Risk Management: Does it Work, Did it ever Work?

The Current Context

Mitch Stone, Fluor Corporation

FLUOR®

Risk

- How do we define Risk
  - Investment Risk: Asset Volatility - Absolute
  - Funding Risk: Asset vs. Liabilities – Relative
  - Others?
- Risk Management Tools
  - Asset Diversification
    - Asset Classes
    - VAR Analysis
  - Risk Seeking Assets vs. Risk Reducing Assets
    - LDI

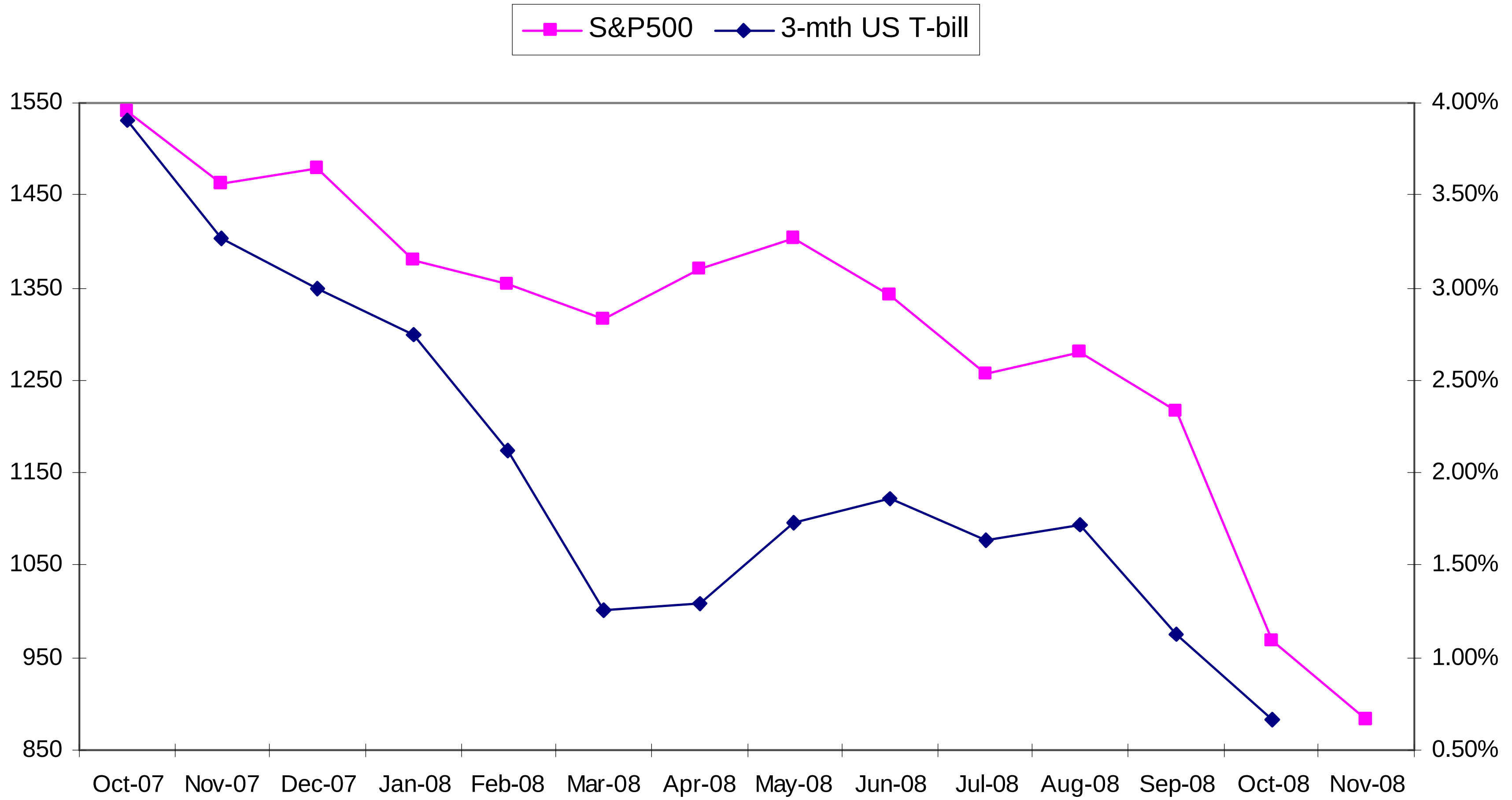
FLUOR®

Timeline

- August-December 2007
  - Sub-prime losses
- March 08
  - Bear Stearns collapses
- September 08
  - Fannie Mae, Freddie Mac seized by Government
  - Lehman Brothers Files Bankruptcy
  - AIG
- October 08
  - Senate passes bailout plan
  - Fortis problems
  - UK announces rescue plan for banks
  - Emergency interest rate cuts (Fed, ECB, Bank of England)
- November 08
  - Presidential Election
  - TARP Funds won’t buy mortgages
  - Recession

