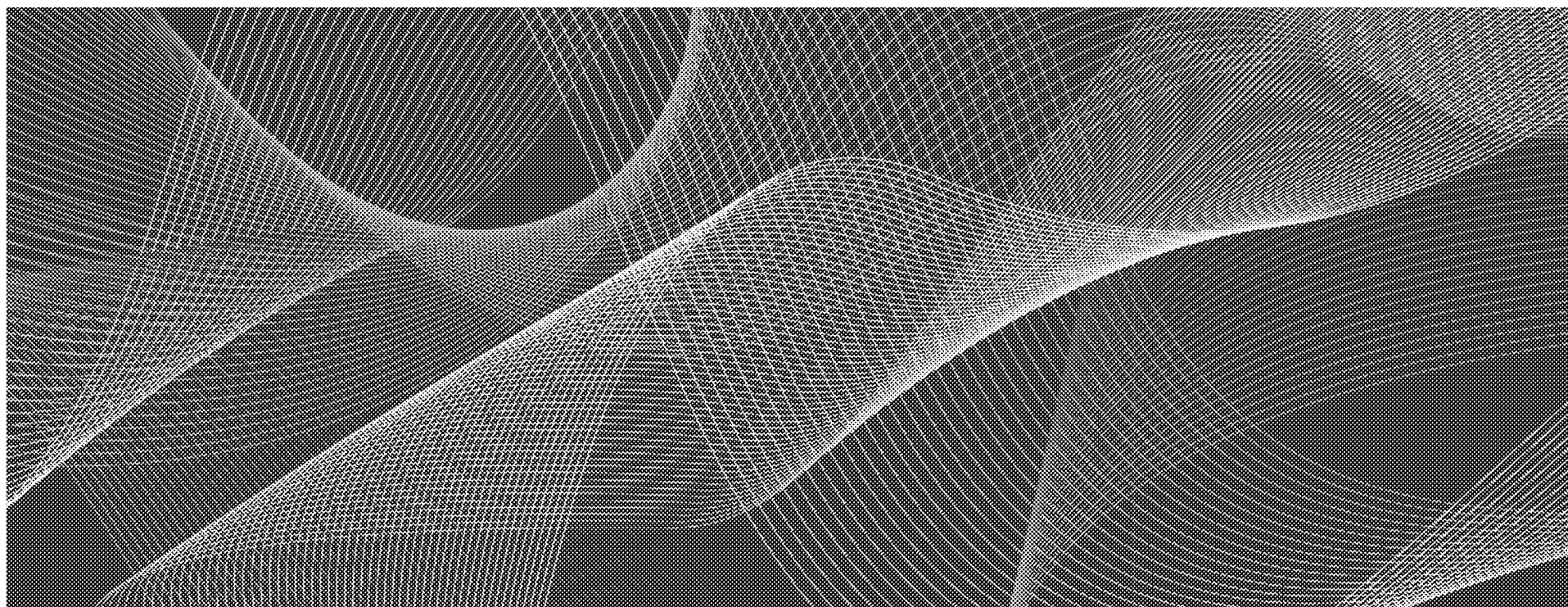


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April 7, 2008

Erin Callan

# Lehman Brothers – Leverage Analysis



Confidential Presentation

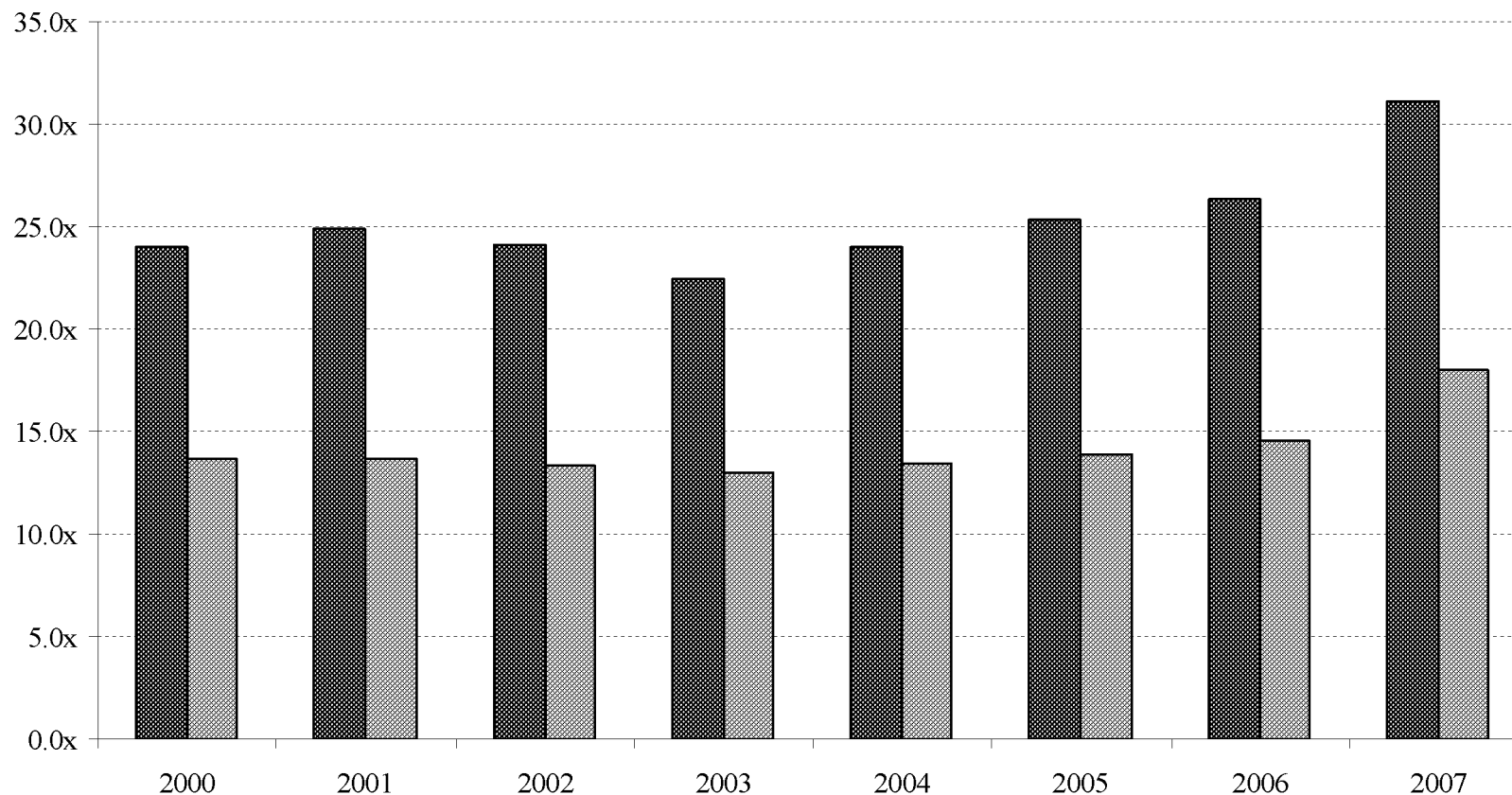
# Overview

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- ◆ Leverage for the industry and for Lehman Brothers has increased significantly and has been a key driver of improved profitability.
  - Starting from a high level, Lehman's net leverage has increased less than its peers in the past five years
  - Growth in assets primarily fuelled by a rapid growth in equity
  
- ◆ Lehman's return on assets has been above average but significantly below that of Goldman Sachs
  
- ◆ Lehman's growth in net balance sheet has been weighted toward mortgages and loans.
  - Deleveraging will require selling these assets, which will result in losses for Lehman
  - Additionally, Lehman has grown the matched book and rates business, which are now outsized relative to Firm's size, and have inflated gross balance sheet
  
