S&P 500 options (Jan-Feb2014) First 10 observations

Obs	date	tau	К	call_option_price	S	r	put_option_price	date2
1	2014-01-02	16	1735	98.6	1831.98	0.0018	2.175	02JAN2014
2	2014-01-02	16	1740	93.9	1831.98	0.0018	2.175	02JAN2014
3	2014-01-02	16	1745	88.85	1831.98	0.0018	2.525	02JAN2014
4	2014-01-02	16	1750	84.05	1831.98	0.0018	2.6	02JAN2014
5	2014-01-02	16	1755	79.4	1831.98	0.0018	2.825	02JAN2014
6	2014-01-02	16	1760	74.75	1831.98	0.0018	3.25	02JAN2014
7	2014-01-02	16	1765	69.95	1831.98	0.0018	3.55	02JAN2014
8	2014-01-02	16	1770	65.35	1831.98	0.0018	3.95	02JAN2014
9	2014-01-02	16	1775	60.6	1831.98	0.0018	4.35	02JAN2014
10	2014-01-02	16	1780	56.3	1831.98	0.0018	4.8	02JAN2014

date	Т	T1	T2	F1	F2	K01	K02	Contrib_sum1	Contrib_sum2	sigma_sq1	sigma_sq2	vix
02/01/2014	16	0.0438356	0.0986301	1831.7501		1830		0.0003007		0.0136979		
02/01/2014	36	0.0438356	0.0986301		1830.6001		1830		0.0007122		0.0144402	11.97
03/01/2014	15	0.0410959	0.0958904	1831.1001		1830		0.0002456		0.011943		
03/01/2014	35	0.0410959	0.0958904		1830.1		1830		0.0006687		0.0139464	11.70
06/01/2014	12	0.0328767	0.0876712	1827.2001		1825		0.0001797		0.0108865		
06/01/2014	32	0.0328767	0.0876712		1825.9502		1825		0.0005943		0.0135553	11.60
07/01/2014	11	0.030137	0.0849315	1837.1501		1835		0.0001468		0.0096952		
07/01/2014	31	0.030137	0.0849315		1835.9002		1835		0.0005285		0.0124427	11.13
09/01/2014	15	0.0410959	0.0986301	1837.8498		1835		0.0002244		0.0108624		
09/01/2014	36	0.0410959	0.0986301		1835.5501		1835		0.0005891		0.0119452	10.86
10/01/2014	14	0.0383562	0.0958904	1841.1501		1840		0.0001659		0.0086389		
10/01/2014	35	0.0383562	0.0958904		1838.8998		1835		0.0005364		0.0111409	10.42
13/01/2014	11	0.030137	0.0876712	1817.7999		1815		0.0002213		0.0146051		
13/01/2014	32	0.030137	0.0876712		1815.4001		1815		0.0006144		0.0140146	11.85
14/01/2014	17	0.0465753	0.0849315	1838.0498		1835		0.0002732		0.0116727		
14/01/2014	31	0.0465753	0.0849315		1836.0001		1835		0.0005025		0.0118295	10.87
15/01/2014	16	0.0438356	0.1041096	1847.2002		1845		0.0002511		0.0114252		
15/01/2014	38	0.0438356	0.1041096		1844.3499		1840		0.0005914		0.0113073	10.64
16/01/2014	15	0.0410959	0.1013699	1844.95		1840		0.0002369		0.0113526		
16/01/2014	37	0.0410959	0.1013699		1841.4502		1840		0.0005708		0.011256	10.62
17/01/2014	14	0.0383562	0.0986301	1837.2001		1835		0.0002223		0.0115547		
17/01/2014	36	0.0383562	0.0986301		1833.6998		1830		0.0005427		0.0109636	10.51
21/01/2014	17	0.0465753	0.0876712	1840.9001		1840		0.0002681		0.011509		
21/01/2014	32	0.0465753	0.0876712		1839.1999		1835		0.0004794		0.0108771	10.45
