

**HAVE WE MISUNDERSTOOD
BANKING AND FINANCE ?
AN ALTERNATIVE VIEW OF
THE GLOBAL FINANCIAL CRISIS**

Antonio Foglia

**HAVE WE MISUNDERSTOOD
BANKING AND FINANCE ?
AN ALTERNATIVE VIEW OF
THE GLOBAL ~~FINANCIAL~~ CRISIS
BANKING**

**HAVE WE MISUNDERSTOOD
BANKING AND FINANCE ?
AN ALTERNATIVE VIEW OF
THE GLOBAL ~~FINANCIAL~~ CRISIS
~~BANKING~~
INVESTMENT BANKING**

**HAVE WE MISUNDERSTOOD
BANKING AND FINANCE ?
AN ALTERNATIVE VIEW OF
THE GLOBAL ~~FINANCIAL~~ CRISIS
~~BANKING~~
~~INVESTMENT BANKING~~
BROKERS**

- **GLOBAL FINANCE MOVED AWAY FROM MARKETS AND ONTO BANKS BALANCE SHEET.**
- **RISING IMBALANCES AND WEAKER INTERMEDIARIES LED TO THE GREAT BANKING CRISIS.**
- **BANKS WERE REGULATED INTO BEING 3 TIMES RISKIER THAN UNREGULATED HEDGE FUNDS.**
- **THE REGULATORY RESPONSE TO THE FIRST EPISODE OF THE GREAT FINANCIAL CRISIS IS ALREADY SEEDING THE NEXT.**

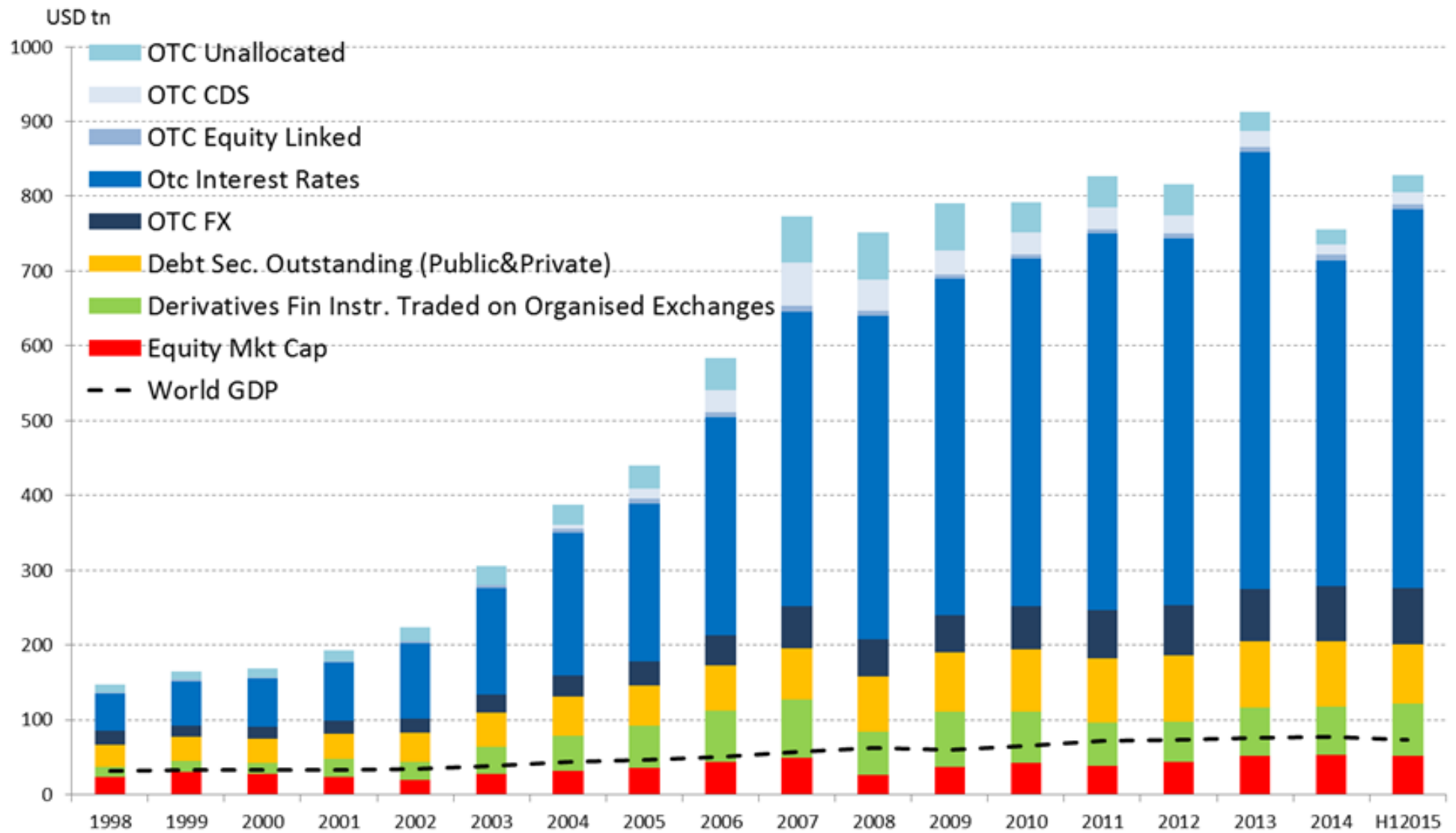
A BRIEF HISTORY OF GLOBAL FINANCE

- Prehistory :** Assorted banking crisis followed by nationalisations and/or regulations. In the US, Glass-Steagall, branching restrictions.
- 1974 :** Fall of “Bretton Woods”, formal end of Gold Standard, floating exchange rates.
- 1973,1979 :** Oil shocks and trade imbalances. Two models for petrodollars recycling.
- 1982 :** LatAm debt crisis affects US Money Center Banks.
- 1986 :** Big Bang in the UK.
Gradual lifting of barriers between commercial banking and securities business in the US. Interstate banking permitted in NY.
- 1992 :** Basel 1: Tier 1 Ratio = Equity/Risk Weighted Assets.
- 2004 :** Basel 2: Refines RWA calculation, glorifies Rating Agencies.
- 2019 (?) :** Basel 3: Increases Equity, introduces liquidity, (LCR,NSFR).