- ◆ Leverage can be thought of as both a reflection of market risk and refinancing/liquidity risk.
  - Refinancing risk is mitigated by having a more stable liability structure: customer deposits and long term debt vs. commercial paper, repos and free credit balances from hedge funds
  - Reducing leverage is necessary to remove refinancing risk and win back the confidence of the market, lenders, and investors.

# Average Industry Leverage Ratios – 2000 to 2007

- ◆ From 2000 to 2007, both gross and net leverage for the industry increased by approximately 30% on average. Gross leverage increased further in 1Q08 for Lehman, although net leverage was reduced.



Gross	24.0x	24.9x	24.1x	22.4x	24.0x	25.3x	26.4x	31.2x
Net	13.7x	13.7x	13.3x	12.9x	13.4x	13.9x	14.5x	18.0x

<sup>(1)</sup> Bear Stearns' net leverage ratio is excluded from the average for 2000.

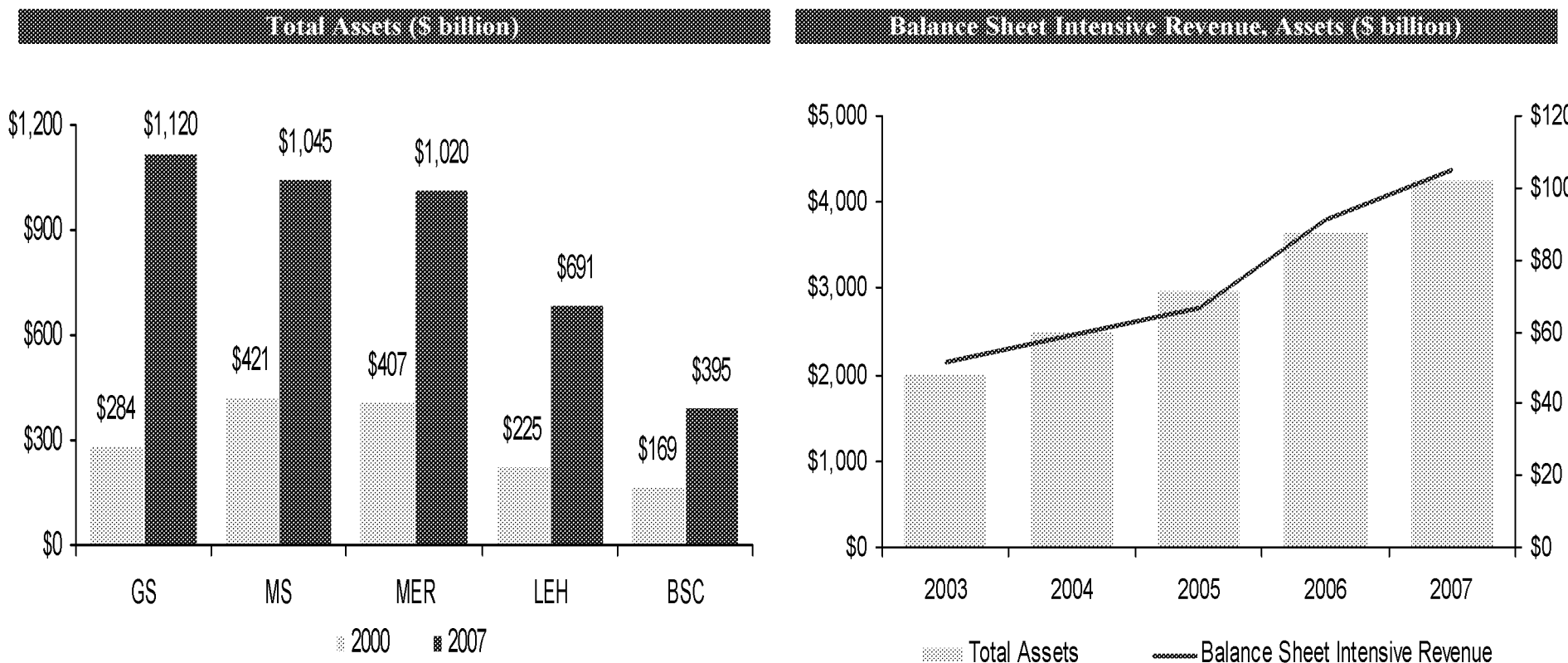
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■ Average Gross Leverage Ratios  
□ Average Net Leverage Ratios