22/01/2014	16	0.0438356	0.0849315	1844.2499		1840		0.0002674		0.0120803		
22/01/2014	31	0.0438356	0.0849315		1842.2003		1840		0.0004634		0.0108959	10.46
23/01/2014	15	0.0410959	0.0986301	1826.4501		1825		0.0003229		0.0156989		
23/01/2014	36	0.0410959	0.0986301		1823.5498		1820		0.000654		0.0132223	11.65
24/01/2014	14	0.0383562	0.0958904	1791.0501		1790		0.0005082		0.0264882		
24/01/2014	35	0.0383562	0.0958904		1788.4998		1785		0.0009187		0.0191208	14.12
27/01/2014	11	0.030137	0.0876712	1782.1501		1780		0.0004023		0.0266514		
27/01/2014	32	0.030137	0.0876712		1779.5999		1775		0.0008724		0.0198257	14.16
28/01/2014	17	0.0465753	0.0849315	1789.85		1785		0.0004984		0.0212429		
28/01/2014	31	0.0465753	0.0849315		1788.2497		1785		0.0007607		0.0178749	13.42
29/01/2014	16	0.0438356	0.1013699	1771.9502		1770		0.0005789		0.026384		
29/01/2014	37	0.0438356	0.1013699		1769.5999		1765		0.0010262		0.0201797	14.59
30/01/2014	15	0.0410959	0.0986301	1791.5501		1790		0.0004564		0.0221915		
30/01/2014	36	0.0410959	0.0986301		1789.4999		1785		0.0009261		0.0187139	13.86

18/02/2014 17 0.0465753 0.0876712 1838.0499 . 1835 . 0.0003006 . 0.0128467 18/02/2014 32 0.0465753 0.0876712 . 1837.4503 . 1835 . 0.0003009 . 0.0164607 19/02/2014 16 0.0438356 0.0849315 1825.75 . 1825 . 0.0003609 . 0.0164607 19/02/2014 31 0.0438356 0.0849315 . 1825.1 . 1825 . 0.0003034 . 0.0164607 20/02/2014 35 0.0410959 0.0986301 1839.0499 . 1835 . 0.0003034 . 0.0146492 20/02/2014 36 0.0410959 0.0986301 . 1837.6996 . 1835 . 0.0002783 . 0.0143749 21/02/2014 14 0.0383562 0.0958904 1832.6996 . 1830 . 0.0002783 . 0.0143749 24/02/2014 32 0.030137 0.0876712 1848.3999 . 1845 . 0.0002204 . 0.0145132 . 0.0140917 11.88	date	Т	T1	T2	F1	F2	K01	K02	Contrib_sum1	Contrib_sum2	sigma_sq1	sigma_sq2	vix
030220214 11 0.030137 0.0876712 1738.4899 1.735 0.00006542 0.0001275 0.022575 17.02 17.02 1.736.5802 0.1735 0.00000644 0.0012475 0.0249578 17.02 17.02 0.00000644 0.0012475 0.0249578 17.02 17.02 0.00000644 0.0000965 0.0249578 17.02 0.0000067 0.0000065 0.022301 15.00 0.0000065 0.022301 15.00 0.0000067 0.0000065 0.0000331 15.00 0.0000006 0.00000331 15.00 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.00000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.00000000 0.00000000 0.0000000 0.00000000 0.00000000 0.00000000 0.00000000 0.000000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.000000000 0.0000000000 0.00000000000000 0	31/01/2014	14	0.0383562	0.0958904	1778.3999		1775		0.0005528		0.0287296		
1.00 1.00	31/01/2014	35	0.0383562	0.0958904		1775.9502		1775		0.0010642		0.0221927	15.14
