



# Comparing Financial Intermediaries: Banks, Hedge Funds and the Importance of Failure

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# QUICK POLL

Which are riskier:

- Banks?
- Hedge Funds?

(Risk = higher probability of becoming insolvent)



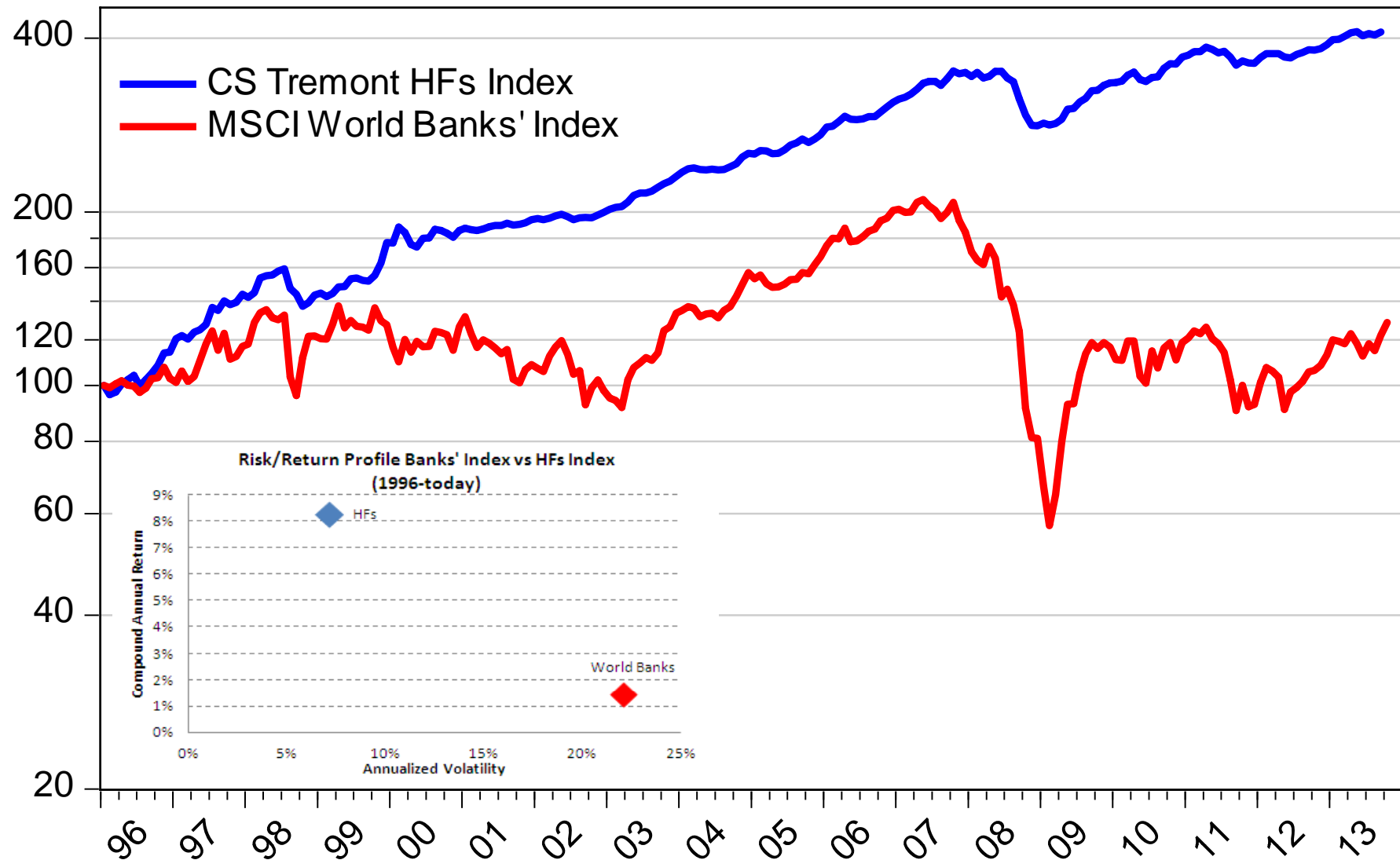
# HEDGE FUNDS IN THE FINANCIAL CRISIS

- “HF difficulties stem from potential banks’ insolvencies and the illiquidity of OTC markets operated by banks. Despite heavy redemptions, insolvencies among HF should remain sporadic” (Foglia, Il Sole 24 Ore, October 1st , 2008)
- “Upon taking on G8’s Chairmanship, Italy would push to abolish HF which are dark, opaque and insane” (Tremonti, Il Sole 24 Ore, October 11<sup>th</sup> , 2008)
- “In this crisis, that has again discredited banks, HF are part of the solutions, not of the problems” (Foglia, Il Sole 24 Ore, February 19<sup>th</sup> 2009)

No amount of evidence suffices in eradicating prejudices...