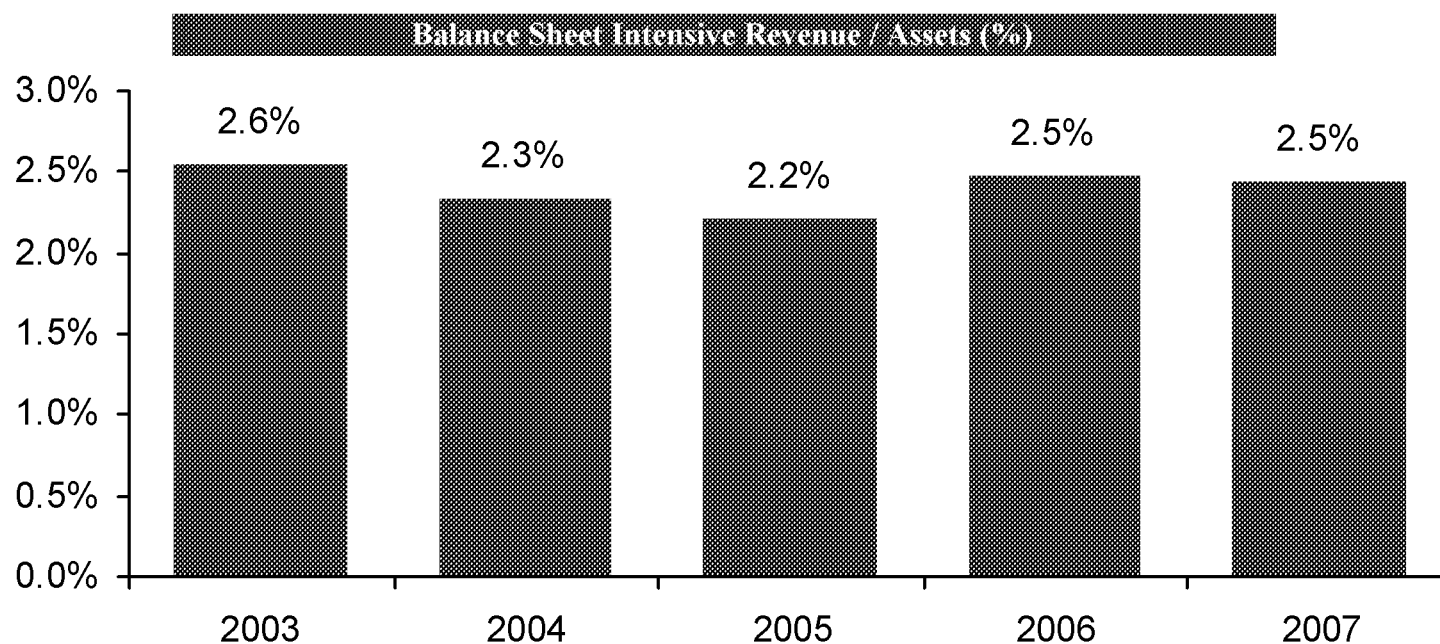
# Industry Revenue Growth in Capital Markets

- ◆ Leverage has driven profitability in capital markets businesses
  - Balance sheets expanded to capitalize on opportunities and capital markets revenues grew along with the asset base
  - Intra-quarter, even Lehman's gross balance sheet is regularly above \$1 trillion



# Industry Asset Returns In Capital Markets

- ◆ Asset profitability never really improved – there were just more assets to trade. This does hide the significant disparity between the different firm's which reflects both rate of turnover of assets, and the underlying riskiness of those assets



# Competitor Leverage Analysis

- ◆ Over the past few years, Lehman Brothers gross leverage (based on a 5 quarter average of leverageable equity and total assets) is consistently at the high end of the peer group.
- ◆ After initially declining, Lehman Brothers net leverage (based on a 5 quarter average of leverageable equity and net assets) has crept back towards the higher end of the peer group in recent years, signaling higher risk.

	Leverageable Equity (5 Quarter Average)					Net Assets (5 Quarter Average)				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Lehman Brothers	10,240	11,665	14,175	17,218	21,041	153,503	171,353	191,646	237,510	327,492
Goldman Sachs	15,209	20,402	23,785	28,719	37,244	208,228	243,869	321,186	413,749	545,694
Morgan Stanley	23,946	27,795	28,877	33,011	36,895	296,239	343,295	366,584	460,077	584,411
Bear Stearns	7,140	8,062	9,664	11,401	12,576	91,877	108,583	149,705	184,697	243,771
Merrill Lynch	23,361	27,525	29,874	35,357	38,543	332,897	380,573	412,718	440,195	561,525

	Gross Leverage					Net Leverage				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Lehman Brothers	28.0x	24.0x	23.7x	25.4x	28.9x	15.0x	14.7x	13.5x	13.8x	15.6x
Goldman Sachs	19.2x	20.2x	23.7x	24.7x	25.2x	13.7x	12.0x	13.5x	14.4x	14.7x
Morgan Stanley	24.7x	26.1x	28.8x	31.3x	32.0x	12.4x	12.4x	12.7x	13.9x	15.8x
Bear Stearns	29.7x	29.1x	28.2x	27.9x	30.9x	12.9x	13.5x	15.5x	16.2x	19.4x
Merrill Lynch	18.7x	18.6x	19.6x	20.6x	25.9x	14.2x	13.8x	13.8x	12.4x	14.6x

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# Revenue Return on Assets – Competitor Comparison

- ◆ Comparing Capital Markets revenues (revenues adjusted to exclude IMD and IBD below) to net assets shows that Goldman Sachs consistently delivered the highest returns with Lehman immediately behind
- ◆ Asset productivity declined rapidly in 2007 because of the dependence on residential and commercial mortgage asset turnover. Relative spreads (yield on assets vs. financing) will partially offset the slowdown in turnover for assets held.