A-1002 A-10 B B B B B B B B B	03/02/2014	11	0.030137	0.0876712	1738.4999		1735		0.0006542		0.0432795		
	03/02/2014	32	0.030137	0.0876712		1736.3502		1735		0.0012475		0.0284527	17.02
05022014 7 04652753 0.1013699 1748.4499 1745 0.0006322 0.02763 15627 15627 15630 1746.4003 1745 0.00012057 0.023781 1563 06022014 8 0.438356 0.988301 1771.4001 1770 0.0000298 0.014659 174.26 0.00002998 0.0140959 1740 0.00002998 0.0140959 0.058904 1749.6909 1790 0.00002924 0.0140959 0.0164099 1.277 10022014 22 0.0419859 0.08712 1798.00 1.0000294 0.0144699 1.277 11022014 31 0.03037 0.0849315 1816.5001 1815 0.0001599 0.0144999 1.277 11022014 35	04/02/2014	18	0.0493151	0.0849315	1751.4501		1750		0.0005944		0.0240928		
65(2)2014 37 0.0465753 0.1013699 1.746.4003 1.745 0.0007474 0.0012057 0.023781 15.63 06(02)2014 16 0.0438356 0.0986301 1.771.4001 1.770 1.5 0.000474 0.0009931 0.0200786 1.4.26 07(02)2014 15 0.0400999 0.0598994 1.769.2499 1.750 0.00002998 0.0104619 0.0200786 14.26 07(02)2014 15 0.0410999 0.0589994 1.792.1004 1.790 0.00002254 0.0104619 0.0163003 12.68 10(02)2014 12 0.0328767 0.086712 1.796.701 1.799 0.00002254 0.0007229 0.0163003 12.68 11(02)2014 13 0.030137 0.0849315 1816.5901 1.815 0.0000258 0.0000729 0.0164189 12.01 11(02)2014 13 0.030137 0.0849315 1816.5901 1.815 0.0000292 0.0000746 0.0144893 12.01 12(2)2014 13 0.031358 1.	04/02/2014	31	0.0493151	0.0849315		1749.7		1745		0.0009965		0.023381	15.30
66(02)2014 76 0438356 0.986301 1771.4001 1770 0.000474 0.0216105 1.4.26 06(02)2014 35 0.438356 0.986301 1769.2499 1790 0.0002988 0.0144619 1.4.26 07(02)2014 35 0.410959 0.958904 1792.1004 1790 0.0007822 0.0163003 12.68 10(02)2014 32 0.0328767 0.876712 1796.7001 1795 0.0007229 0.0164059 12.77 11(02)2014 31 0.030137 0.849315 1816.7501 1810 0.0007229 0.0146085 12.77 11(02)2014 31 0.033355 0.141095 1816.5001 1815 0.0001829 0.014298 11.88 13(02)2014 35 0.0410959 0.1013695 1827.30 <td>05/02/2014</td> <td>17</td> <td>0.0465753</td> <td>0.1013699</td> <td>1748.4499</td> <td></td> <td>1745</td> <td></td> <td>0.0006322</td> <td></td> <td>0.027063</td> <td></td> <td></td>	05/02/2014	17	0.0465753	0.1013699	1748.4499		1745		0.0006322		0.027063		
660/2/2014 36 0.0438356 0.0986301 1.769,2499 1.765 0.0002998 0.0104619 0.0200786 1.4.26 07/02/2014 35 0.0410959 0.0958904 1.792.1004 1.790 0.0002998 0.0103003 12.68 07/02/2014 32 0.0328767 0.0876712 1796.7001 1.795 0.0002254 0.01030856 0.0163003 12.68 10/02/2014 31 0.030377 0.0876712 1794.99 1.790 0.0001589 0.0105126 0.0164059 12.77 11/02/2014 31 0.030337 0.0849315 1816.7501 1815.59 0.0001589 0.0001682 0.0116495 12.01 11/02/2014 31 0.033375 0.0849315 1816.43999 1.818 0.0000128 0.0105126 0.0144898 12.01 11/02/2014 31 0.0438356 0.1041096 1815.5999 1.8180 0.0002024 0.0007476 0.0144893 1.21 11/02/2014 32 0.0419599 0.1013699 1827.500	05/02/2014	37	0.0465753	0.1013699		1746.4003		1745		0.0012057		0.023781	15.63