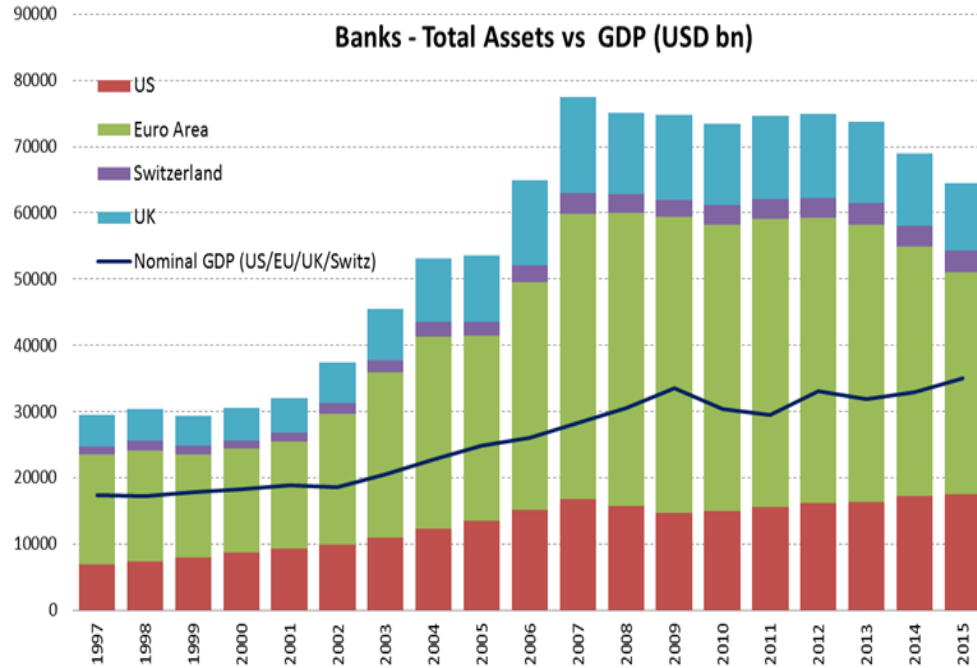
FROM MARKETS TO BANK BALANCE SHEETS

- Financial innovations in the 1970ies meant exchange-traded products, like financial futures, traded in transparent markets.
- These products were adequately margined and were settled through agency-oriented Central Clearing Counterparts insulating end-users from broker and counterparty credit risk.
- Since the mid-1980ies financial innovation became over the counter traded derivatives in the form of banks' balance sheets products, like interest rate swaps or credit default swaps.
- Balance sheet products expose end-users to counterparty credit risk hence trading quickly concentrated on too big to fail banks.
- These products swell bank balance sheets that became oligopolistic shallow trading domains where TBTF banks extracted a position rent by front-running captive clients (also known as “market making”).

FROM MARKETS TO BANK BALANCE SHEETS

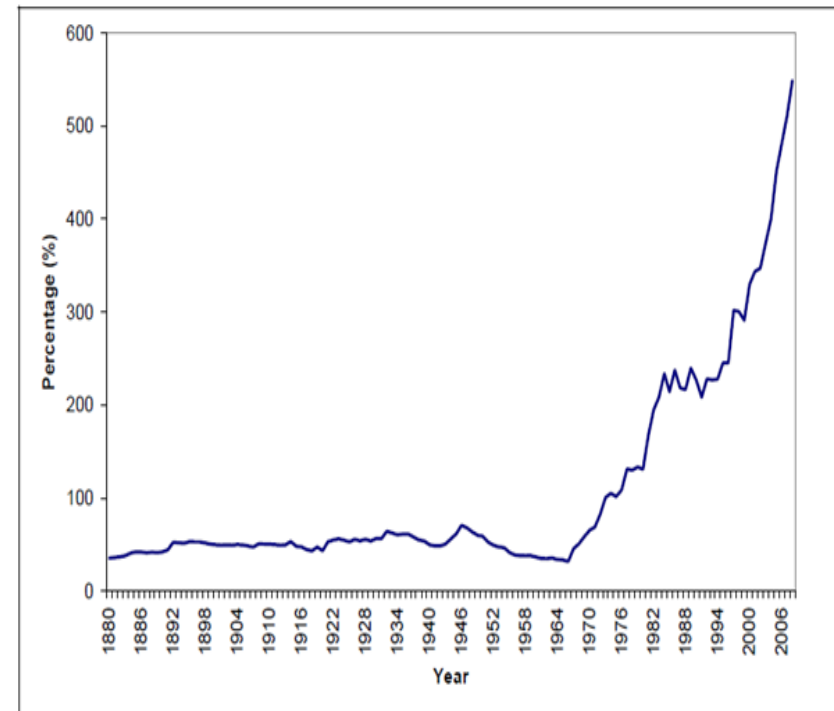


THE SWELLING OF BANKS' BALANCE SHEETS



Worldwide, but particularly in London !

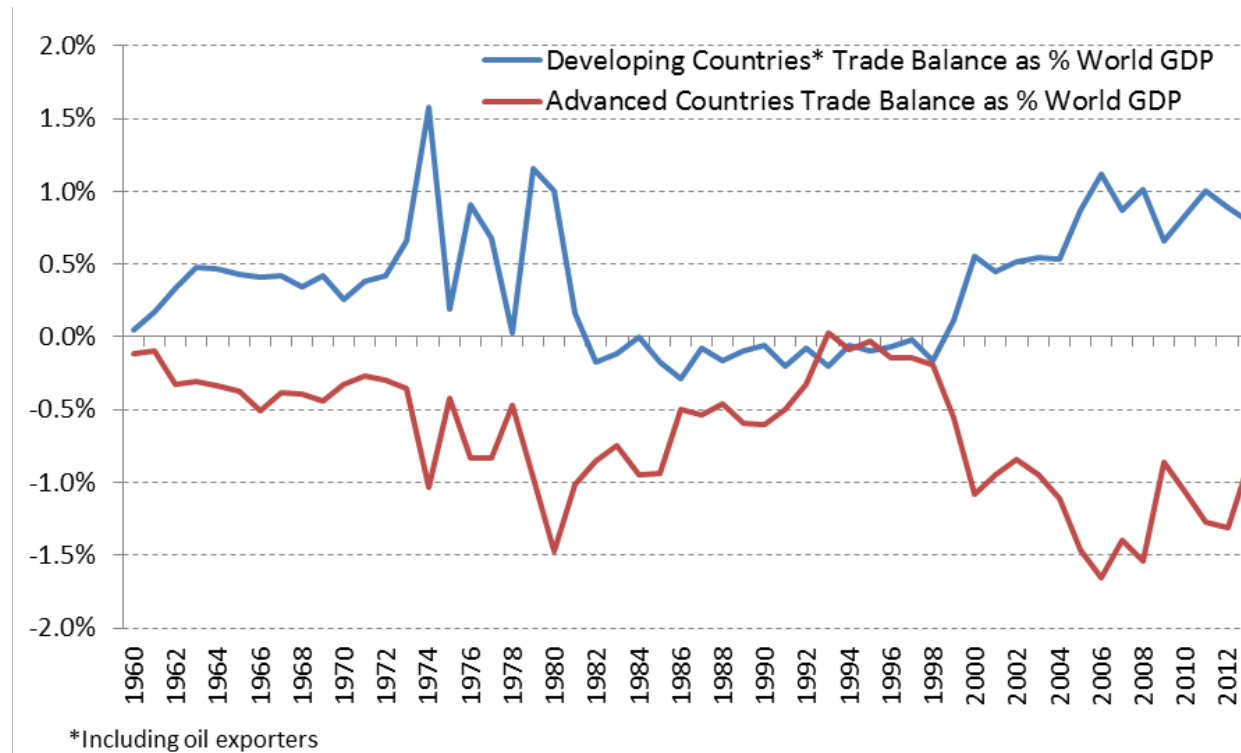
UK banking sector assets as % of GDP



Source: Sheppard, D. K (1971) and Bank of England.