	Revenue					Adjusted Revenue (ex. IMD and IBD)				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Lehman Brothers	8,647	11,576	14,630	17,583	19,257	6,018	7,694	9,807	12,006	12,257
Goldman Sachs	16,023	20,951	25,238	37,665	45,987	11,459	15,024	18,611	27,742	33,942
Morgan Stanley	20,817	23,708	26,778	33,858	30,012	12,203	13,347	15,375	20,665	12,356
Bear Stearns	5,994	6,813	7,411	9,227	5,945	4,702	5,362	5,901	7,311	4,062
Merrill Lynch	19,900	22,059	25,277	33,781	11,250	7,519	7,838	9,390	16,017	(7,690)
	RROA (Net Assets)					Adjusted RROA (Net Assets)				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Lehman Brothers	5.6%	6.8%	7.6%	7.4%	5.9%	3.9%	4.5%	5.1%	5.1%	3.7%
Goldman Sachs	7.7%	8.6%	7.9%	9.1%	8.4%	5.5%	6.2%	5.8%	6.7%	6.2%
Morgan Stanley	7.0%	6.9%	7.3%	7.4%	5.1%	4.1%	3.9%	4.2%	4.5%	2.1%
Bear Stearns	6.5%	6.3%	5.0%	5.0%	2.4%	5.1%	4.9%	3.9%	4.0%	1.7%
Merrill Lynch	6.0%	5.8%	6.1%	7.7%	2.0%	2.3%	2.1%	2.3%	3.6%	-1.4%

*Note: Morgan Stanley's revenue includes Discover Financial Services to keep the data consistent for the metrics.*

# Lehman Brothers – Balance Sheet (Assets) Growth

- ◆ Lehman Brothers gross leverage has increased 34% since the end of 2003.
  - Principally in matched book and rates businesses (especially short positions – which shows in reverse repo balances and gross balance sheet).
- ◆ The change in Net Leverage is small, but weighted towards illiquid assets like mortgages and loans

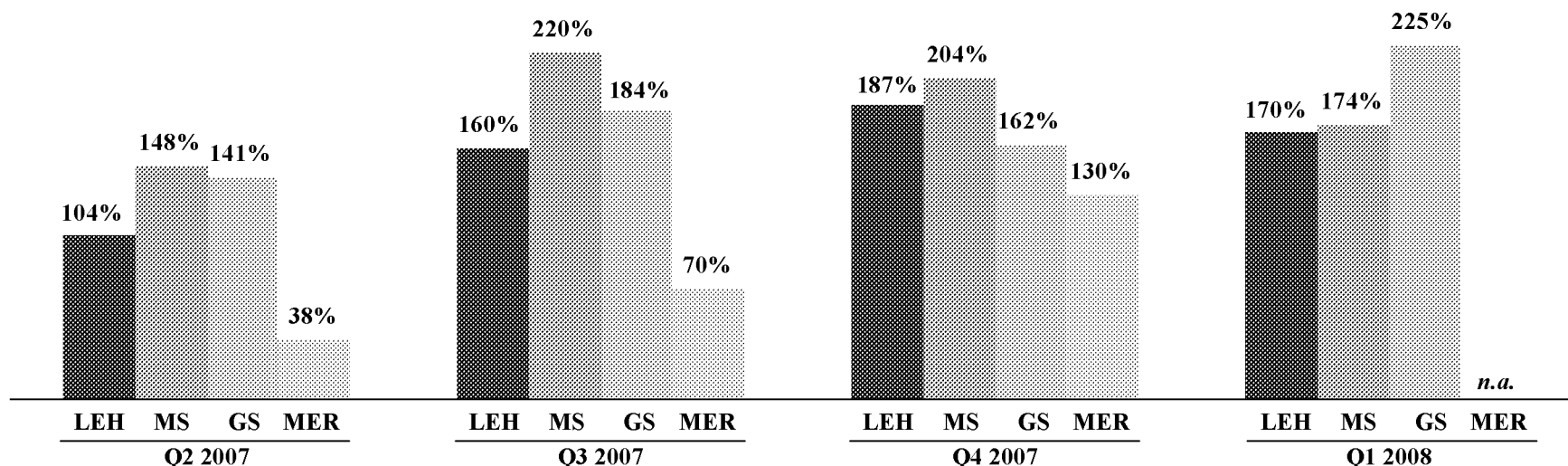
ASSETS	Q4 '03	Q1 '08	% Δ
Cash and Cash equivalents	7,922	7,564	-5%
Cash and securities segregated and on deposit for regulatory and other purposes	3,100	16,569	434%
Government & Agencies	31,666	44,574	41%
Commercial Paper & Other Money Mkt Instruments	4,287	3,433	-20%
Physical Commodities	-	169	N/A
Mortgage and Asset-Backed Securities & Real Estate	38,957	107,171	175%
Corporate debt and other	20,069	59,581	197%
Corporate equities	22,889	56,118	145%
Derivatives and other contractual agreements	15,766	55,612	253%
<b>Inventory Subtotal</b>	<b>133,634</b>	<b>326,658</b>	<b>144%</b>
Securities received as collateral	3,406	-	N/A
Securities purchased under agreements to resell	87,416	210,166	140%
Securities borrowed	51,396	158,515	208%
<b>Collateralized Lendings Subtotal</b>	<b>138,812</b>	<b>368,681</b>	<b>166%</b>
<b>Receivables Subtotal</b>	<b>15,310</b>	<b>52,399</b>	<b>242%</b>
<b>Other</b>	<b>9,877</b>	<b>14,164</b>	<b>43%</b>
<b>TOTAL ASSETS</b>	<b>312,061</b>	<b>786,035</b>	<b>152%</b>
Cash and securities segregated and on deposit for regulatory and other purposes	(3,100)	(16,569)	434%
Collateralized Agreements	(142,218)	(368,681)	159%
Identified intangible assets and goodwill	(3,561)	(4,112)	15%
<b>NET ASSETS</b>	<b>163,182</b>	<b>396,673</b>	<b>143%</b>
Stockholders Equity	13,174	24,832	88%
Leveragable Equity	10,681	25,696	141%
<b>Gross Leverage</b>	<b>23.7x</b>	<b>31.7x</b>	<b>34%</b>
<b>Net Leverage</b>	<b>15.3x</b>	<b>15.4x</b>	<b>1%</b>