07/02/2014 15 0.410959 0.0958904 1794.0999 1790 0.0002998 0.0144619 1.2 07/02/2014 35 0.410959 0.0959904 1792.1004 1.790 0.0007225 0.0136003 12.68 10/02/2014 32 0.0328767 0.0876712 1796.7001 1790 0.0007229 0.0164059 12.77 11/02/2014 31 0.030137 0.089315 1816.7501 1816 0.0001589 0.015126 1.201 12/02/2014 31 0.030337 0.089315 1816.5501 1815 0.0001589 0.015126 1.201 12/02/2014 31 0.030335 0.0410959 1827.5001 1815 0.000224 0.013159 1.201 12/02/2014 32 0.0410959 0.1033699	06/02/2014	16	0.0438356	0.0986301	1771.4001		1770		0.000474		0.0216105		
	06/02/2014	36	0.0438356	0.0986301		1769.2499		1765		0.0009931		0.0200786	14.26
1	07/02/2014	15	0.0410959	0.0958904	1794.0999		1790		0.0002998		0.0144619		
1794 1794 1795 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1794 1815 1816	07/02/2014	35	0.0410959	0.0958904		1792.1004		1790		0.0007822		0.0163003	12.68
11 11 12 13 13 13 13 13	10/02/2014	12	0.0328767	0.0876712	1796.7001		1795		0.0002254		0.0136856		
11/02/2014	10/02/2014	32	0.0328767	0.0876712		1794.9		1790		0.0007229		0.0164059	12.77
12/02/2014 16 0.0438356 0.1041096 1816.5001 0.11815 0.0000292 0.0133151 0.0133151 1.02 1.02/2014 38 0.0438356 0.1041096 0.01418599 0.1810 0.00002412 0.00007476 0.0116999 0.0133151 0.014298 11.88 13/02/2014 15 0.0410959 0.1013699 1827.3001 0.1825 0.00002412 0.00006952 0.0116999 0.0137157 11.57 14/02/2014 14 0.0383562 0.0986301 1837.0001 0.1835 0.0000248 0.0006494 0.0106466 0.1140/2/2014 17 0.0465753 0.0876712 1838.0499 0.1835 0.00003006 0.0006494 0.0128467 0.0130949 11.31 18/02/2014 18 0.0483356 0.08876712 1838.0499 0.1835 0.00003006 0.0006007 0.0128467 0.0136841 11.67 19/02/2014 18 0.0483356 0.0849315 1825.75 0.1825 0.1825 0.00003009 0.0006007 0.0164607 0.0136841 11.67 0.046573 0.0849315 1825.75 0.1825 0.00003009 0.0006007 0.0164607 0.016468 0.0438356 0.0849315 1825.75 1825.1 0.1825 0.00003009 0.0006815 0.0164607 0.016468 0.02000000000000000000000000000000000	11/02/2014	11	0.030137	0.0849315	1816.7501		1815		0.0001589		0.0105126		