Note: The definition of UK banking sector assets used in the series is broader after 1966, but using a narrower definition throughout gives the same growth profile.

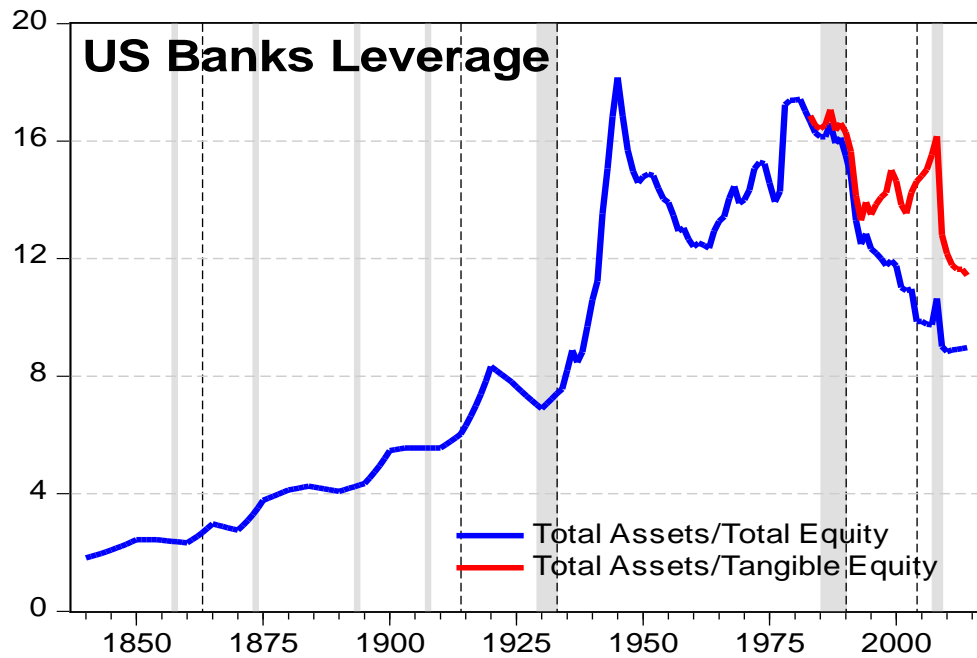
THE FUEL OF GLOBAL FINANCIAL CRISIS: International imbalances



As before the banking crisis of 1982, that led to the Basel I regulations, international trade imbalances had created vast pools of savings that had to be recycled through the financial system. In the period leading to the 1982 crisis American banks, limited in their national ambitions by US regulations, recycled petrodollars into Latin America. Before the current crisis, banks were crowded out of the best credit markets (US Treasury and corporate AAA) by SWF and moved into riskier investments.

But why are banks always getting into troubles?

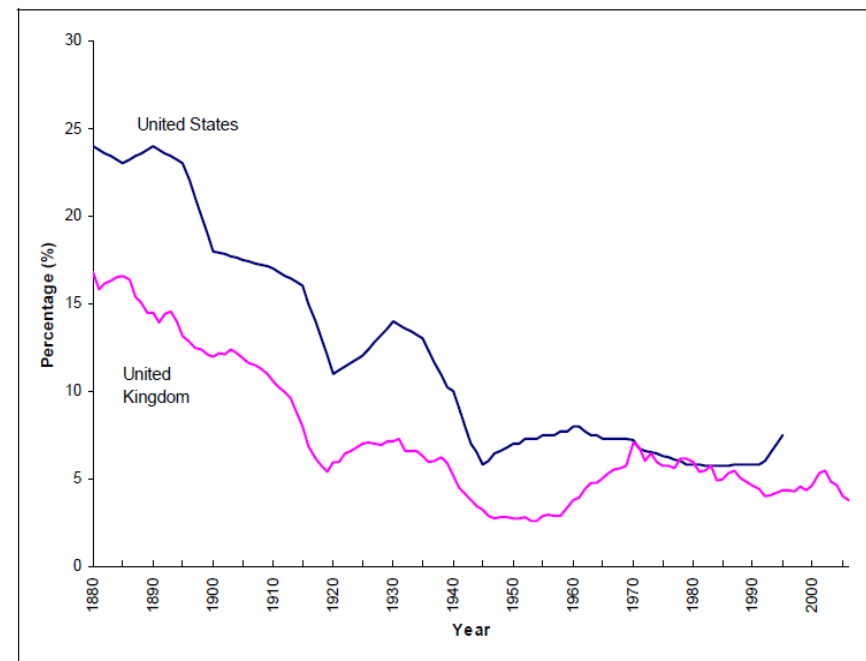
BANKS GROWING INCREASINGLY WEAKER



- (a) National Banking Act – 1863
- (b) Creation of Federal Reserve – 1914
- (c) Creation of Federal Deposit insurance Corp – 1933
- (d) Implementation of Basel risk-based capital requirement – 1990
- (e) Implementation of Basel II risk-based capital requirement – 2004