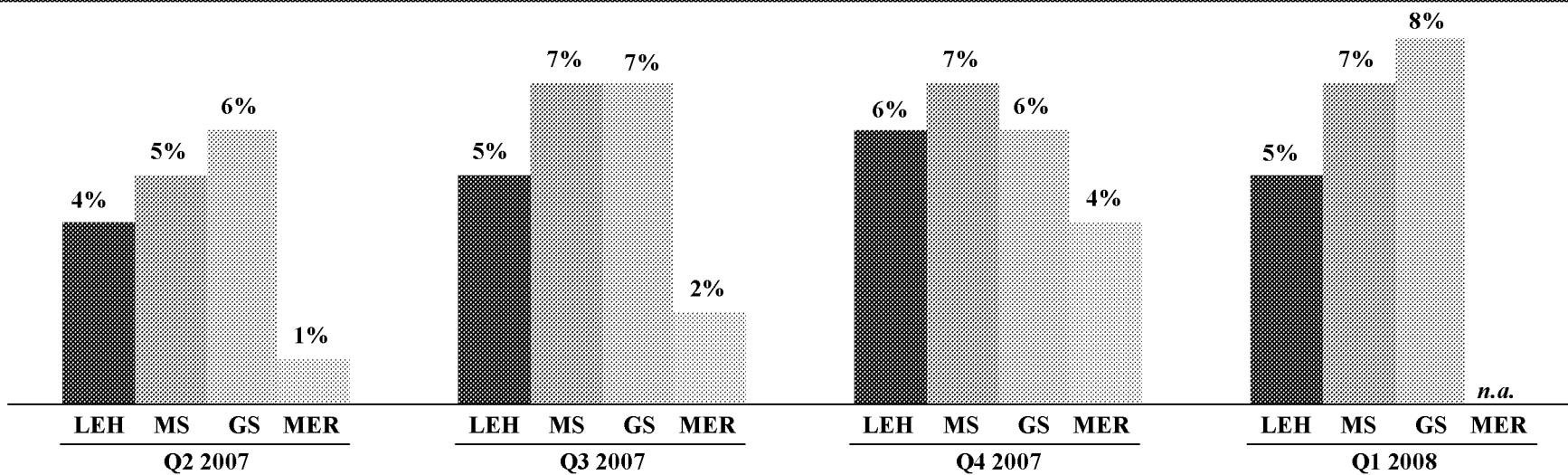
# Illiquid Assets

◆ Lehman Brothers Illiquid assets, as measured by Level III assets, are broadly in line with the rest of the industry.

Level 3 Assets as % of Shareholder's Equity (Q2 2007 – Q1 2008)



Level 3 Assets as % of Total Assets (Q2 2007 – Q1 2008)



Source: Company filings, 10Qs and earnings announcements.

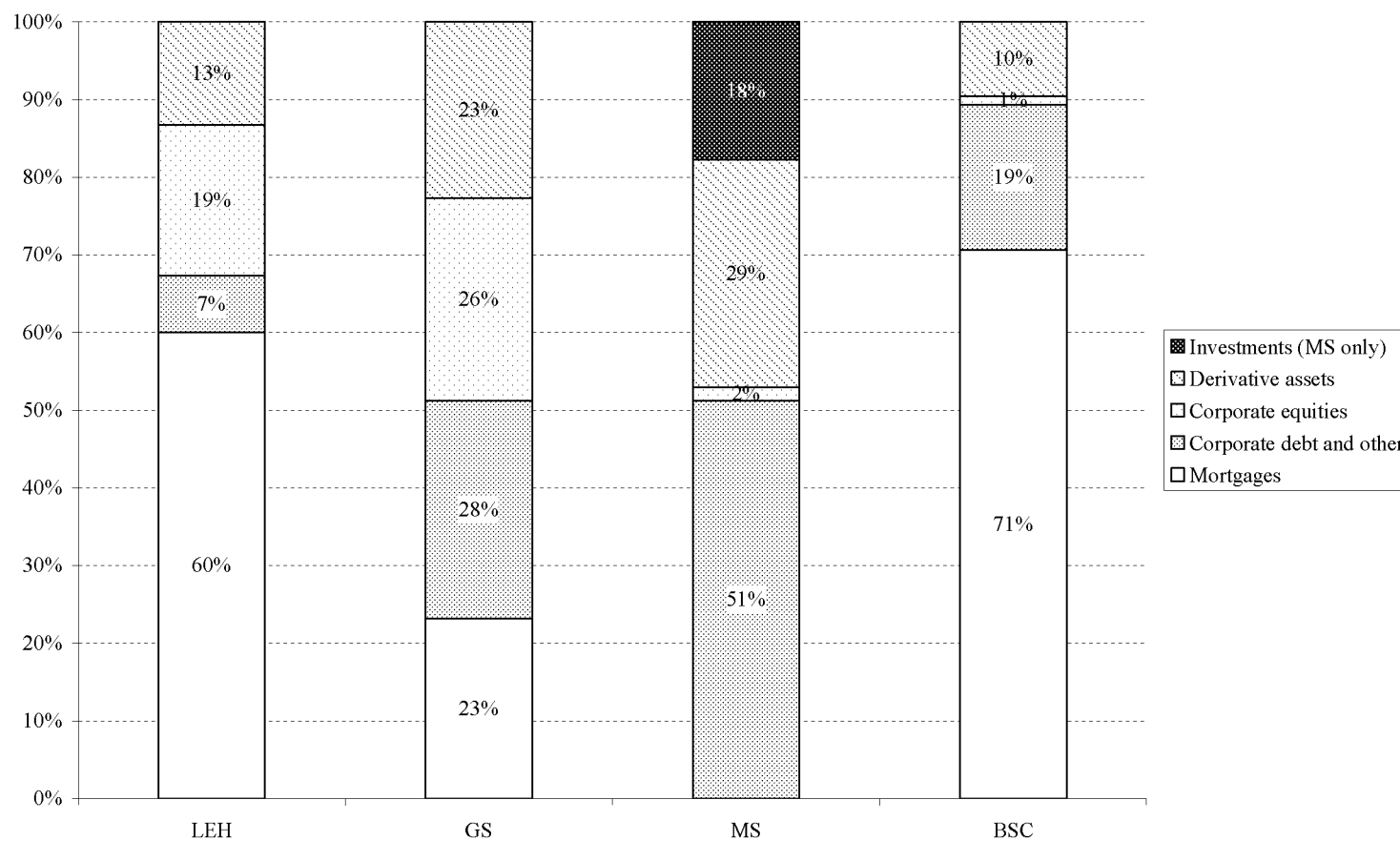
1. Based on GS Q1 2008 approximate total assets of \$1.2 trillion taken from earnings call transcript.