# HEDGE FUNDS ARE 3 TIMES LESS RISKY THAN BANKS





# INSOLVENCY RISK

## WHY IS CAPITAL NEEDED?

Capital is needed to absorb losses before they affect other liabilities and cause insolvency.

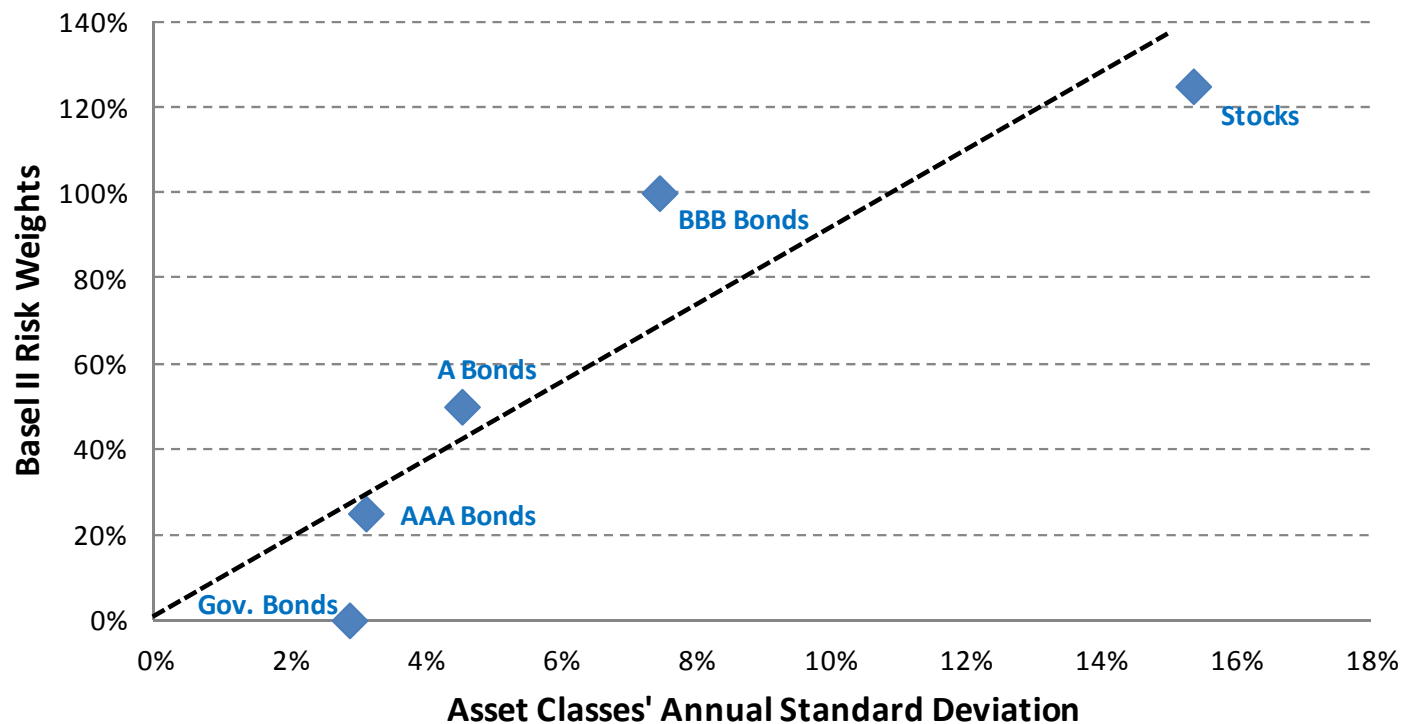
## HOW PROBABLE ARE LOSSES?

For normally distributed returns, there is a 50% probability of encountering losses higher than 1 annual standard deviation every 4 years, and of suffering losses larger than 2 annual standard deviation every 30 years.



# RISK WEIGHTING ASSETS

- Basel's Bank Capital Requirements are mainly based on Risk Weighted Assets
- Every asset class is assigned a risk weight either by the regulator (Standard) or by banks' internal models.