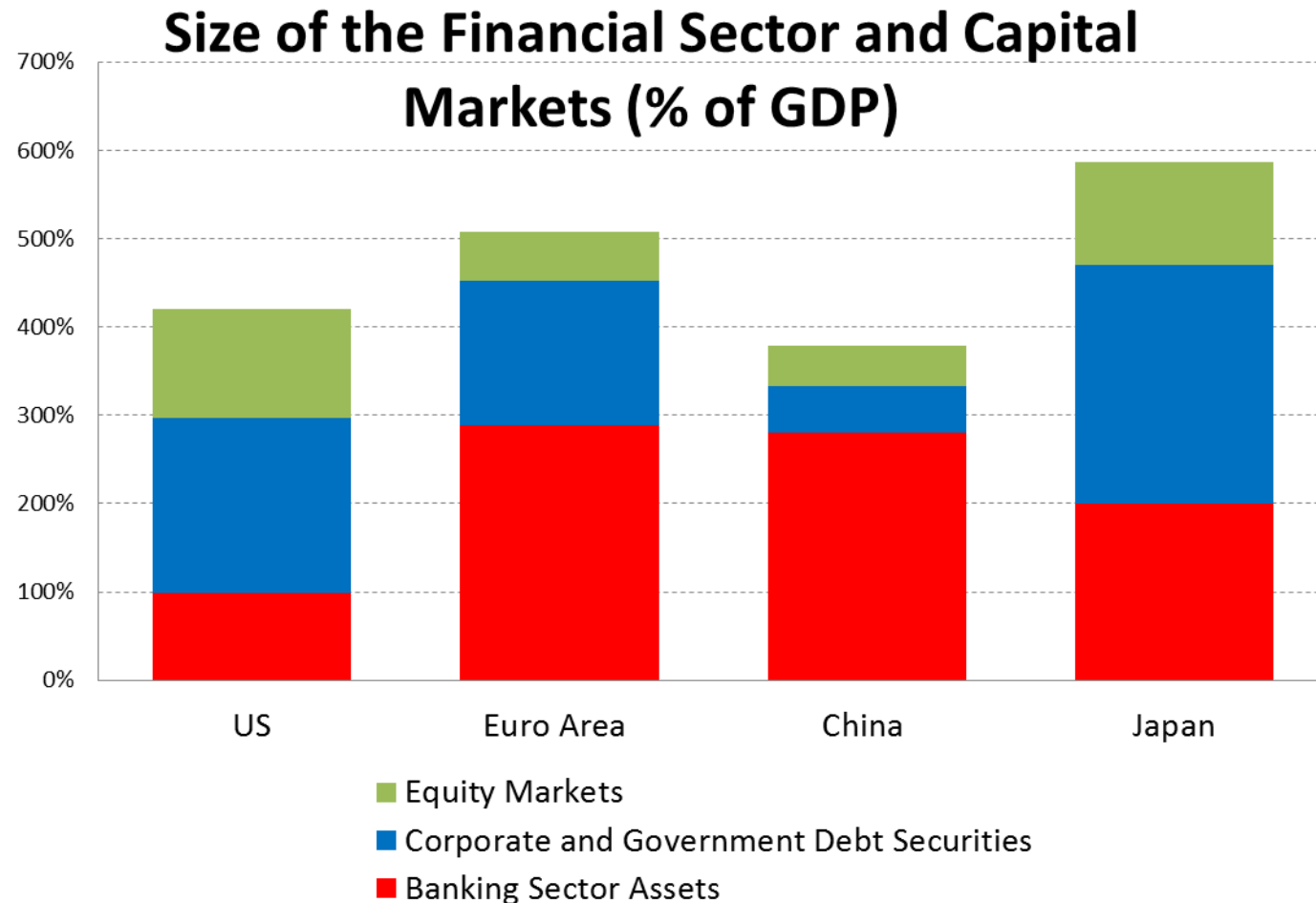
Shaded Areas point out US banking crisis
 Source: Federal Deposit Insurance Corporation

Capital ratios for UK and US banks

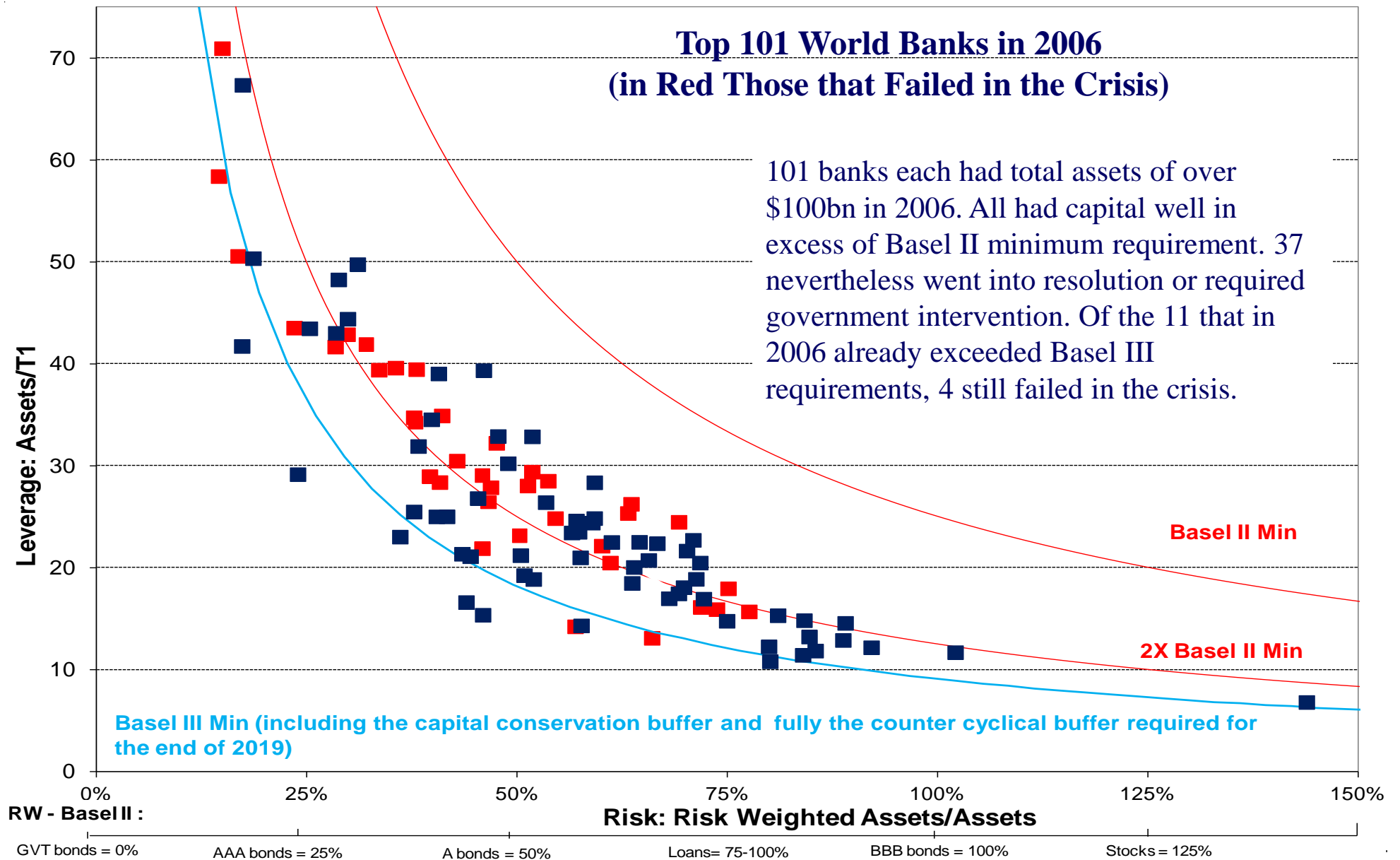


Source: US: Berger, A, Herring, R and Szegő, G (1995). UK: Sheppard, D.K (1971), BBA, published accounts and Bank of England calculations.