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# Illiquid Assets

- ◆ However, the industry is more balanced in less liquid asset classes where as the composition of Lehman's Level III assets are more weighted to residential and commercial loans versus corporate loans and private equity investments at Morgan Stanley and Goldman Sachs

**Composition of Level III Assets**



# Lehman Brothers – RROA by Business

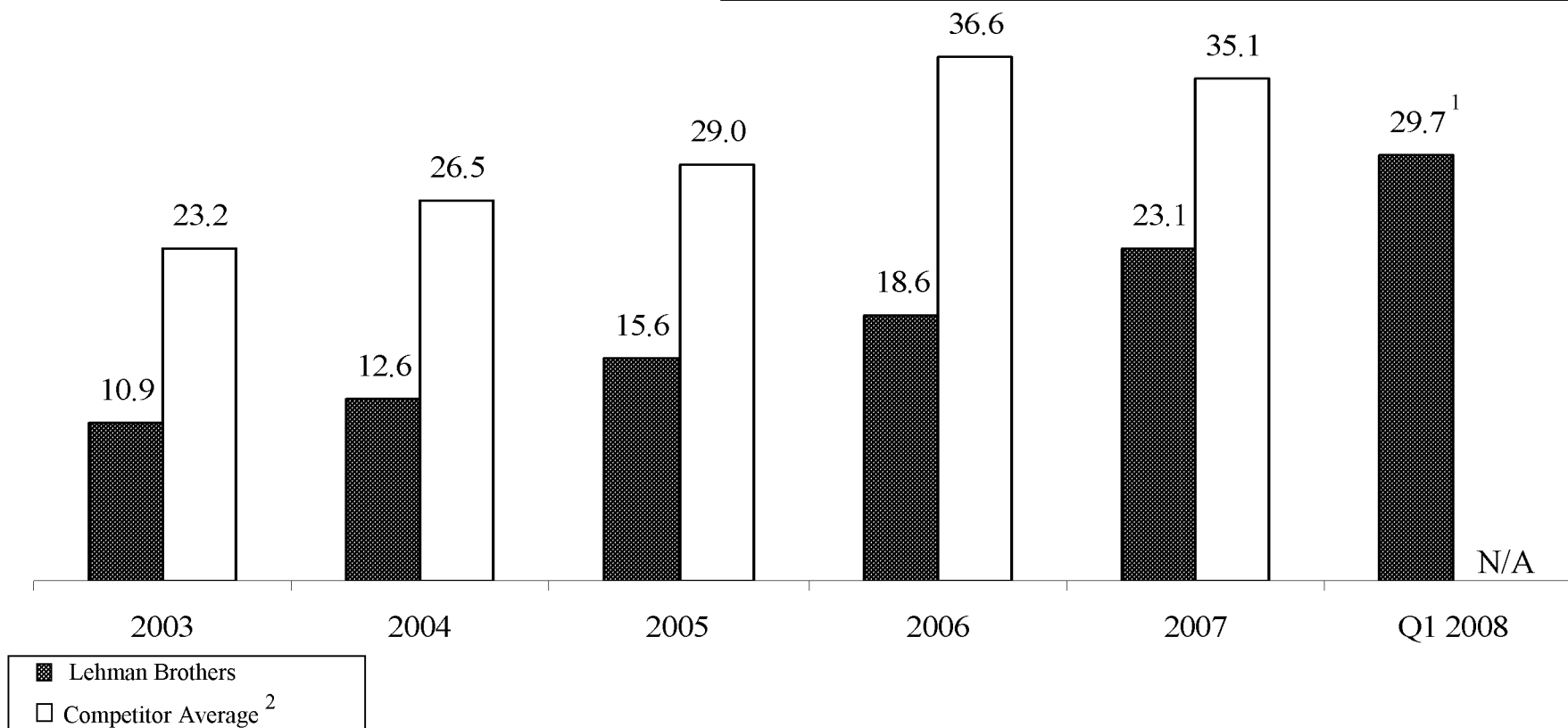
- ◆ RROA by business shows a significant spread of returns by asset class over time and enables us to see where balance sheet growth was beneficial and detrimental over the past 4+ years.