# CAPITAL AND RISK WEIGHTED ASSET

	Gov Bonds	AAA Bonds	A Bonds	BBB Bonds	Stocks
Annual StDev	2.9%	3.1%	4.5%	7.5%	15.3%
Basel II - Risk Weight Coeff.	0%	25%	50%	100%	125%
Basel II Minimum Capital	-	2%	4%	8%	10%
Basel II - Allowed Leverage	$\infty$	50	25	12.5	10
Basel III Minimum Capital (including capital buffers of 5% of RWA)	-	3%	6.5%	13%	16.3%
Basel III - Allowed Leverage	$\infty$	30	15	8	6

While the risk weighting scaling is broadly coherent with volatility scaling, Basel requirements at around one annual standard deviation of the assets they refer is perplexing. And this is before exploiting the benefits of diversification and considering fat tails risk.



# A SAMPLE BANK BALANCE SHEET

<i>Equity/RWA (Tier 1 Ratio)</i>	12.5%
<i>RWA/TA</i>	45%
<i>Leverage</i>	17.7

## **Risk Equivalent Bank Balance Sheet**

	<i>Nominal</i>	<i>Basel II coef</i>	<i>Risk Weighted</i>
<i>Stocks</i>	354.0	125%	442.5
<i>AAA Bonds</i>	1416.0	25%	354.0
<i>Tot Assets</i>	<u>1770</u>		<u>796.5</u>
<i>Tier 1 Capital</i>	100		

A typical bank has a portfolio that has the same risk as one leveraged 3.5x in equities and 14x in AAA bonds. Other than in regulated banks, portfolios with so much risk do not exist because they would not survive long.





# A SAMPLE HEDGE FUND BALANCE SHEET

<b>Sample Aggressive HF Balance Sheet</b>			
	<b>Positions</b>	<b>Basel II RW</b>	<b>RWA</b>
<b>Stocks Long</b>	120	100%	120
<b>Stocks Short</b>	60	100%	60
<b>Stocks Net</b>	60		
<b>Gov Bond , 8y duration</b>	100	0%	0
<b>Corp Bond BBB 3y duration</b>	30	100%	30
<b>Foreign currency</b>	50		
<b>Interest rate risk</b>			29.0
<b>Currency risk</b>			62.5
<b>Total Assets</b>	310		
<b>Total Risk Weighted Assets</b>			302
<b>Equity</b>	100		

**Equity/RWA** 33.2%  
**RWA/TA** 97%  
**Leverage** 3.1

Min Capital according to Basel III (13% of RWA including add on) = 39.3  
so an aggressive HF has 2.5x the minimum capital prescribed to banks

# AN AGGRESSIVE HF WOULD HOLD AT LEAST TWICE AS MUCH CAPITAL AS A BANK

	<b>Bank</b>	<b>HF</b>
<b><i>Equity/RWA (Tier 1 Ratio)</i></b>	12.5%	33.2%
<b><i>RWA/TA</i></b>	45%	97%
<b><i>Leverage (TA/Eq)</i></b>	17.7	3.1
<b><i>Capitalisation (Eq/TA)</i></b>	5.6%	32%
<b><i>Assets' Volatility</i></b>	4-6%	10-15%

Banks, also under Basel III, will have capital equal to only roughly one annual standard deviation of their assets.

This gives bank a 50% chance of becoming insolvent every 4 years.

Aggressive HF have 2-3 annual standard deviation of capital at least.



# THE ACTUAL SITUATION

	EU Banks Top 61 (€bn)	US Banks Top 18 (\$bn)
Total Assets	29'076	12'031
Risk Weighted Assets	9'680	7'461
RWA/TA	33.3%	62.0%
Tier 1 Cap	1'199	962
of which tangible common eq.	1'028	828
T1/RWA (Tier 1 Ratio)	12.4%	12.9%
T1/TA	4.1%	8.0%
Leverage (TA/T1)	24x	12.5x
Tangible Leverage	28x	14.5x

