1 cap. / Implied Tier 1 for constant ratio	\$118,758	\$102,905	\$79,126
Tier 1 leverage ratio (Tier 1 capital / total assets)	6.1%	6.1%	6.1%
ILLUSTRATIVE LOSS ABSORPTION SCHEDULE			
Total losses to be absorbed		\$259,670	\$649,176
Less: Losses absorbed by Tier 1 capital		(118,758)	(118,758)
Residual losses to be absorbed by converting long-term debt		140,912	530,418
Add: Conversion of long-term debt to maintain Tier 1 leverage ratio		102,905	79,126
Total long-term debt required for bail-in		243,817	609,543
Actual long-term debt held on balance sheet		359,303	359,303
Implied bail-in funding surplus (deficit/required public support)		\$115,486	(\$250,240)

(a) Includes fed funds sold and securities borrowed/purchased under resale agreements.

(b) Includes goodwill, intangible assets, mortgage servicing rights, and other.

(c) Includes credit loss allowances for letters of credit.

How to Deal with Contagion

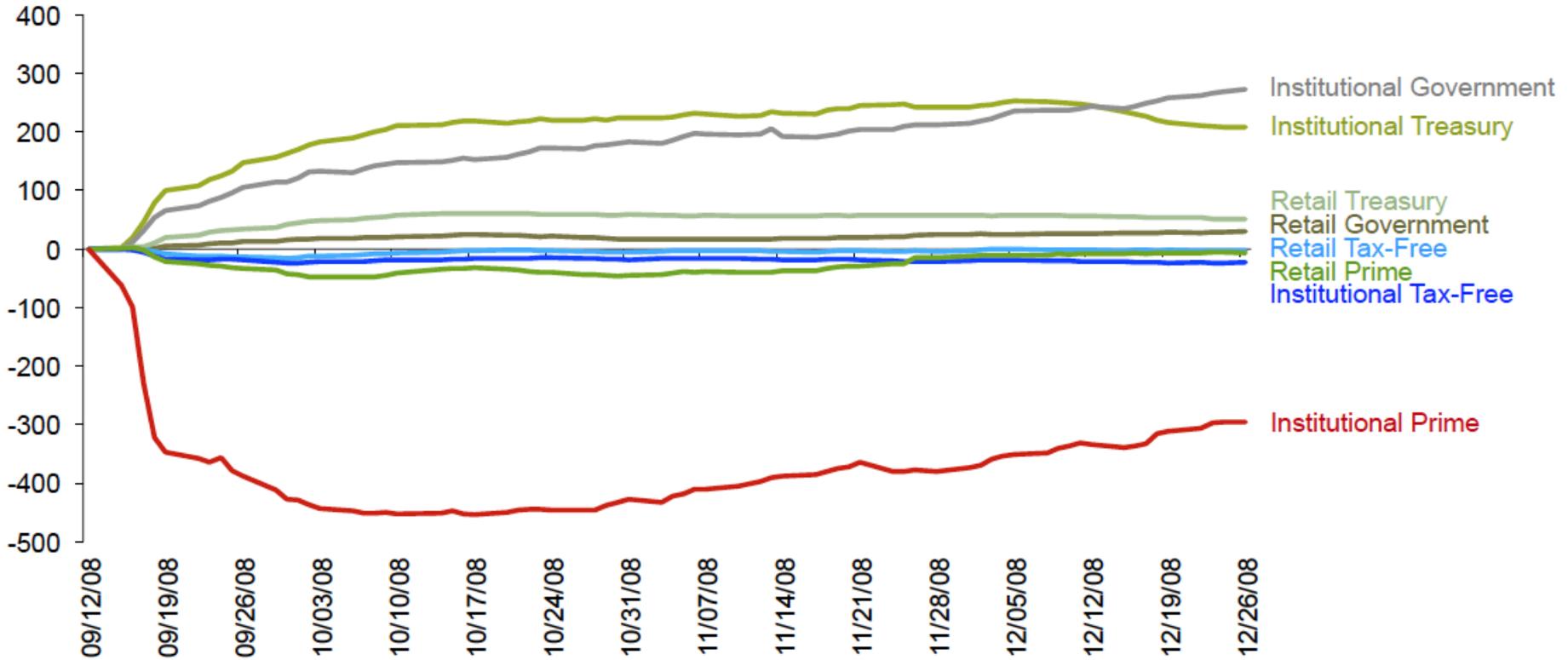
- **Strong and Clear Lender of Last Resort**
- Possible Limit on Short-term Liabilities
- Possible Extension of Insurance of Short-term Liabilities

Assets of Money Market Mutual Funds

(\$ in billions)

	As of 8/28/2013
Taxable Government	921.69
Retail	201.07
Institutional	720.62
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Taxable Non-Government	1,455.76
Retail	536.63
Institutional	919.13
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Tax-Exempt	266.74
Retail	194.61
Institutional	72.13
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Total	2,644.19
Retail	932.31
Institutional	1,711.88

Money Market Mutual Fund Asset Flows (\$ in billions)



Prime MMF Funding as a % of Total Assets

Institution	As of June 30, 2007*	Institution	As of June 30, 2013
Bank of America Corp.	<3.9%	JPMorgan Chase & Co.	2.6%
Citibank	<3.0%	Citibank	2.5%
The Goldman Sachs Group	<4.2%	Bank of America Corp.	2.5%
JPMorgan Chase & Co.	<2.4%	Wells Fargo & Company	2.3%
Lehman Brothers Holdings	<5.7%	The Goldman Sachs Group	3.0%
Merrill Lynch & Co., Inc.	<5.0%	Morgan Stanley	1.0%
Morgan Stanley	<5.0%	Barclays plc	2.3%
		Deutsche Bank AG	1.8%

* *Methodological note:* Aggregate data regarding prime money market funds' asset holdings was not available prior to the financial crisis. In order to determine prime money market fund asset holdings as of June 30, 2007, the Committee staff had to search the Commission's archives of Form N-CSR, the semi-annual reports by registered investment companies. The Committee staff was able to identify and review the asset holdings of prime money market funds with total assets of \$1.05 trillion. However, based on iMoneyNet, the prime fund industry had aggregate assets of \$1.65 trillion as of June 30, 2007. Thus, for the remaining \$600 billion in prime fund assets that the Committee staff was unable to identify, the Committee staff assumed that these prime funds had invested in each of the largest U.S. banks as much as legally allowed (5% of total money market fund assets).

Source: Crane Data, *Prime MMF Funding*, Jun. 30, 2013, available at <http://www.cranedata.us>; Federal Reserve System, *Top 50 Holding Companies*, Jun. 30, 2013, available at <http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx>.