	Net Balance Sheet		Gross Balance Sheet		Revenue		RROA (Net Assets)		RROA (Gross Assets)	
	FY 2003	Q1 '08	FY 2003	Q1 '08	FY 2003	Q1 '08	FY 2003	Q1 '08	FY 2003	Q1 '08
Total FID	108.1	259.5	220.6	498.9	5,064.7	978.3	4.7%	1.5%	2.3%	0.8%
FID Core	106.8	248.1	151.3	366.8	4,666.1	611.0	4.4%	1.0%	3.1%	0.7%
Int Rate Products	22.2	52.0	50.4	154.0	1,161.1	1,000.8	5.2%	7.7%	2.3%	2.6%
High Grade	11.2	11.3	17.2	14.6	686.4	665.9	6.1%	23.5%	4.0%	18.2%
Emerging Markets	-	-	-	-	-	-	N/A	N/A	N/A	N/A
CDO	1.6	11.0	1.8	11.2	232.6	50.5	14.2%	1.8%	13.3%	1.8%
Pass Thru	-	-	-	-	-	-	N/A	N/A	N/A	N/A
Real Estate	20.2	65.0	21.1	65.7	451.9	(1,226.5)	2.2%	-7.6%	2.1%	-7.5%
Securitized Products	37.2	62.1	43.8	65.1	1,369.8	(270.9)	3.7%	-1.7%	3.1%	-1.7%
High Yield	2.4	14.6	3.1	16.2	609.3	441.3	25.3%	12.1%	19.8%	10.9%
Munis	2.9	9.5	3.0	10.2	471.1	(206.1)	16.1%	-8.7%	15.5%	-8.1%
Commodities	-	3.7	-	4.0	-	52.4	N/A	5.6%	N/A	5.2%
Foreign Exchange	1.6	6.3	1.6	6.4	127.9	208.3	8.0%	13.1%	8.0%	13.1%
FID Corp	6.2	2.2	7.4	9.1	(444.1)	(104.7)	-7.1%	-18.7%	-6.0%	-4.6%
FID Corp Loans	0.8	3.3	1.1	3.3	-	-	0.0%	0.0%	0.0%	0.0%
Invest Banking Loans	0.4	7.0	0.7	7.0	-	-	0.0%	0.0%	0.0%	0.0%
FID Prime Services	1.3	11.4	69.3	132.1	398.6	367.3	29.8%	12.9%	0.6%	1.1%
Total Equities	38.2	86.0	66.2	188.8	2,005.6	1,414.9	5.3%	6.6%	3.0%	3.0%
Equities Core	21.4	48.8	28.0	60.4	1,626.3	1,127.3	7.6%	9.2%	5.8%	7.5%
Exec Svcs / Lq Mkts	2.1	9.3	2.4	14.9	1,129.8	850.9	54.8%	36.7%	46.2%	22.9%
Convertible Products	2.6	2.7	3.0	3.3	213.3	23.3	8.4%	3.4%	7.1%	2.8%
Volatility	11.2	29.2	14.3	33.2	197.5	352.1	1.8%	4.8%	1.4%	4.2%
Equity Strategies	2.6	4.2	2.8	5.4	115.2	13.8	4.4%	1.3%	4.2%	1.0%
Firm Relationship Loans	0.8	2.8	1.0	2.8	-	-	0.0%	0.0%	0.0%	0.0%
Equity Corporate	2.3	0.5	4.5	0.8	(29.5)	(112.7)	-1.3%	-83.1%	-0.7%	-53.2%
Equities Prime Services	16.7	37.2	38.2	128.4	379.3	287.6	2.3%	3.1%	1.0%	0.9%
Principal Investing	3.2	14.7	3.4	16.7	628.4	211.6	19.7%	5.8%	18.8%	5.1%
IMD	1.9	13.7	7.1	17.0	187.6	(125.4)	9.9%	-3.7%	2.7%	-3.0%
Non Core	11.8	22.9	14.9	64.6	760.6	1,027.2	6.4%	18.0%	5.1%	6.4%
<b>Total Net Balance Sheet</b>	<b>163.2</b>	<b>396.7</b>	<b>312.1</b>	<b>786.0</b>	<b>8,647.0</b>	<b>3,506.6</b>	<b>5.3%</b>	<b>3.5%</b>	<b>2.8%</b>	<b>1.8%</b>
<i>SHADOW PRIME SERVICES</i>										
Total FID Prime Services (Net):	1.3	11.4	69.3	132.1	398.6	367.3	29.8%	12.9%	0.6%	1.1%
Total Equities GCS Prime Services (Net):	16.7	37.2	38.2	128.4	379.3	287.6	2.3%	3.1%	1.0%	0.9%
<b>TOTAL PRIME SERVICES NET</b>	<b>18.1</b>	<b>48.6</b>	<b>107.4</b>	<b>260.5</b>	<b>777.9</b>	<b>654.9</b>	<b>4.3%</b>	<b>5.4%</b>	<b>0.7%</b>	<b>1.0%</b>

# Growth in Leverageable Equity

- ◆ Growing our equity base faster than our peers will reduce leverage and put us on a more level playing field from an absolute perspective.
- ◆ Absolute size of capital is important for ratings and the perception of stability with lenders and investors. We are now around 75% of the size of our peers, on average, post convert.

<u>CAGR ('03 - '07)</u>		<u>CAGR ('03 – Q1 '08 Pro-forma)</u>	
Lehman	21%	Lehman	27%
Competitor Avg.	11%	Competitor Avg.	N/A



1. Lehman Q1 '08 equity number has been adjusted to include \$4B resulting from the convert issuance

2. Represents the average of Goldman Sachs, Merrill Lynch, and Morgan Stanley. Equity numbers are based on Lehman's definition of Leverageable Equity and may not match the competitors reported numbers

# Costs of Deleveraging

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- ◆ Expected losses from reductions are around 3.5% on average
  - \$22B of illiquid assets will cost us ~\$750mm

