



B.U.M.P

**Breaking Unconventional Monetary Policy &
Associated Risk Solutions**

CheckRisk: Nick Bullman



Simplifying the Complexity of Investment Risk:

Who understands risk?

Seeing risk as a positive.

Driving risk adjusted returns.



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POSITIONAL AWARENESS



Total Risk Monitoring

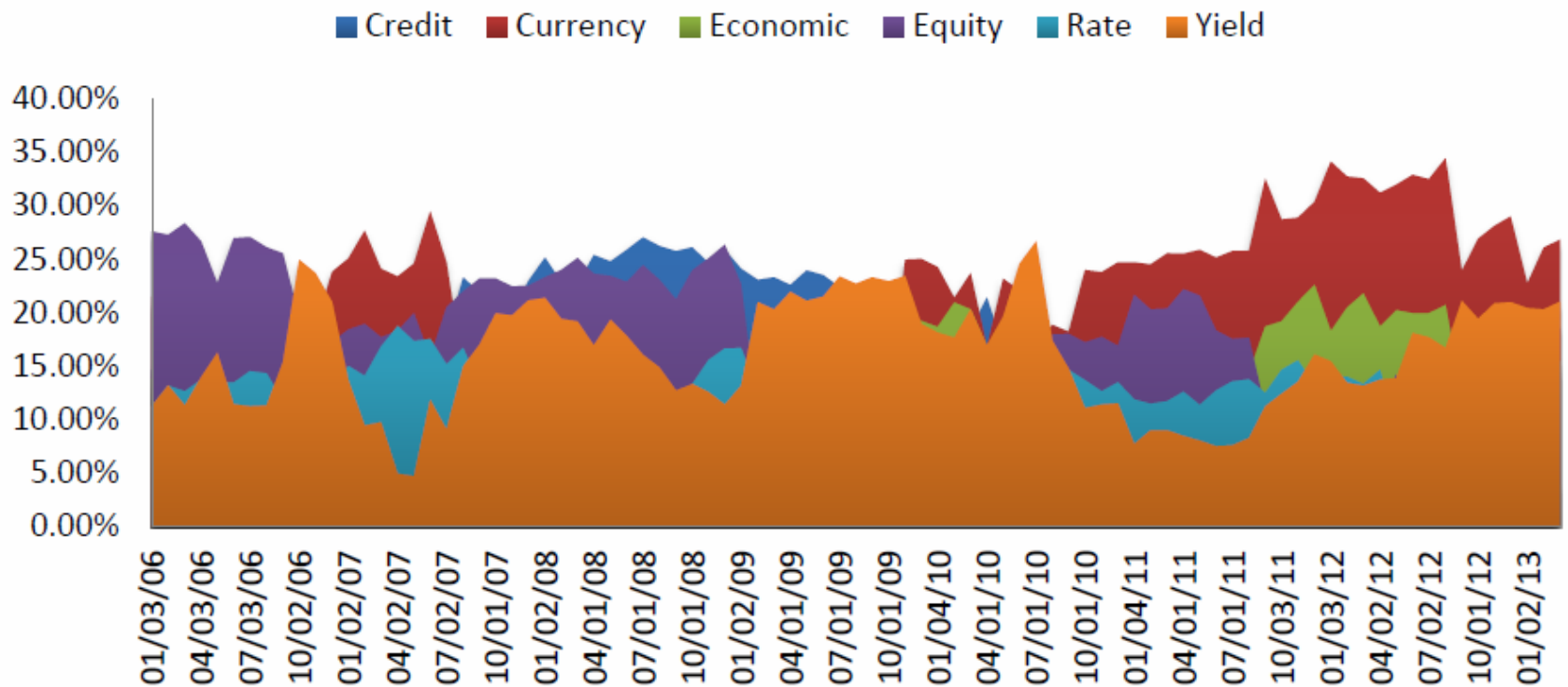




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PRMS: Factor Risks

Historic Global High Yield Portfolio Risk Components