LESS BANKS, MORE RESILIENCE



40% OF LARGE BANKS FAILED



Source of Data : Bank of England (A. Haldane: The dog and the frisbee, 2012)

BANK FAILURE DEFINITION

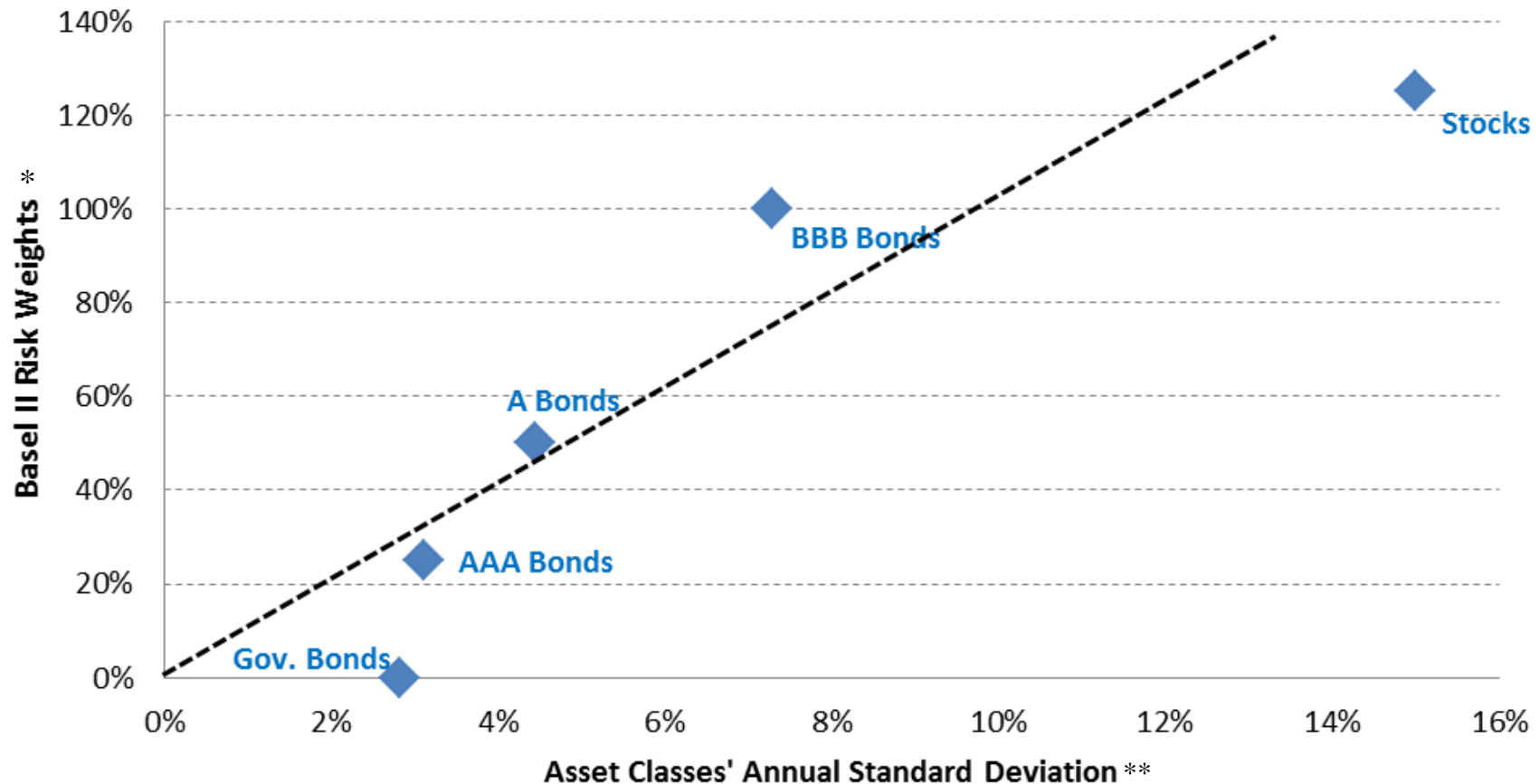
“The solvency of a bank depends on whether the value of its assets, *if held to maturity*, is sufficient to meet its obligations to depositors and holders of other bank debt” (John Vickers, “Some Economics of Banking Reform” Dec, 2012 – emphasis added).

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.

RISK WEIGHTING AND VOLATILITY



* Standardised Approach and “Swiss Finish”

** Stand. Dev. of time series from CGBI World Gov. Bond Index, BOA/ML Bond Indices, MSCI World

- Risk Weighting is broadly consistent with the volatility of each asset class.

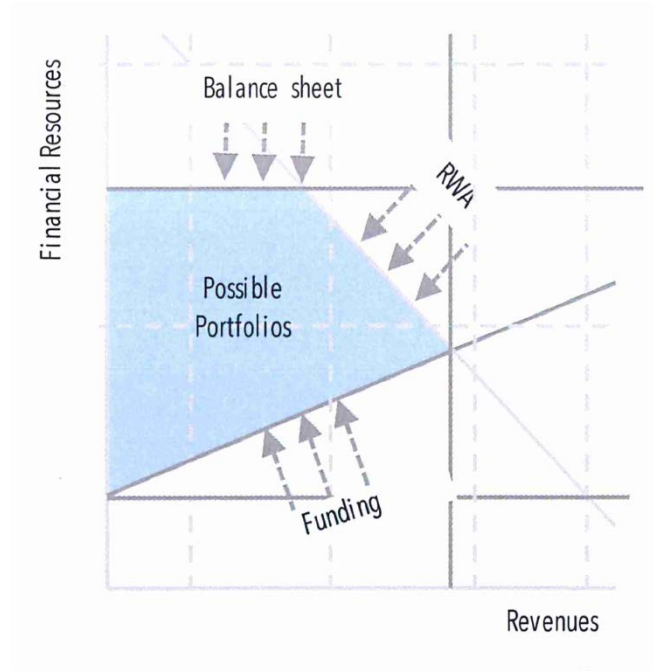
CAPITAL AND RISK WEIGHTED ASSETS

	Gov Bonds	AAA Bonds	A Bonds	BBB Bonds	Stocks
Annual StDev *	2.8%	3.1%	4.4%	7.3%	15.0%
Basel II - Risk Weight Coeff.	0%	25%	50%	100%	125%
Basel II Minimum Capital	-	2%	4%	8%	10%
Basel II - Allowed Leverage	∞	50	25	12.5	10
Basel III Minimum Capital (including capital buffers of 5% of RWA)	-	3.3%	6.5%	13%	16.3%
Basel III - Allowed Leverage	∞	30	15	8	6

* Stand. Dev. of time series from CGBI World Gov. Bond Index, BOA/ML Bond Indices, MSCI World

While the risk weights are broadly in line with volatility, Basel capital requirements at around one annual standard deviation of the assets they refer to is perplexing. And this is before exploiting the benefits of diversification and considering fat tails risk.