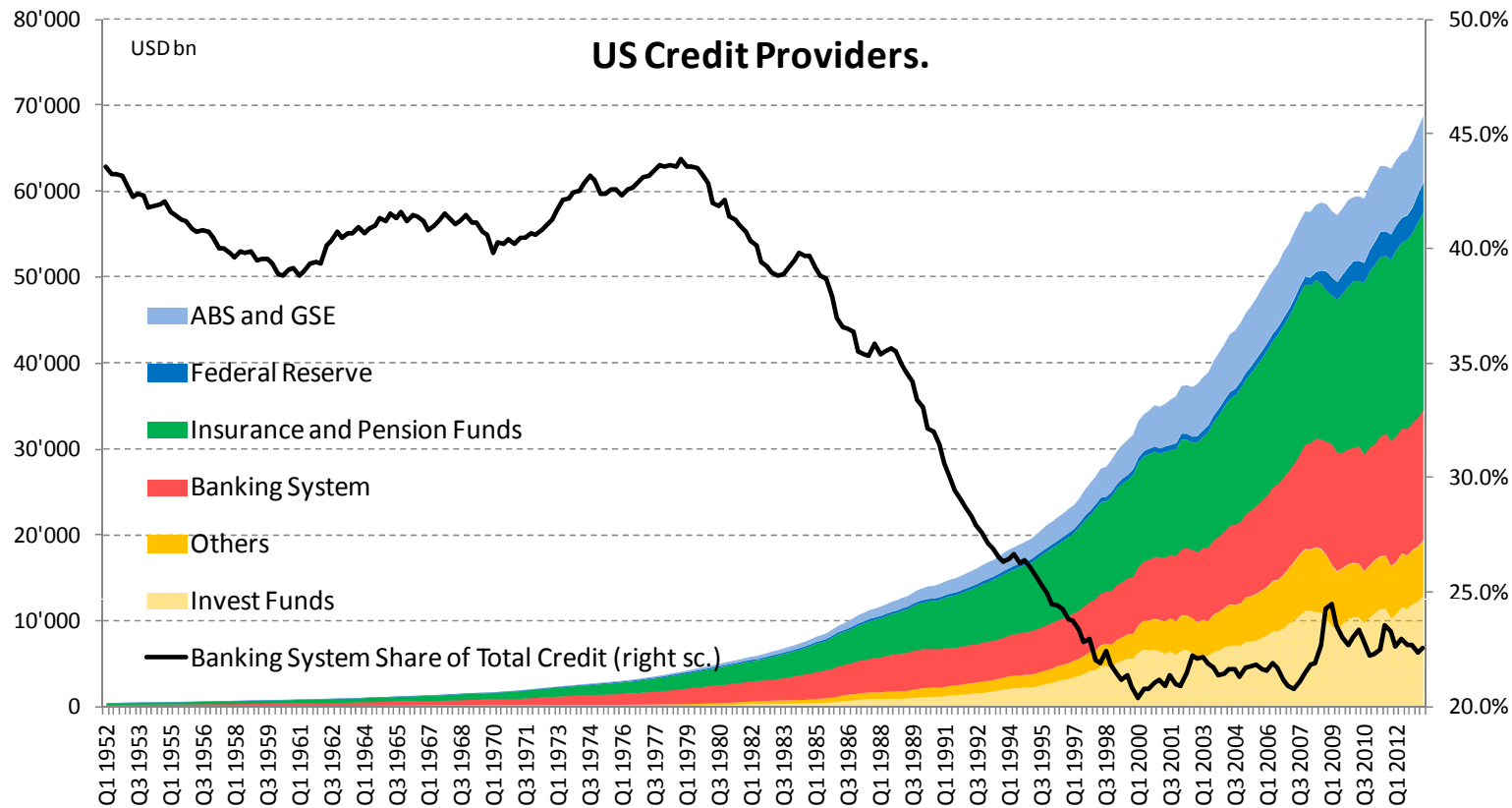
*European Banking Authority - Capital Exercise Oct. 12 - Q2 12 Balance Sheets*

*Federal Reserve - Stress Test March 13 - Q3 12 Balance Sheets*

US banks are less leveraged but on a riskier portfolio (also because of different accounting standards on derivatives netting).