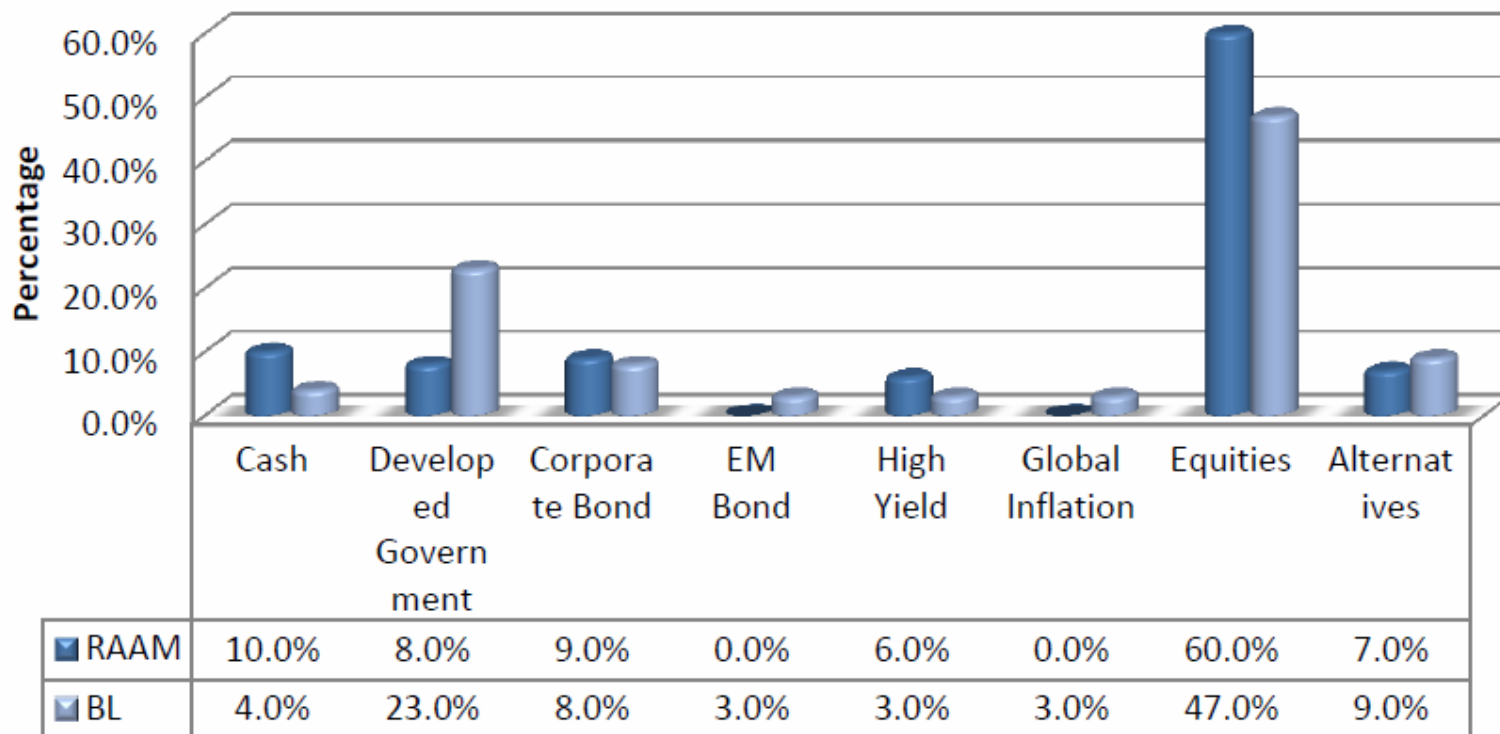
Source: CheckRisk LLP



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Risk Adjusted Asset Model

RAAM Balanced Overweight/Underweight



Source: CheckRisk LLP



Pension Fund Model for Risk

Risk Budgeting:

Setting Risk Tolerances & Limits

Risk Net must be as wide as feasible and inquisitive

Risk Understanding must be internal not abrogated to risk function

Risk Breaches must be reported immediately

Risk Appetite:

Active Cash Management

Understanding the Network Risks

Stress Testing

Scenario Analysis

Risk adjusted investing



RISK THEORY: New Advances

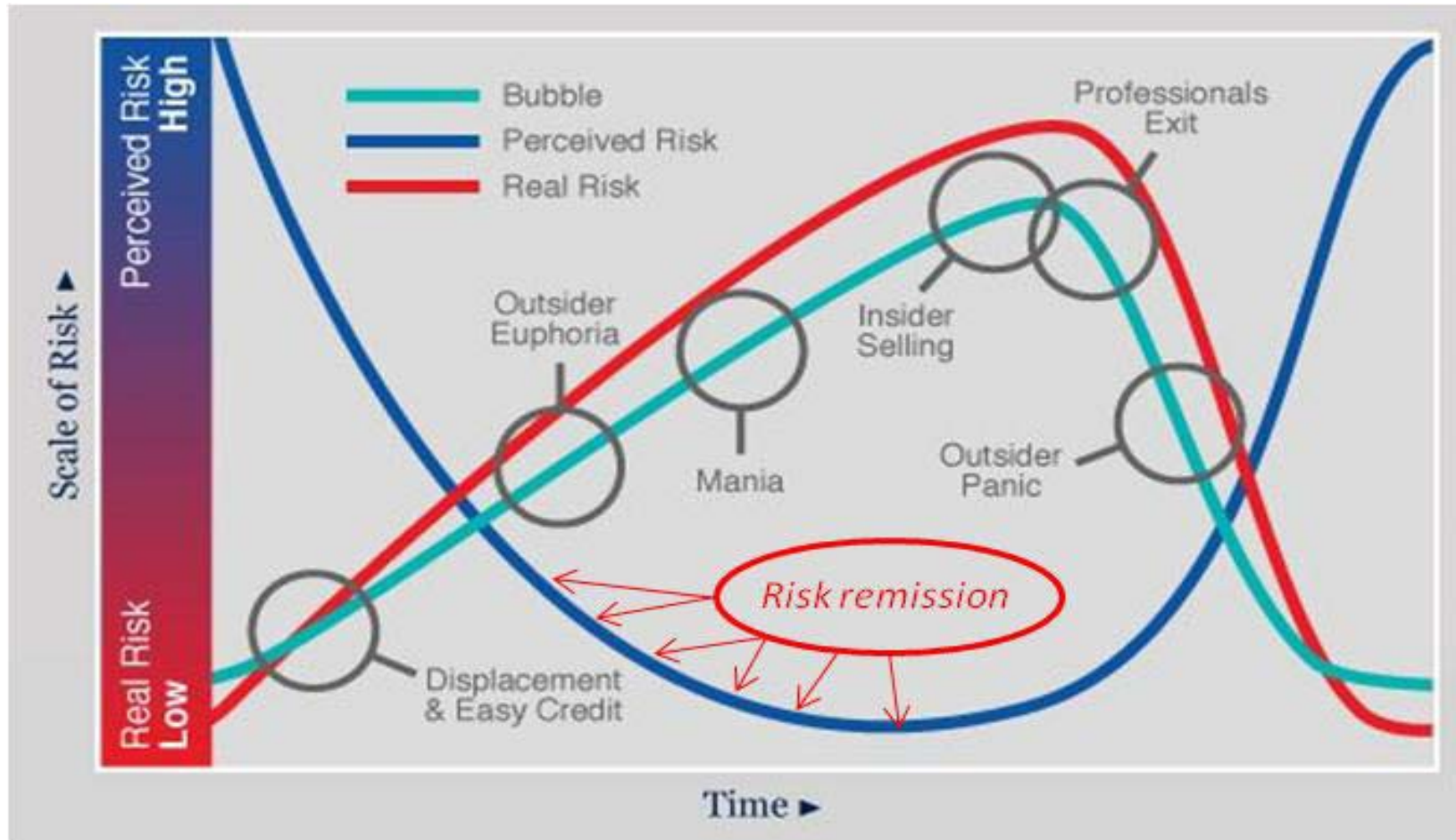


Pattern Recognition

**How cmoe yuor bairn is albe to
udnertsnad tihs snetnece eevn
tghouh olny the frist and lsat
ltetres of ecah wrod are crreoct ?**