HOW BANKS ARE REGULATED AND OPERATE



- On latest count by a leading bank's treasurer, no less than 36 explicit constraints on bank balance sheets.
- These constraints define the multi dimensional space of permissible portfolios.
- Within those constraints, banks must optimise in order to achieve a return on equity higher than their cost of capital.

BANKS, 10 YEARS AFTER (2006 -2016)

Top US*			
	Dec.06	Sept.15	Diff%
RWA/TA	66.8%	67.2%	1%
Leverage	17.3	11.4	-34%
Tier1 Ratio	7.0%	13.8%	98%
ROA	1.3%	0.9%	-30%
ROE	20.8%	8.6%	-58%

Top US : GS/MS/JPM/Citigroup/WellsFargo/BoA



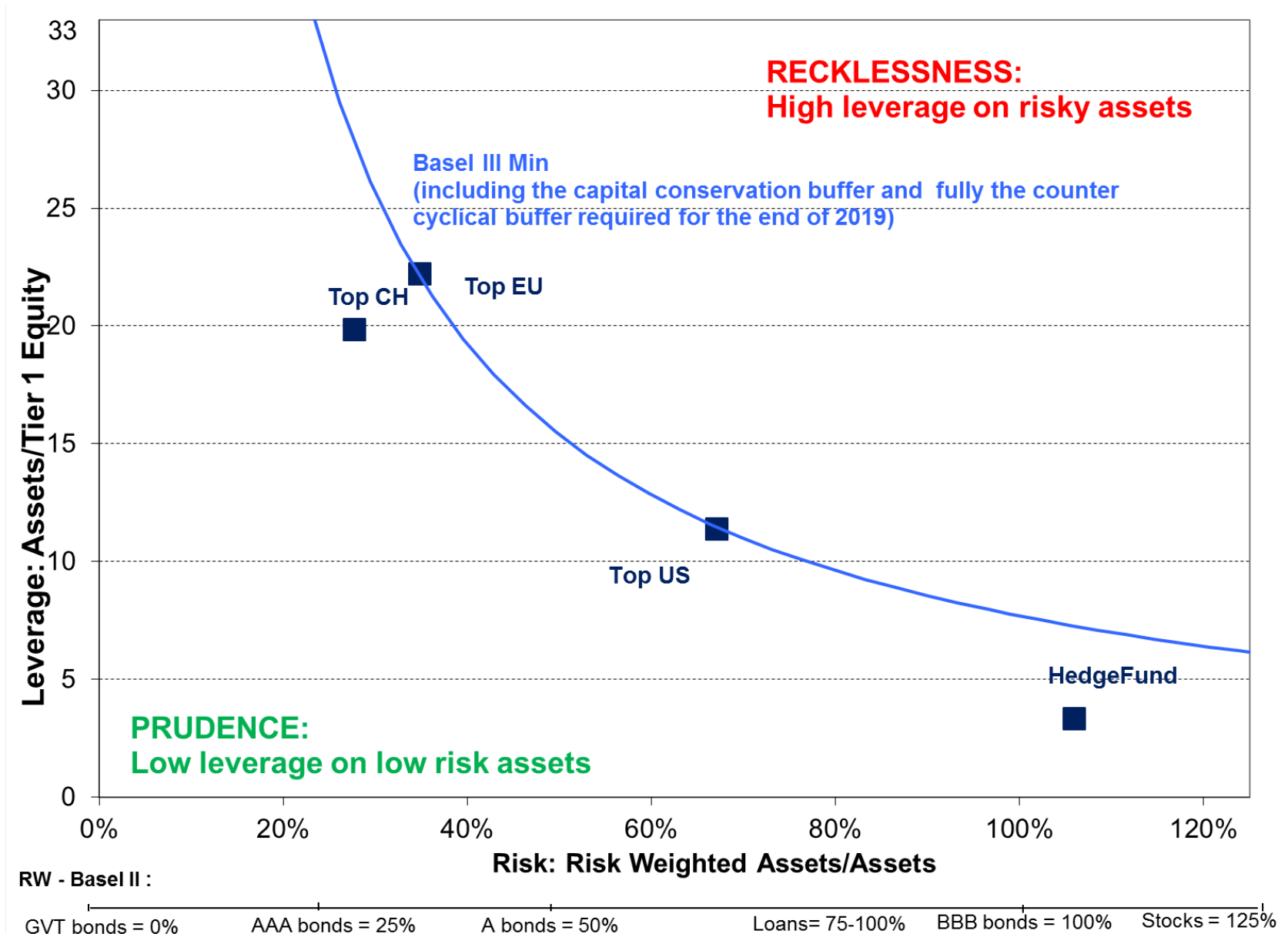
Top EU			
	Dec.06	Sept.15	Diff%
RWA/TA	37.4%	34.9%	-7%
Leverage	34.2	22.2	-35%
Tier1 Ratio	8.0%	13.5%	70%
ROA	0.7%	0.2%	-72%
ROE	17.4%	2.5%	-85%

Top EU: HSBC/DB/BNP/RBS/Barclays/CreditAgr/Santander/SocGen/Unicredit/Intesa S.Paolo



* Due to different accounting standards (US GAAP vs EU IFRS), European banks are not allowed to net their derivatives exposure. Hence, European banks' total assets are approximately 20/30% higher than US banks' total assets. Adjusting for this difference, Top US banks' RWA/TA ratio at Sept. 2015 declines to 52% from 67%, while their leverage ratio increases to 15 from 11.4.

COMPARING BANK'S RISK AND LEVERAGE



REVERSE ENGINEERING BASEL RATIOS

Banks have large and complex portfolios of assets, many of which are difficult to value. Given the vastness and complexity of banks' balance sheets, management and regulators rely on ratios but do not have a concrete perception of the risk of banks' books.

In a paper published by the Swiss Finance Institute in late 2008*, I showed how Basel ratios can be reverse-engineered into a simple, but risk-equivalent, portfolio of 2 assets.

This approach gives a practical understanding of the true level of riskiness of banks' balance sheets when viewed as an investment portfolio subject to mark-to-market volatility.