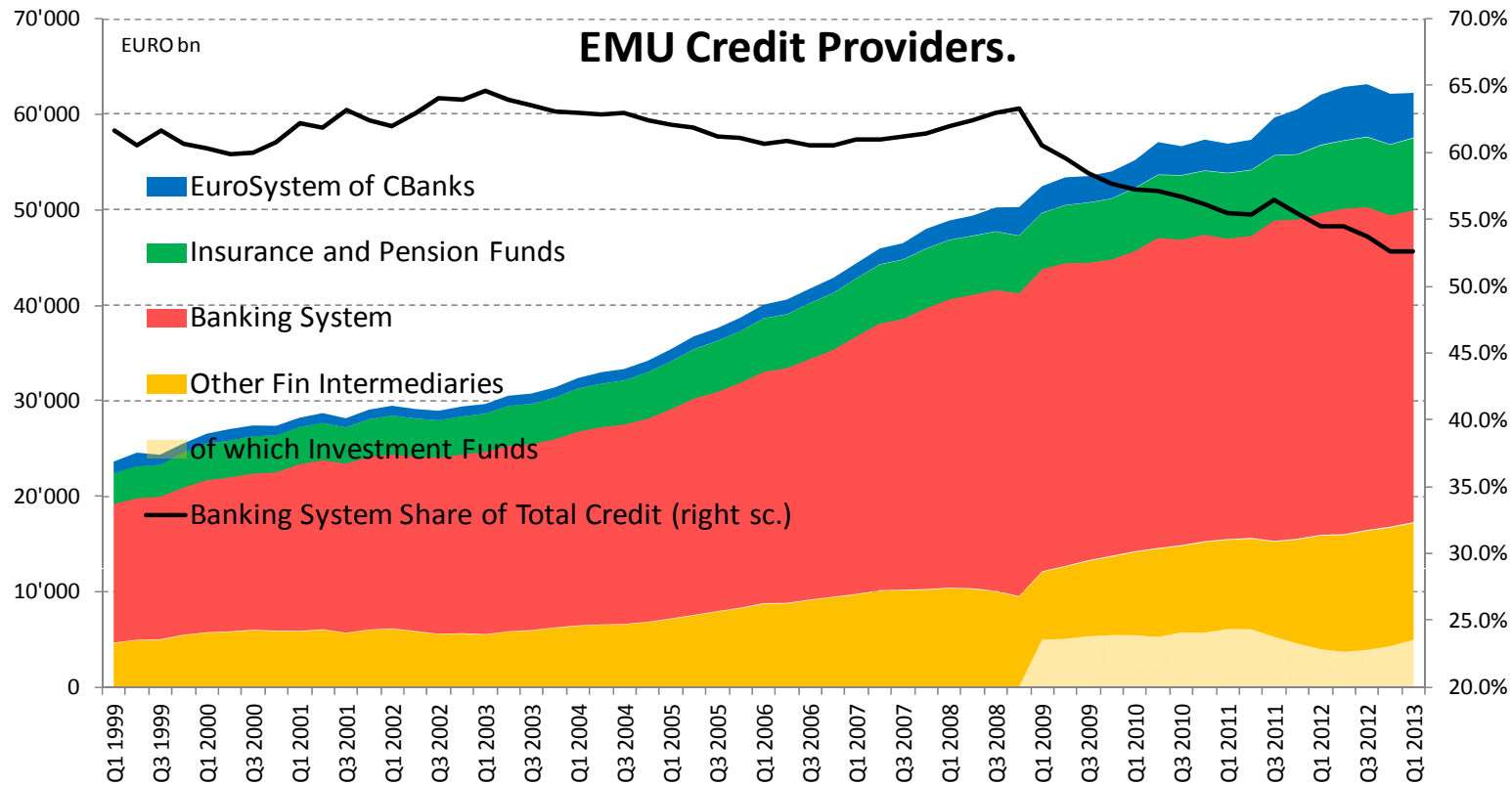
# BANKS IN THE US



Banks in the US only intermediate less than a quarter of financial flows, leaving plenty of alternative financial channels, including HF. Financial intermediation may continue during a banking crisis. The system is more resilient.



# BANKS IN EUROPE



Europe remains a bank-centric financial system, with banks intermediating over half of flows. The fragility of the system became apparent in the Eurozone crisis and is exacerbated by the unresolved link between banks and Sovereigns.



# CAPITAL AND ASSETS' VOLATILITY

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	61 EU Banks	19 US Banks	
Annual StDev	3-4%	5-6%	
Basel II - Risk Weight Coeff.	33.3%	62.0%	
Actual Capital	4.1%	8.0%	
Basel II Minimum Capital	2.7%	5.0%	(8% of RWA)
Basel II - Allowed Leverage	38	20	
Basel III Minimum Capital (including capital buffers of 5% of RWA)	4.3%	8.1%	(13% of RWA)
Basel III - Allowed Leverage	23	12	



# THE IMPORTANCE OF FAILURE

“New Economic Thinking recognizes that economic agents, and economists, have imperfect understanding, are prone to error and face a complex dynamic system”

(INET Vision Working Group – WIP – November 2013)

In such an environment, failure is an inescapable part of the process of human progress and knowledge accumulation. Early recognition and correction of mistakes improves resilience, as do buffers and shock absorbers such as bank capital or social safety networks.

Intrinsic fallibility and radical uncertainty.



# HEDGE FUNDS FAILURES

Failure, among HF, is defined as funds ceasing to exist. This “Attrition” usually occurs simply because returns don’t match investors’ expectation.

It very rarely occurs because of an insolvency. Notable exemptions were LTCM (1998) and Peloton (2009) which were among the very few HF that allowed their risk to balloon towards banking levels.