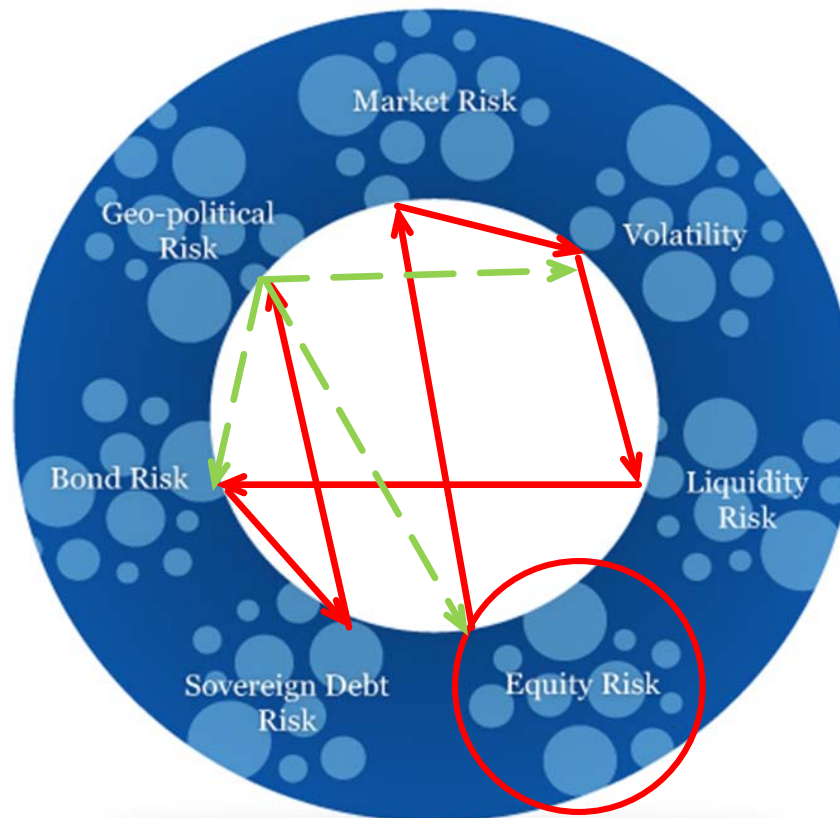
The Classical Risk Problem

Perception of Risk vs. Real Risk



Clustering of Risk

Risk Dynamics



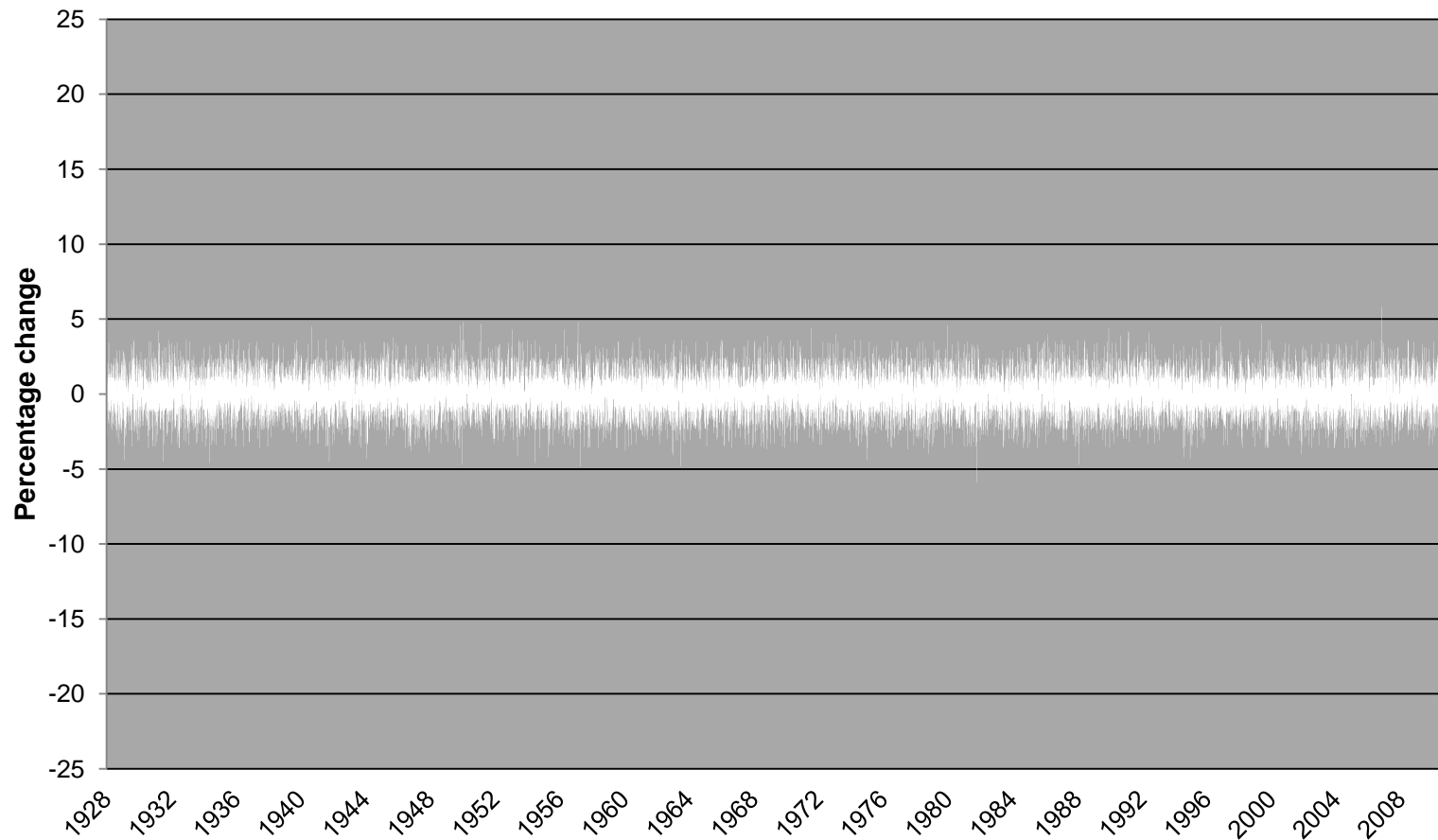


Why do existing methods fail?

# of Standard Deviations from the Mean	Daily Return Range	Normal Distribution		ACTUAL Distribution	
		Predicted	Percentage	Observed	Percentage
+6 σ or more	Above +7.17%	0	0.00%	26	0.13%
+5 σ	5.97% to +7.17%	0	0.00%	16	0.08%
+4 σ	+4.78% to +5.97%	1	0.00%	32	0.15%
+3 σ	+3.58% to + 4.78%	27	0.13%	99	0.48%
+2 σ	+2.39% to + 3.58%	445	2.14%	297	1.43%
+1 σ	+1.19% to +2.39%	2825	13.59%	1502	7.23%
0 σ	-1.19% to +1.19%	14192	68.27%	16907	81.33%
-1 σ	-1.19% to -2.39%	2825	13.59%	1394	6.71%
-2 σ	-2.39 % to -3.58%	445	2.14%	331	1.59%
-3 σ	-3.58% to -4.78%	27	0.13%	101	0.49%
-4 σ	-4.78% to -5.97%	1	0.00%	43	0.21%
-5 σ	- 5.97% to - 7.17%	0	0.00%	18	0.09%
-6 σ or more	Below -7.17%	0	0.00%	22	0.11%
Total	~	20,788	100%	20,788	100