* http://www.swissfinanceinstitute.ch/op01_update.pdf

BANKS COMPARED TO AN AGGRESSIVE HEDGE FUND

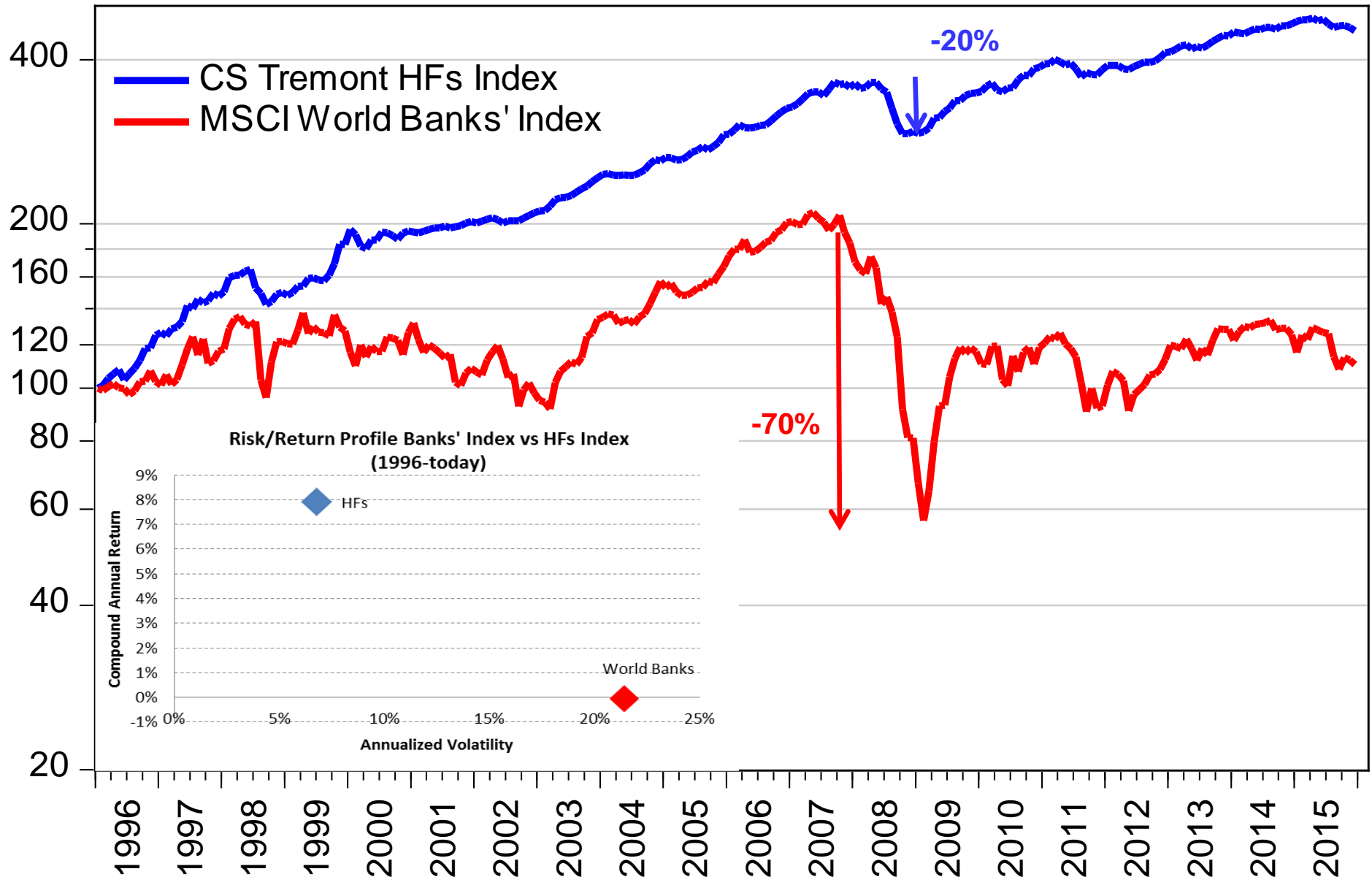
Top EU (Q3-2015)

	<i>Nominal</i>	<i>Basel II coef</i>	<i>Risk Weighted</i>
Stocks	211	@125%	264
AAA Bonds	2009	@25%	502
Tot Assets	2220		766
Equity	100		
Eq/RWA	13%		Tier 1 Ratio of Banks
Leverage	22		
RWA/TA	35%		

HF Balance Sheet

	<i>Positions</i>	<i>Basel II Multiple</i>	<i>RWA</i>
Stocks Long	150	@100	150
Stocks Short	80	@100	80
Stocks Net	70		
Gov Bond , 8y duration	100	@0	0
Corp Bond BBB 3y duration	30	@100	30
Foreign currency	50		
Interest rate risk			29.0
Currency risk			62.5
Total Positions	330		
Total Risk Weighted Assets			352
Equity	100		
Eq/RWA	28.4%		Tier 1 Ratio of Aggressive HF
RWA/TA	107%		
Leverage	3.3		
Min Capital according to Basel III (13% of RWA including add on) = 45.8			

HEDGE FUNDS ARE THREE TIMES LESS RISKY THAN BANKS



BANKS STILL RUNNING CRAZY BALANCE SHEETS!

Simplifying assumptions:

- No risk weight for other risks (operational etc.)
- BUT no benefit from diversification, which usually cuts by about 40% RWA in banks' models

Diversification benefits and dynamic risk control suffer from fallacy of composition that makes them systemic problems.

Some consider the goodwill associated with a banking licence as an important hidden asset. But this also assumes a bank is allowed to continue operations through taxpayers' funding also when considered potentially insolvent by the market. It happened in the Financial Crisis but should not happen again.

BANK CAPITAL AND EXCESSIVE COMPENSATION

- The problem of excessive compensation in big banks can be read as one of insufficient capital which leads to unreasonably high pre bonus ROE (due to both fat “R” and too small “E”) which managements reduce to publishable ROE by pocketing the difference.
- The “R” is bigger than it should be also due to the “Too Big To Fail” rent position big banks enjoy as OTC market makers in securities and derivatives. There can be no differentiation between front running and market making when dealing with captive clients as in current oligopolistic OTC markets.
- The “E” is too small due to the grossly underestimated minimum capital requirement positions the banks have been regulated into. This was the devastating result of years of pondering by the sort of internationally coordinated regulatory effort, from which the solution to the current predicament is still expected.