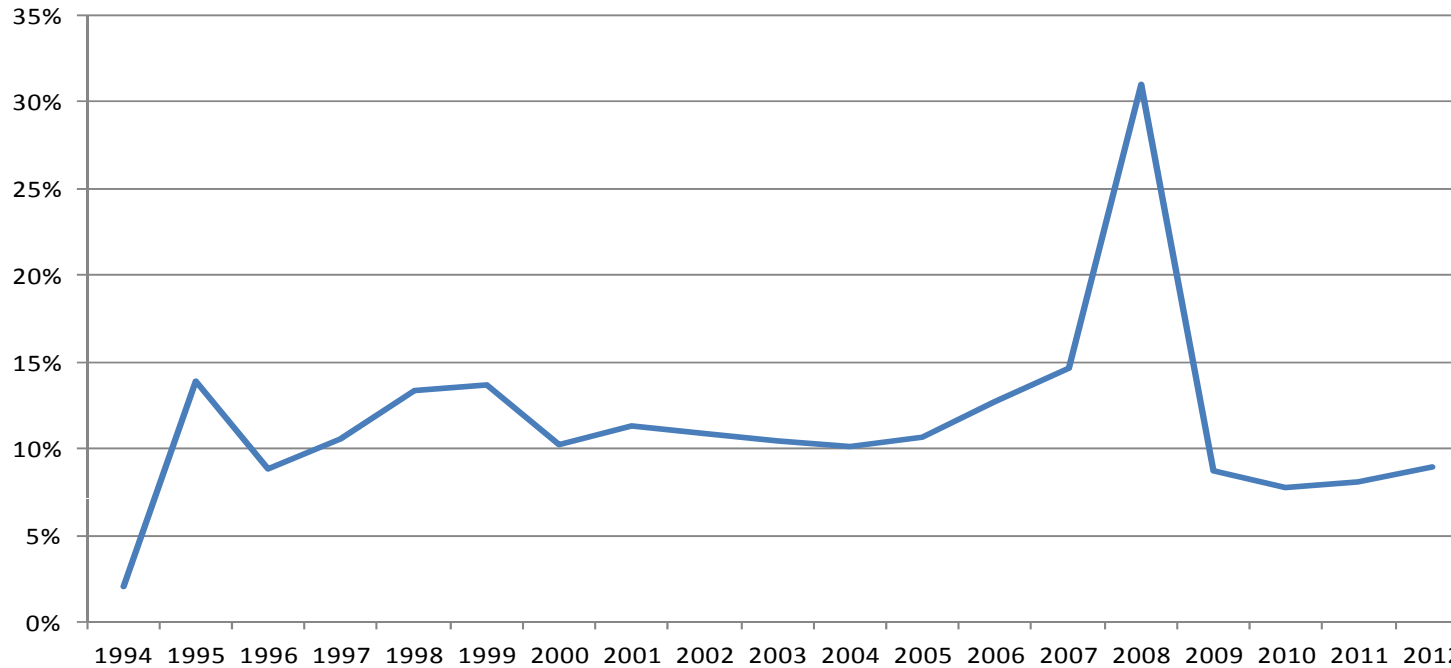
In a crisis, HF fail because disappointed investor redeem entirely after losses exceed expectations. This happens when a fund loses 3-4 times its annual standard deviations. An aggressive HF with a 12% annual standard deviation will probably be redeemed to oblivion if it suffers a drawdown of -50% or so.