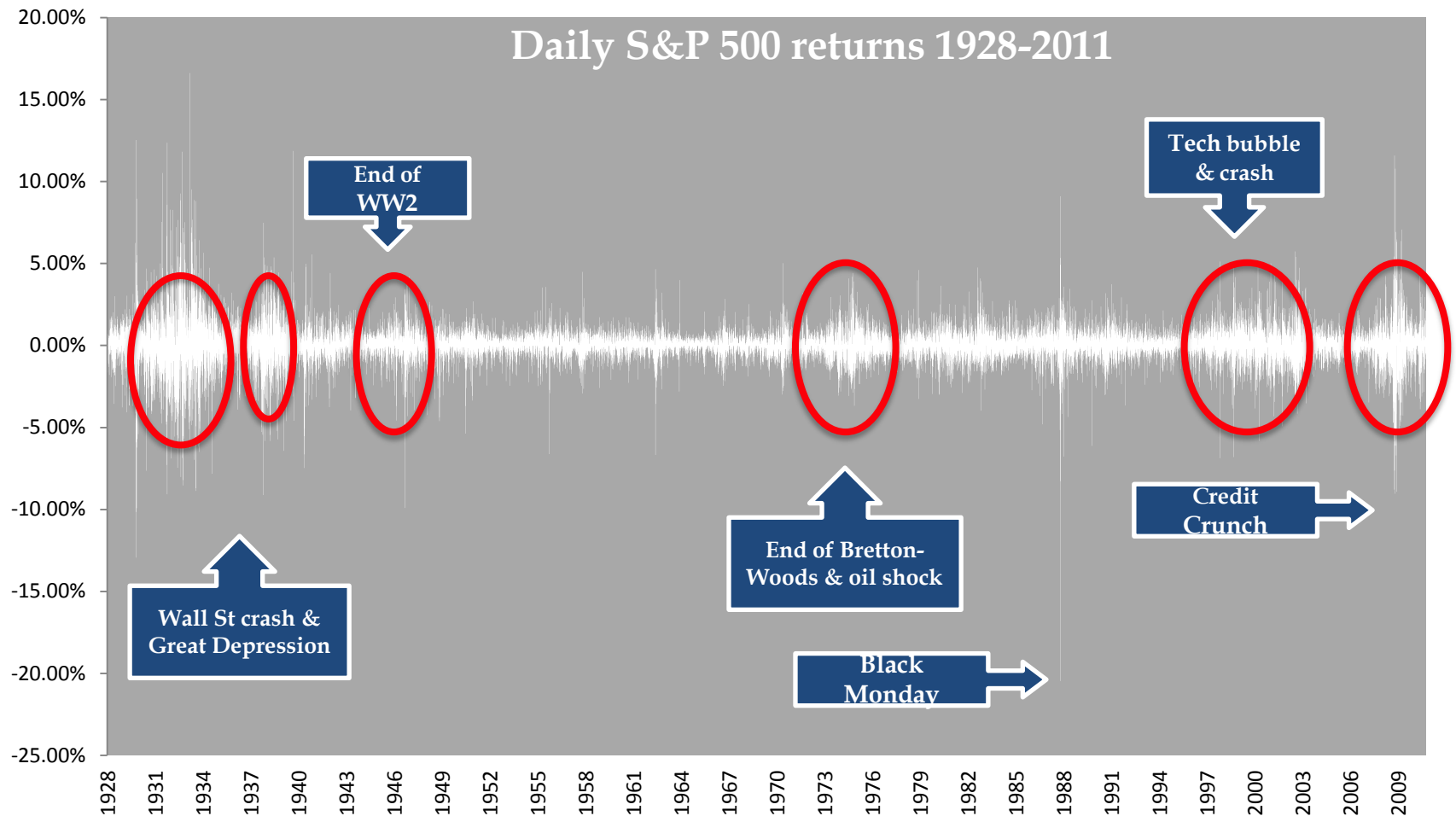
S&P According to VaR



Source: CheckRisk LLP



Risk Clusters



Source: CheckRisk LLP



B.U.M.P Global Risks



What is the scale of the BUMP problem?