2014 COMPENSATION LEVELS AND ROE

Top US Banks	<i>Total employees</i>	<i>Avg Actual Compensation (USD)</i>	<i>Actual ROE</i>	<i>ROE at Avg. Fin Sector Compensation</i>	<i>ROE at Avg. Fin Sector Compensation and 2x Capital</i>
Goldman Sachs	34,000	373,265	11.2%	25.6%	12.8%
Morgan Stanley	55,802	319,415	4.9%	27.0%	13.5%
Wells Fargo	264,500	113,202	13.7%	25.5%	12.8%
JPMorgan	241,359	124,959	9.8%	16.7%	8.4%
Bank of America	224,000	150,835	1.7%	15.1%	7.5%
Citigroup	241,000	99,415	3.4%	8.9%	4.5%
Average US	176,777	196,848	7.4%	19.8%	9.9%
Top European Banks	<i>Total employees</i>	<i>Avg Actual Compensation (USD)</i>	<i>Actual ROE</i>	<i>ROE at Avg. Fin Sector Compensation</i>	<i>ROE at Avg. Fin Sector Compensation and 2x Capital</i>
Barclays	132,300	137,029	-0.3%	11.6%	5.8%
Société Generale	148,322	81,047	5.0%	9.4%	4.7%
Credit Agricole	72,567	115,976	5.3%	7.2%	3.6%
DB	98,138	169,374	5.4%	19.0%	9.5%
BNP Paribas	187,903	104,644	0.2%	6.8%	3.4%
Credit Suisse	45,800	270,633	4.1%	17.2%	8.6%
UBS	60,155	277,799	7.0%	38.8%	19.4%
Average EU	106,455	165,215	3.8%	15.7%	7.9%
TOT AVERAGE	141,616	181,032	5.6%	17.8%	8.9%

Sources:

Banks' Balance Sheets (End 2014), US BEA, UK ONS, Swiss Federal Statistical Office

US Financial Sector's Average Annual Compensation = 68,000 USD

UK Financial Sector's Average Annual Compensation = 75,000 USD (45,000 GBP)

EuroArea Financial Sector's Average Annual Compensation = 75,000 USD (55,000 Euro)

Swiss Financial Sector's Average Annual Compensation = 135,000 USD (150,000 CHF)

Average Financial Sector
Compensation is \$ 75,000.
Top Banks pay 2-3x that.

CAPITAL AT NORMALIZED COMPENSATION

- Had banks paid in 2006 the average compensation of USD 75,000 for the financial sector (US Bureau of Labour; average US wages in all sectors were USD 39,200), a sample of the major US and European banks would have reported ROE of 31.5% versus the 19.5% ROE they actually reported given the excessive compensation they paid.
- In 2014, reported ROE fell to 5.6% on average. Of the decline from 19.5% in 2006, roughly 5% was lost due to higher capital and 9% due to worse business conditions. But had banks paid in 2014 only average financial sector compensation, the reported ROE would have been 17.8%, way too high for a business enjoying government support in a zero interest rates environment.
- If banks paid average financial sector compensation AND had twice the current capital, their ROE would be 8.9%, broadly in line with their cost of capital.

A COGNITIVE FAILURE IS PRECIPITATING THE WRONG RESPONSE

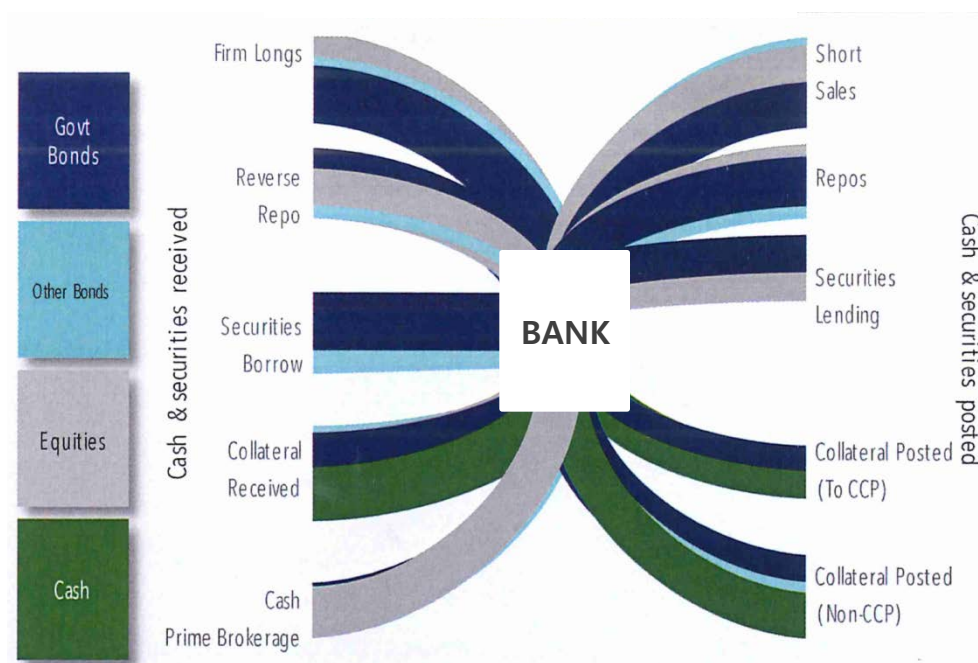
- The economy is a complex adaptive system populated by fallible agents with imperfect knowledge and understanding.
- Financial regulation and large financial institutions have become themselves complex systems.
- The financial crisis was caused by massive unavoidable cognitive failures by regulators and bankers.
- We need to switch to new paradigms to understand what happened, why it will happen again, and hopefully be more resilient when it will.
- Macro Stability fora are an example of the wrong responses precipitated by the wrong diagnosis of the crisis.
- Market based finance, now misnamed “Shadow Banking” is a far sounder response.

A BARRAGE OF NEW RULES IS DISTRACTING FROM PRIORITIES

- The survival of Board Members and Top Management depends on compliance with rules and regulations.
- Boards (and other top governance bodies) overwhelmingly deal with rigid agendas dictated by the regulatory framework.
- The business risk is assessed essentially in terms of its distance from regulatory prudential speed limits. As prudential rules turned out to be grossly wrong, the banking system crashed unaware of its own risk and without breaking any rule.
- Drivers distracted by way too many sign posts, are likely to miss the turn and crash.



THE WRONG RESPONSE



The new rules make the financial system more fragile by pushing banking towards

- higher complexity
- higher concentration
- higher interdependence

and inhibiting the development of new markets, product and intermediaries.

But open and transparent markets are the only remedy to the cognitive mistakes that precipitated the Great Financial Crisis.

Antonio Foglia is a London based Italian and Swiss economist. He is a Board Member and shareholder of Banca del Ceresio, a private bank in Lugano, Switzerland, and of its subsidiaries in London and Milan. 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-1980s. 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, he is, or was, also a director of several hedge funds, including George Soros' Quantum Endowment Fund.

Antonio is a Global Partners' Council Member of the Institute for New Economic Thinking (INET), a member of the Swiss Society for Financial Market Research and of the Italian Financial Analysts Association. He is a Trustee of Central European University and of Bruno Leoni Institute. He served three terms on the Foundation Board of the Swiss Finance Institute as representative of Ticino's Banks Association. He is also a member of the Scientific Committee of Confindustria.

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. The views expressed in this presentation are those of the author only and not of the institutions with which he is affiliated.

afoglia@belgrave.com

www.antoniofoglia.com