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Lecture 14: Options Markets

Economics 252, Spring 2011

Prof. Robert Shiller, Yale University

OPTION/STRIKE		EXP	-CALL- VOL	-CALL- LAST	-PUT- VOL	-PUT- LAST
ACE Ltd	40	Nov	...	...	2500	2.80
AOL TW	20	May	76	2.55	2129	0.85
21.85	22.50	Apr	1493	0.50	619	1.20
21.85	22.50	Jul	963	1.95	14110	2.55
AmOnline	25	Apr	983	0.05	12977	3.30
21.85	25	May	1196	0.45	220	3.60
21.85	25	Jul	1339	1	160	4.20
21.85	25	Oct	1706	1.65	14105	4.30
21.85	27.50	Apr	177	0.05	10097	5.80
21.85	27.50	Oct	1253	1.15	153	6.40
AT&T Cda	22.50	Oct	...	...	2740	1.90
AT&T	15	Jul	593	1.10	5500	1.10
Abbt L	50	Apr	1231	2.95	605	0.30

Black-Scholes Formula

$$C = S\mathrm{N}(d_1) - e^{-rT} E\mathrm{N}(d_2)$$

where

$$d_1 = \frac{\ln\left(\frac{S}{E}\right) + rT + \sigma^2 T/2}{\sigma\sqrt{T}}$$

$$d_2 = \frac{\ln\left(\frac{S}{E}\right) + rT - \sigma^2 T/2}{\sigma\sqrt{T}}$$

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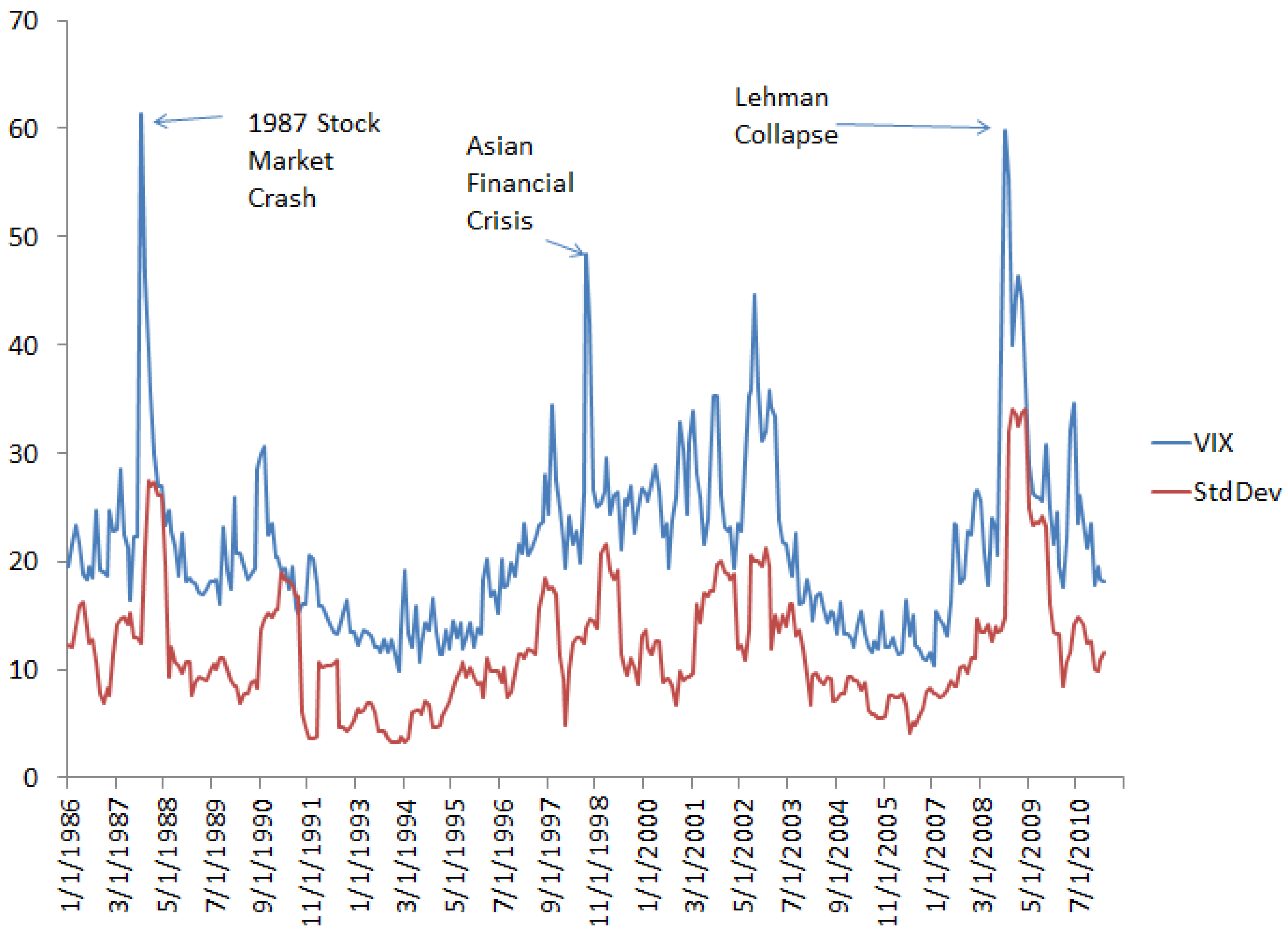
Implied and Actual Volatility Monthly Jan 1986-Mar 2011



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Actual S&P500 Volatility Monthly Jan 1872- March 2011