**Global M2 Aggregates are up
\$3trillion in 2013**

+4.6% Year on Year

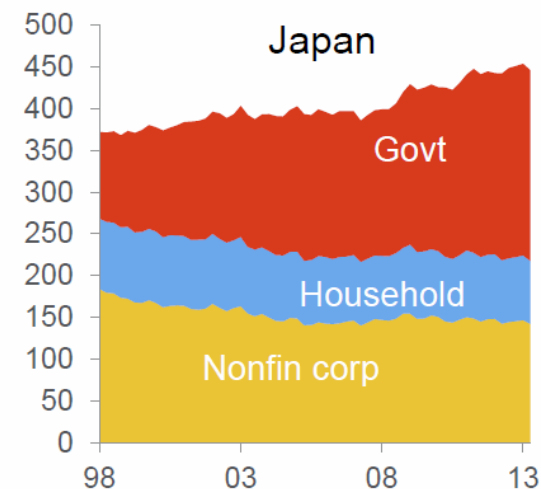
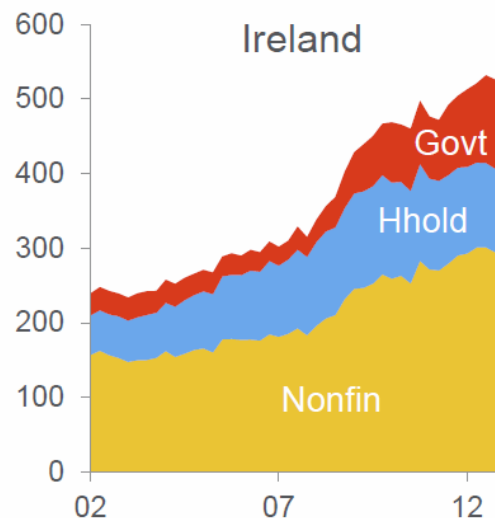
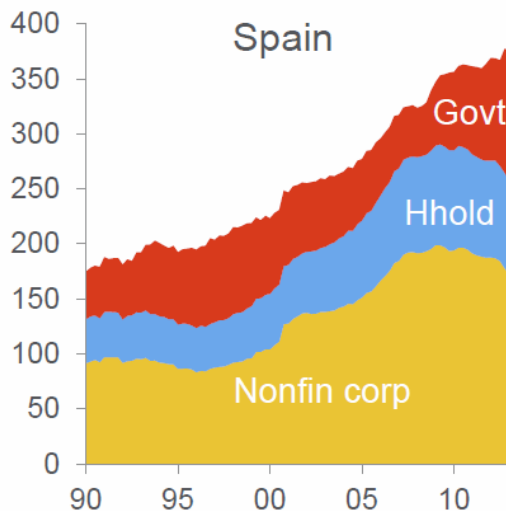
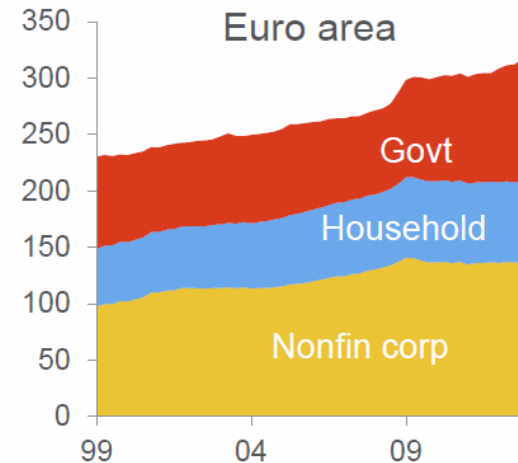
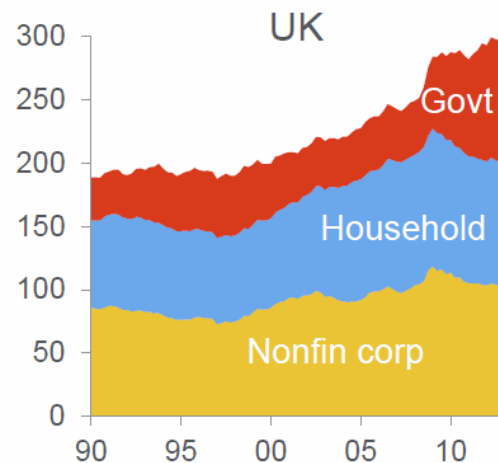
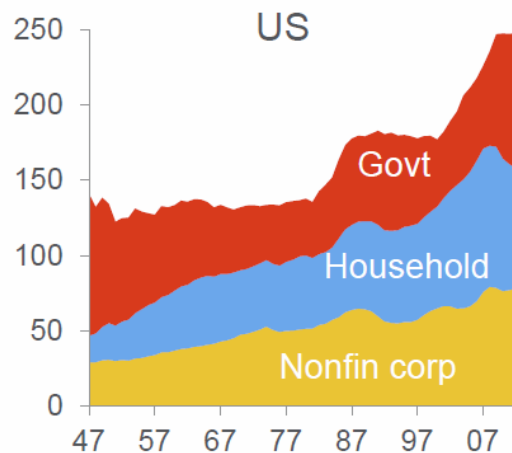
Almost twice the Global inflation rate