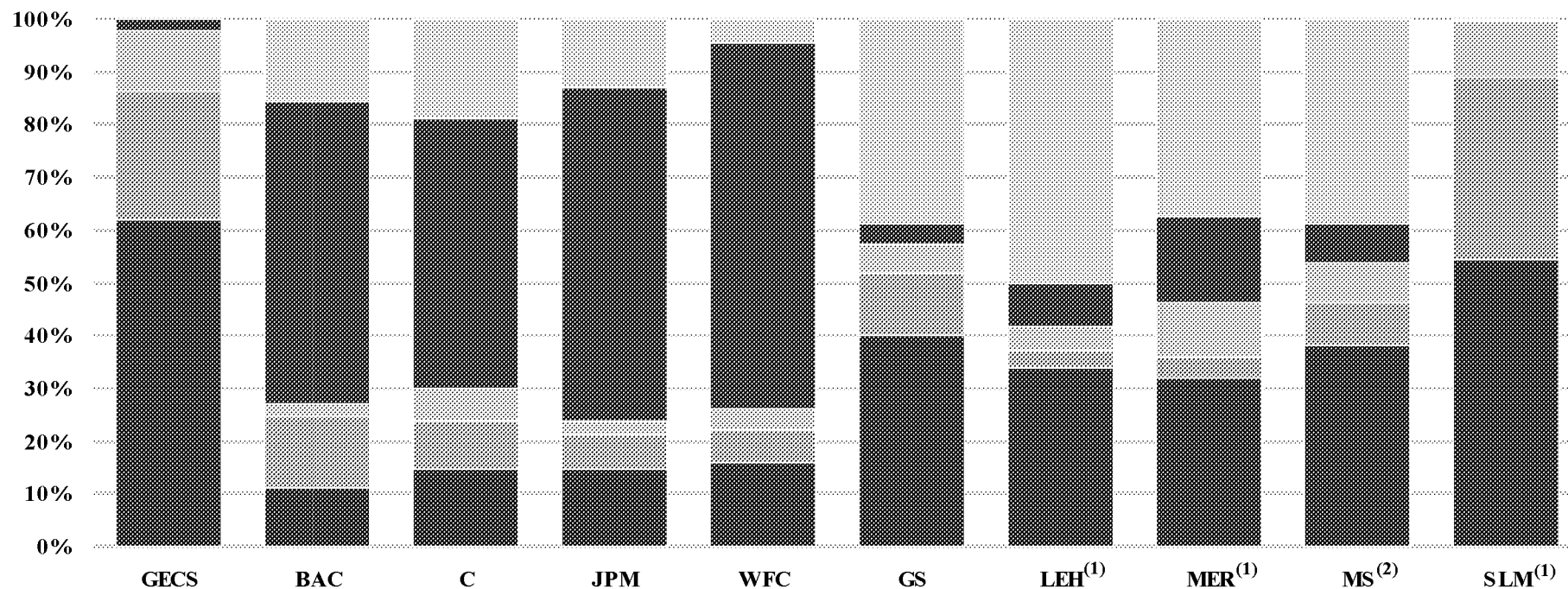
*\$ in millions*

	<u>Asset Reduction</u>	<u>Revenue Impact</u>	<u>%</u>
Real Estate	7,000	250	3.6%
Residential	7,000	200	2.9%
HY - Leverage Finance	4,000	200	5.0%
HY- Other	4,000	100	2.5%
<b>Total</b>	<b>22,000</b>	<b>750</b>	<b>3.4%</b>

# Liability Analysis

- ◆ Brokers have riskier liability structures than banks. For Universal banks this may hide risk in their broker dealers as deposits are not accessible to the broker side, but that is largely misunderstood by the market. Our total capital ratio is now >18%, post convert – although leverage remains high.

Funding Analysis – As of December 31, 2007



\* Long Term Debt      \* Short Term Debt / Commercial Paper      \* Current Portion of LT Debt      \* Deposits      \* Repurchase Agreements

	GECS	BAC	C	JPM	WFC	GS	LEH	MER	MS	SLM
Tier 1 Capital ratio	n/a	6.9%	7.1%	8.4%	7.6%	n/a	7.1%	n/a	n/a	n/a
Total Capital ratio	n/a	11.0%	10.7%	12.6%	10.7%	n/a	10.7%	n/a	n/a	n/a
Leverage ratio <sup>(3)</sup>	9.5%	5.0%	4.0%	6.0%	6.8%	4.4%	3.6%	3.4%	3.0%	3.8%
Moody's	Aaa	Aa1	Aa3	Aa2	Aa1	Aa3	A1	A1	Aa3	Baa2
S&P	AAA	AA	AA-	AA-	AA+	AA-	A+	A+	AA-	BBB-

1. Data as of November 30, 2007.

2. Data as of December 29, 2007.

3. Leverage ratio based on tangible equity capital for GS, MER and MS, shareowner's equity for GECS and SLM, and Tier 1 for all others. The leverage ratio is calculated using the average of total assets at the end of 2006 and 2007 for GECS, GS, LEH, MER, MS and SLM.

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# Reduction of Refinancing Risk

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- ◆ To reduce refinancing risk, we should consider increasing deposit funded activity/balances and increasing the deposit base at the bank entities
  - Term deposit raising at US banks and Bankhaus
  - Use more long term debt (public markets not open for now but as they reopen)
  - Long-term bank facilities and commitments
  - Term out repos
  
- ◆ We should use more conservative term structures to fund less liquid securities (EMG, high yield, E2 and E3 equities)
  - Higher haircuts on financing
  - No short-term (less than a month) repos
  
- ◆ We should move some businesses currently done in unregulated entities to banks – e.g., customer margin lending, parts of PB business
  
- ◆ Finally, we should also seek to diversify asset concentrations and reduce illiquid assets – in part to address negative market perceptions.

# External Constituents – Analysts & Investors

## Observations

- ◆ Expectation is that there will be de-levering across the industry
- ◆ LEH and MS most vocal to date about need to, and plan to, de-lever in current environment
  - LEH viewed as having higher concentration of less liquid assets and need to address these
  - GS messaging that they don't believe they need to de-lever (but by growing equity through earnings retention and keeping assets flat they will likely de-lever a bit as well)
- ◆ Inevitable that there is a change in regulatory oversight coming, and de-levering is a likely outcome
- ◆ Capital raise (convertible offering) was positive to get leverage down quickly

## Concerns

- ◆ Impact on near term earnings and ROE is biggest concern
  - MER estimating a 10-20% reduction in ROE's
  - Bernstein estimates ROE's rose 20% since '05 as a result of higher leverage
- ◆ Also, investors and analysts want to be comfortable that this won't impact customer related balance sheet such that client revenues will also suffer
- ◆ Clarity around future regulatory environment necessary
- ◆ Likely one of several capital raises to come across the industry
- ◆ One observation - "Is LEH seeing things in markets and signaling that additional equity is needed because environment is getting worse"