# CREATIVE DESTRUCTION

## Hedge Fund Attrition Rate

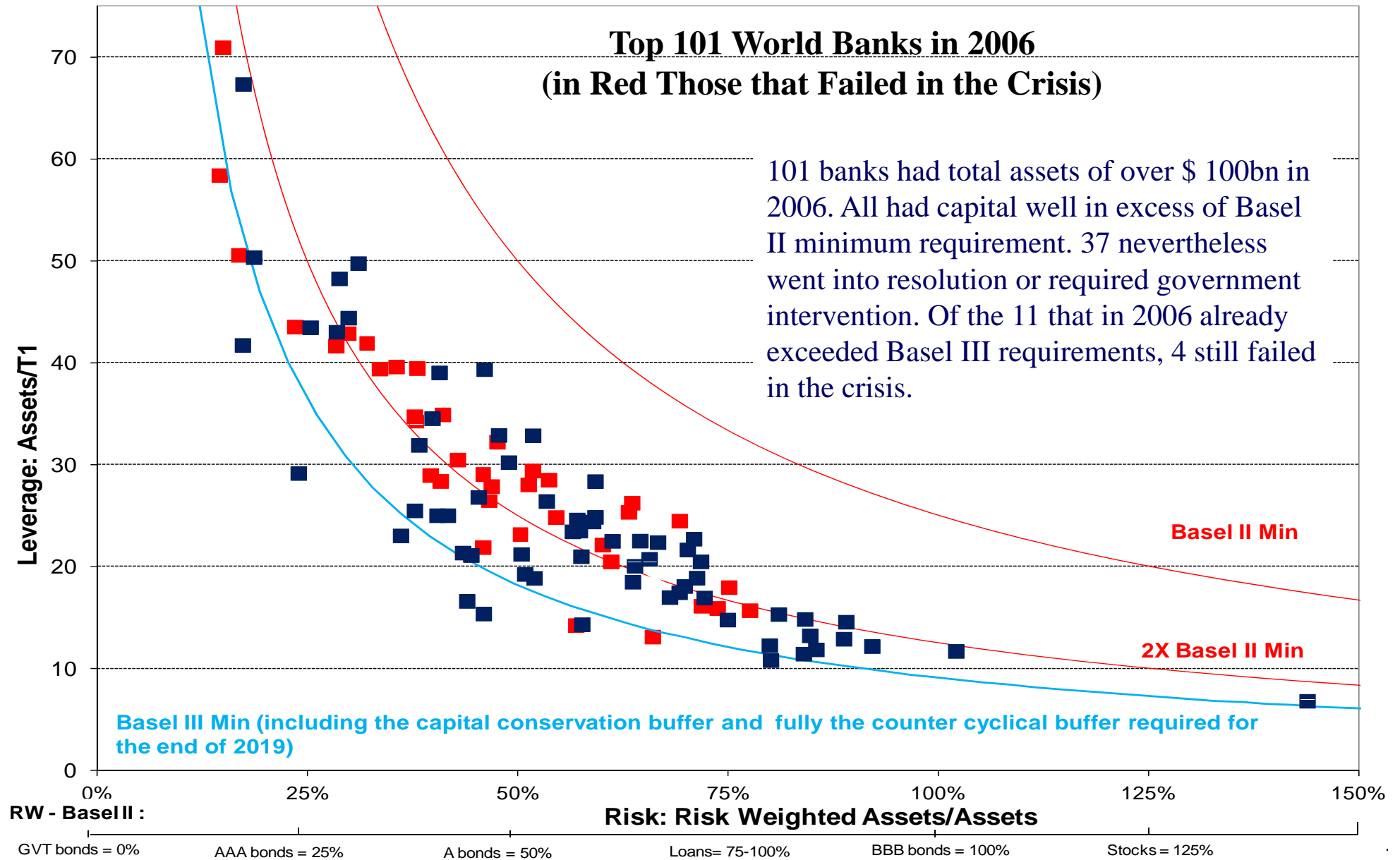


Note: Attrition rate is the % of funds in a database that disappear each year, thus overestimating the actual shutdown rate. Source: CISDM (from 1994 to 2009), HFR (from 2010 to 2012).

Failure among HF is a frequent event that should never have systemic consequences (LTCM did).