FLUOR®

Timeline



FLUOR®

10-year Correlations

10 Year - Correlation Matrix (October 1998 through September 2008) - derived via monthly returns										
	MSCI World Hdg USD	MSCI EAFE GR USD	MSCI EM GR USD	Russell 1000 TR USD	Russell 2000 TR USD	FTSE NAREIT Real Estate 50 TR	LB US Corp Investment Grade TR USD	LB US Long Credit TR USD	LB US Government Long TR USD	Citi Treasury Bill 3 Mon USD
MSCI World Hdg USD	1.00									
MSCI EAFE GR USD	0.89	1.00								
MSCI EM GR USD	0.80	0.83	1.00							
Russell 1000 TR USD	0.97	0.84	0.74	1.00						
Russell 2000 TR USD	0.76	0.72	0.70	0.76	1.00					
FTSE NAREIT Real Estate 50 TR	0.39	0.38	0.32	0.41	0.46	1.00				
LB US Corp Investment Grade TR USD	0.06	0.15	0.14	0.08	0.08	0.15	1.00			
LB US Long Credit TR USD	0.09	0.16	0.16	0.11	0.12	0.18	0.96	1.00		
LB US Government Long TR USD	-0.32	-0.22	-0.24	-0.28	-0.23	-0.07	0.73	0.78	1.00	
Citi Treasury Bill 3 Mon USD	0.06	0.00	-0.01	0.03	-0.03	-0.02	0.06	-0.01	0.00	1.00

FLUOR®

YTD Correlations

YTD - Correlation Matrix (January 2008 through September 2008) - derived via monthly returns										
	MSCI World Hdg USD	MSCI EAFE GR USD	MSCI EM GR USD	Russell 1000 TR USD	Russell 2000 TR USD	FTSE NAREIT Real Estate 50 TR	LB US Corp Investment Grade TR USD	LB US Long Credit TR USD	LB US Government Long TR USD	Citi Treasury Bill 3 Mon USD
MSCI World Hdg USD	1.00									
MSCI EAFE GR USD	0.92	1.00								
MSCI EM GR USD	0.82	0.95	1.00							
Russell 1000 TR USD	0.98	0.88	0.74	1.00						
Russell 2000 TR USD	0.90	0.75	0.60	0.94	1.00					
FTSE NAREIT Real Estate 50 TR	0.62	0.47	0.30	0.72	0.72	1.00				
LB US Corp Investment Grade TR USD	0.56	0.61	0.54	0.56	0.42	0.10	1.00			
LB US Long Credit TR USD	0.64	0.66	0.55	0.64	0.49	0.17	0.97	1.00		
LB US Government Long TR USD	-0.56	-0.60	-0.65	-0.52	-0.52	-0.36	0.12	0.09	1.00	
Citi Treasury Bill 3 Mon USD	-0.28	-0.11	-0.09	-0.21	-0.38	0.01	0.31	0.16	0.51	1.00

FLUOR®

Change in Correlations

Correlation Changes (YTD 2008 Thru September vs. 10-Year) - derived via monthly returns										
	MSCI World Hdg USD	MSCI EAFE GR USD	MSCI EM GR USD	Russell 1000 TR USD	Russell 2000 TR USD	FTSE NAREIT Real Estate 50 TR	LB US Corp Investment Grade TR USD	LB US Long Credit TR USD	LB US Government Long TR USD	Citi Treasury Bill 3 Mon USD
MSCI World Hdg USD	1.00									
MSCI EAFE GR USD	0.03	1.00								
MSCI EM GR USD	0.02	0.12	1.00							
Russell 1000 TR USD	0.01	0.03	-0.01	1.00						
Russell 2000 TR USD	0.14	0.03	-0.10	0.18	1.00					
FTSE NAREIT Real Estate 50 TR	0.23	0.09	-0.02	0.31	0.26	1.00				
LB US Corp Investment Grade TR USD	0.50	0.46	0.40	0.48	0.34	-0.04	1.00			
LB US Long Credit TR USD	0.55	0.50	0.39	0.52	0.37	-0.01	0.01	1.00		
LB US Government Long TR USD	-0.24	-0.37	-0.41	-0.24	-0.29	-0.30	-0.61	0.00	1.00	
Citi Treasury Bill 3 Mon USD	-0.34	-0.11	-0.08	-0.24	-0.35	0.03	0.26	0.17	0.51	1.00

More positively correlated

Less positively correlated

More negatively correlated

FLUOR®

So, Does Risk Management Work?

- Yes, but it is more costly
  - Diversification: Hasn't worked well, but has ensured that you didn't do as badly as the worst-performing asset class
  - Risk Seeking vs. Risk Reducing: Better, but depends on focus and asset classes
- Risk reducing assets/LDI
- Risk seeking assets used in conjunction with Portfolio insurance
  - Analyze Var99+
  - Implementing strategies to address extreme downsides

FLUOR®