Record levels

**Negative or low real interest rates
have driven the search for yield...**



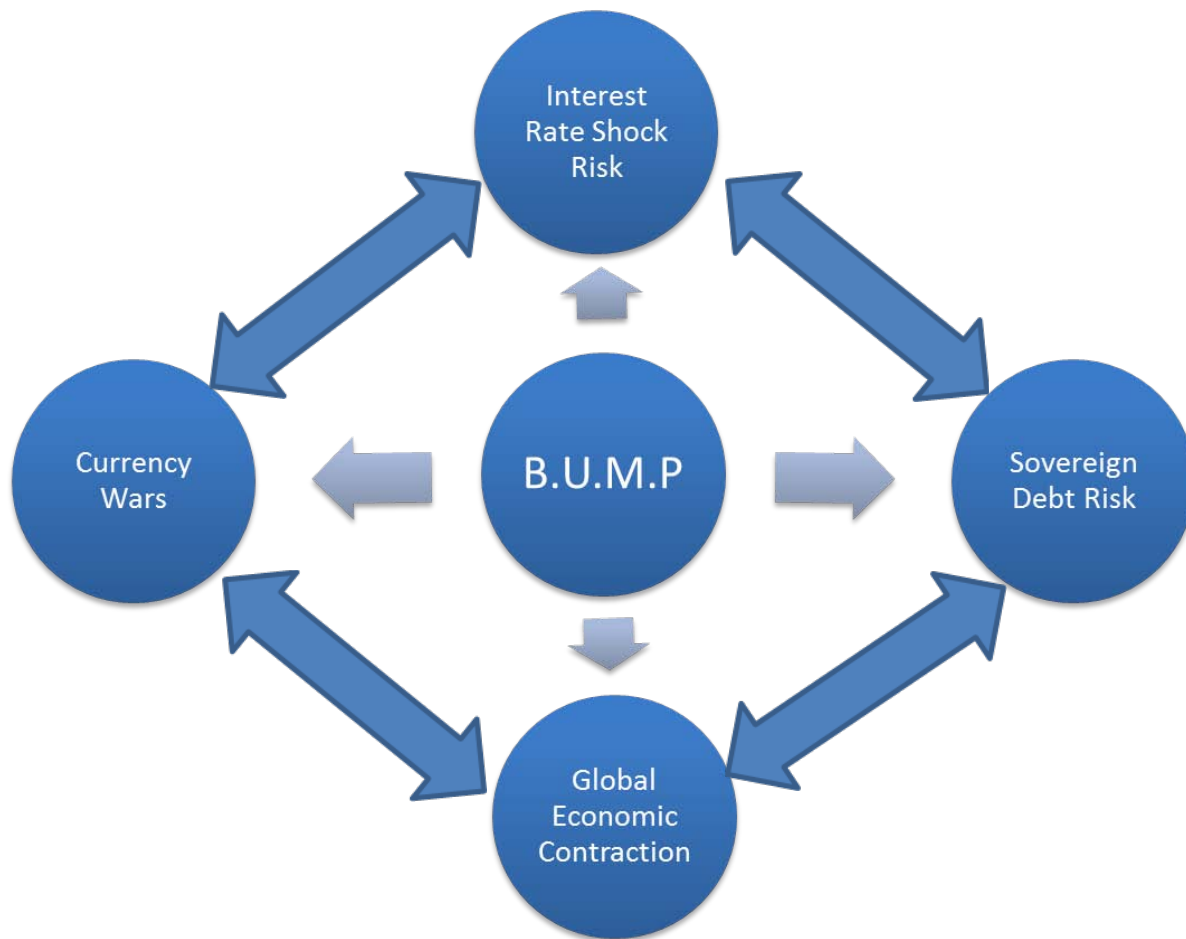
Did Debt go down?



Source: National central banks, ONS, Eurostat, Haver Analytics.



BUMP is a NETWORK RISK



Source: CheckRisk LLP



BUMP is a NETWORK RISK

Key Global Risks

Interest Rate Shock Risk

Liquidity Risk

Currency Wars

Sovereign Debt Risk

Economic Risk

Network Risk



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Velocity of Money



Source: Bloomberg LLP, CheckRisk LLP



CAPE Returns

Starting P/E		Avg. Real	Worst Real	Best Real	Standard
<u>Low</u>	<u>High</u>	<u>10 Yr Return</u>	<u>10 Yr Return</u>	<u>10 Yr Return</u>	<u>Deviation</u>
5.2	9.6	10.3%	4.8%	17.5%	2.5%
9.6	10.8	10.4%	3.8%	17.0%	3.5%
10.8	11.9	10.4%	2.8%	15.1%	3.3%
11.9	13.8	9.1%	1.2%	14.3%	3.8%
13.8	15.7	8.0%	-0.9%	15.1%	4.6%
15.7	17.3	5.6%	-2.3%	15.1%	5.0%
17.3	18.9	5.3%	-3.9%	13.8%	5.1%
18.9	21.1	3.9%	-3.2%	9.9%	3.9%
21.1	25.1	0.9%	-4.4%	8.3%	3.8%
25.1	46.1	0.5%	-6.1%	6.3%	3.6%

Source: CheckRisk LLP



B.U.M.P Irish Risks



Key Irish Risks

Debt to GDP & Servicing Costs

Unfinished Business (Mortgages and Bad debts)

Debt Rollover “crowding out”

No Safety net

Equity Market Valuation Risk

Exposure to Europe (Network Risk)