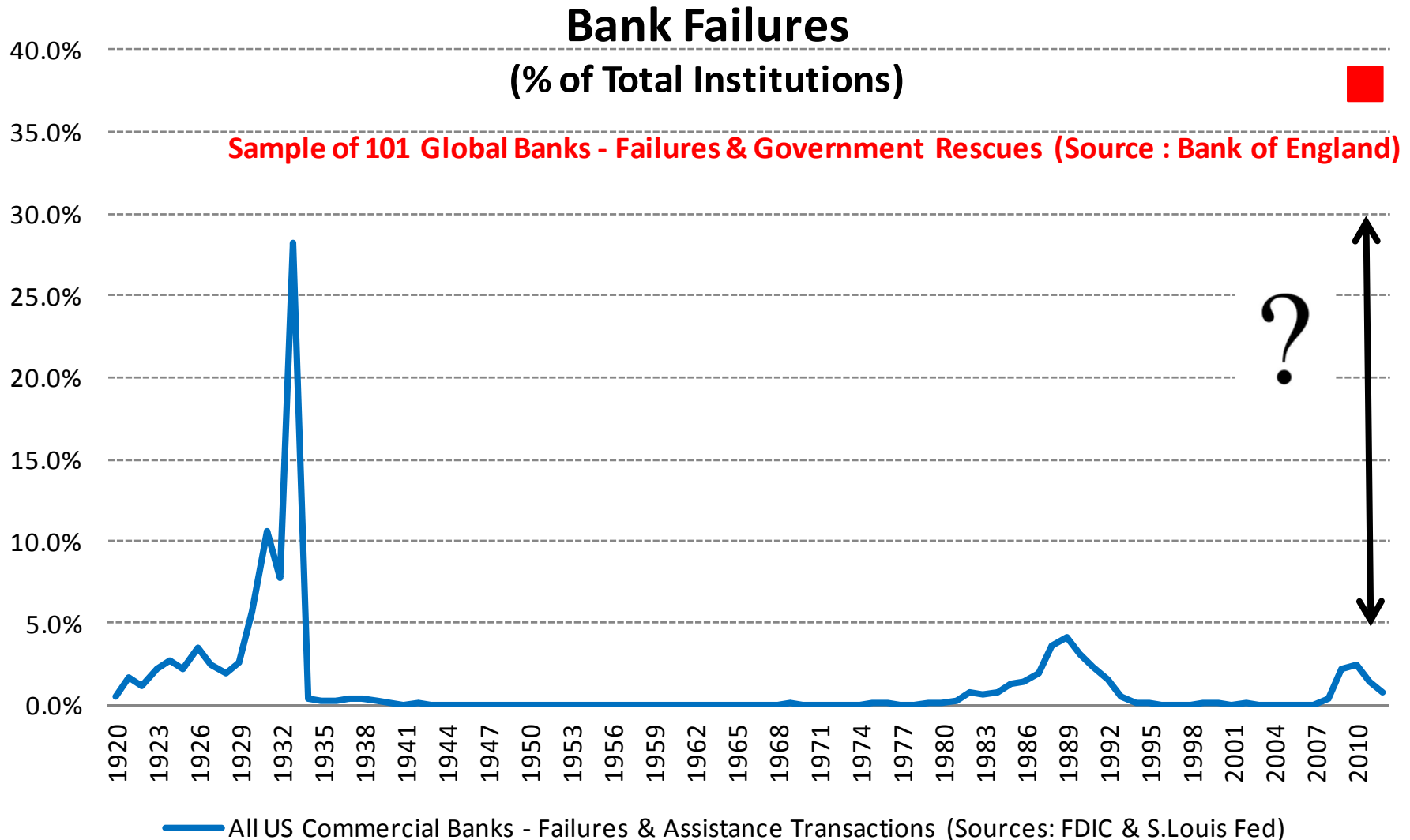
# FAILURE AMONG BANKS



Source of Data : Bank of England



# DISTORTING CONSERVATISM



Failure is a matter of definitions...



## BANK FAILURE DEFINITION

“The solvency of a bank depends on whether the value of its assets, *if held to maturity*, is sufficient to meet its obligations to depositors and holders of other bank debt” (John Vickers, “Some Economics of Banking Reform” Dec, 2012 – emphasis added).

If banks are to rely on markets, rather than taxpayers, for their funding, they must remain solvent on a mark-to-market basis.

The fuzzy and unworkable concept of “value if held to maturity” relies on estimates made by economic agents that are bound to be even more biased than the market (the management that brought the bank in trouble, the authority whose supervision failed).

A butterfly effect: an apparently small mistake in the regulator’s definition of bank solvency has triggered the biggest financial hurricane in 80 years.



# SUMMARY AND CONCLUSION

## Summary:

- 1) Heavily regulated banks guaranteed by their Sovereign create a fragile system and are obsolete.
- 2) Unregulated HF relying only on their own resources are a more robust system and foster innovation.

## Conclusion:

**REGULATE ALSO HEDGE FUNDS HEAVILY!**



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After earning a degree in Political Economy from Bocconi University in Milan, he worked in Tokyo, New York and London to complete his training. He has been professionally involved in Private Banking and with Hedge Funds since the mid-1980's. In addition to co-managing several leading multimanager Hedge Funds, including Leveraged Capital Holdings N.V., the world's oldest offshore multimanager fund, and Global Managers Selection Funds, the largest Italian Fund of Hedge Funds, Antonio Foglia is or was also a director of several Hedge Funds, including George Soros' Quantum Endowment Fund.

Antonio Foglia is a member of the Swiss Society for Financial Market Research and of the Italian Financial Analysts' Association. He served three terms on the Foundation Board of the Swiss Finance Institute, is a member of the Scientific Committee of Italy's Confindustria and a Trustee of the Central European University.

Articles by Antonio Foglia appear on Italy's leading newspapers Corriere della Sera and il Sole 24 Ore.

The author is grateful for research assistance provided by Chiara Casale. Parts of this research have appeared also on Lex Columns in the Financial Times. The views expressed in this presentation are those of the author only and not of the institutions with which he is affiliated.

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