BUMP & Irish Risk

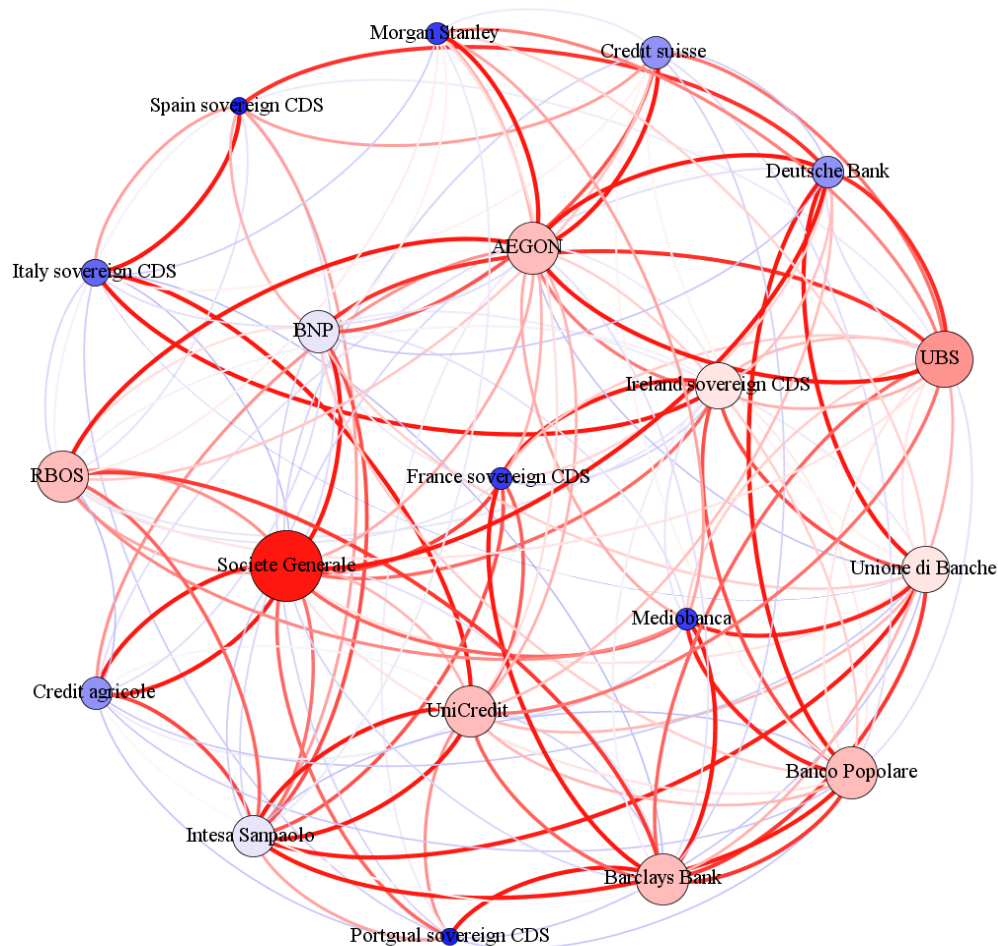
Debt	€200bn of debt rising at €12bn pa 125% Debt to GDP rising Debt Sustainability question 4% GDP growth required
Unfinished Business	144,000 Mortgages in arrears 90 days or more
Debt Rollover	Peak Debt Turnover Year for France Spain Italy and Portugal (Ireland prefunding 21bn NTMA)
Equity Mkt Valuation	ISEQ at 36x PE
Exposure to Europe	Portugal needs to exit bailout program cleanly



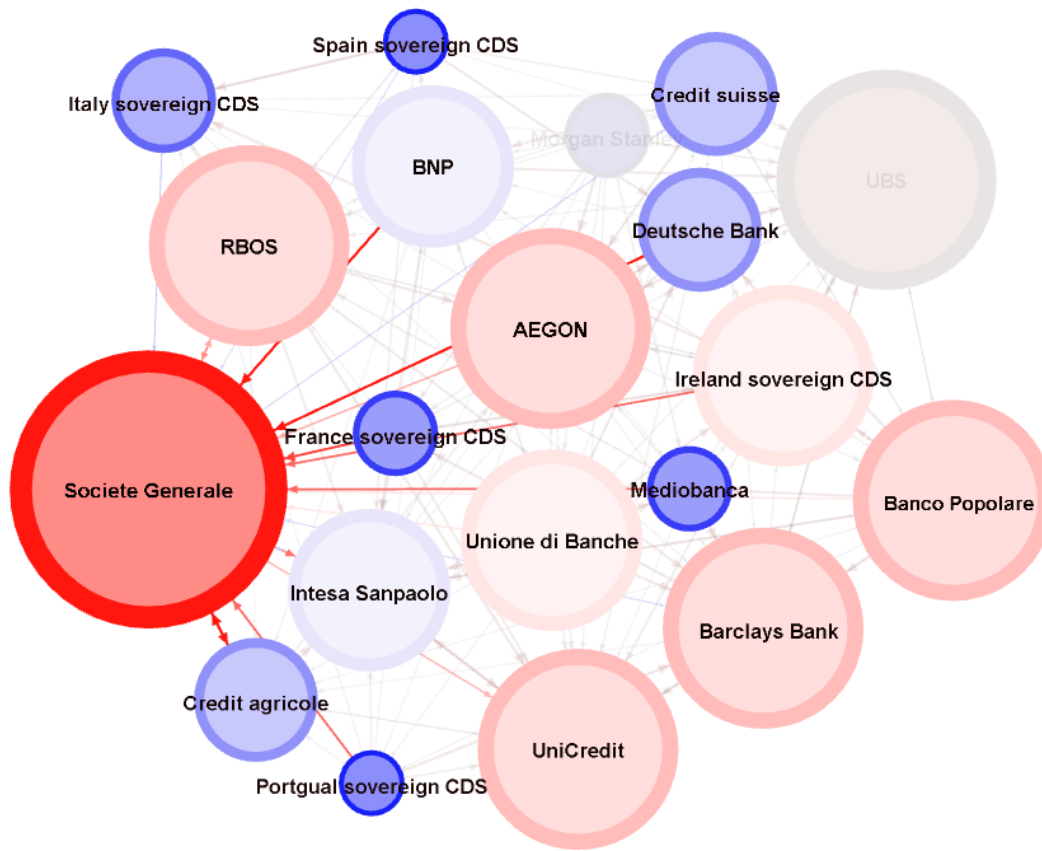
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An example analysis of Network Risk

Network Bank Risk vs. Sovereign Debt



Societe Generale Most Systemically Risky





Breaking Unconventional Monetary Policy is a critical network risk

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Empower yourself to ask the
right questions...

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