12/02/2014 38 0.0438356 0.1041096 0. 1814.5999 0. 1810 0.0007476 0. 0.0116999 0. 1.88 13/02/2014 15 0.0410959 0.1013699 1827.3001 0. 1825.5501 0. 1825 0. 0.0002412 0. 0.0016992 0. 0.0137157 11.57 14/02/2014 14 0.0383562 0.0986301 1837.0001 0. 1835 0. 0.0002048 0. 0.0006952 0. 0.0137157 11.57 14/02/2014 15 0.0465753 0.0986301 1837.0001 0. 1835 0. 0.0002048 0. 0.0006494 0. 0.0130949 11.31 18/02/2014 17 0.0465753 0.0876712 1838.0499 0. 1835 0. 0.0003006 0. 0.006494 0. 0.0130949 11.67 19/02/2014 16 0.0438356 0.0849315 1825.75 0. 1835 0. 0.0003006 0. 0.006607 0. 0.0136841 11.67 19/02/2014 15 0.0410959 0.0986301 1839.0499 0. 1835 0. 0.0003009 0. 0.0164607 0. 0.106460 0. 0.0002001 19/02/2014 15 0.0410959 0.0986301 1839.0499 0. 1835 0. 0.000304 0. 0.0006815 0. 0.016489 0. 0.0002001 0. 0.0002001 0. 0.0006001 0. 0.	11/02/2014	31	0.030137	0.0849315		1814.3999		1810		0.0006182		0.0144885	12.01
13/02/2014 15 0.0410959 0.1013699 1827.3001 0.82 0.0002412 0.0006952 0.0116999 1.157 13/02/2014 37 0.0410959 0.1013699 1825.5501 1.825 0.0002048 0.0006952 0.0137157 11.57 14/02/2014 40 0.0333562 0.0986301 1837.0001 1834.9 1830 0.0002048 0.0106466 0.0130949 11.31 18/02/2014 50 0.0333562 0.0986301 1834.99 1835 0.0003006 0.0006007 0.0130949 11.67 18/02/2014 71 0.0465753 0.0876712 1837.4503 1835 0.0003006 0.0164607 0.0136841 11.67 18/02/2014 71 0.0465753 0.0876712 1825.75 1825 0.00030609 0.0164607 0.0136841 11.67 18/02/2014 71 0.0438356 0.0849315 1825.75 1825 0.00030609 0.0164607 0.016048 12.67 20/02/2014 71 0.0410959 0.0986301<	12/02/2014	16	0.0438356	0.1041096	1816.5001		1815		0.0002922		0.0133151		
13/02/2014 37 0.0410959 0.1013699 1825.5501 1825 0.00006952 0.0137157 11.57 14/02/2014 14 0.0383562 0.0986301 1837.0001 1835 0.0002048 0.0106466 0.0130949 11.31 14/02/2014 36 0.0383562 0.0986301 1834.99 1835 0.0003006 0.0006094 0.0130949 11.31 18/02/2014 32 0.0465753 0.0876712 1838.0499 1835 0.0003006 0.0128467 0.0136841 11.67 19/02/2014 16 0.0438356 0.0849315 1825.75 1825 0.0003609 0.0164607 0.016048 12.67 20/02/2014 31 0.0438356 0.0849315 1825.1 1825 0.0003034 0.0146492 0.016048 12.67 20/02/2014 35 0.0410959 0.0986301 1837.6996 1835 0.0003034 0.0146492 0.0143954 12.01 21/02/2014 36 0.0410959 0.0986301 1837.6996 1830	12/02/2014	38	0.0438356	0.1041096		1814.5999		1810		0.0007476		0.0142998	11.88
14/02/2014 14 0.0383562 0.0986301 1837.0001 1835 0.00002048 0.0106466 0.0130949 11.31 14/02/2014 36 0.0383562 0.0986301 1834.9 1830 0.0003006 0.0128467 0.0130949 11.31 18/02/2014 17 0.0465753 0.0876712 1838.0499 1835 0.0003006 0.0006007 0.0136841 11.67 19/02/2014 16 0.0465753 0.0876712 1837.4503 1835 0.0003006 0.0164607 0.0136841 11.67 19/02/2014 16 0.0438356 0.0849315 1825.75 1825 0.0003069 0.0164607 0.016048 12.67 20/02/2014 31 0.0410959 0.0986301 1835.0 1835 0.0003034 0.0146492 0.016048 12.67 20/02/2014 36 0.0410959 0.0986301 1837.6996 1835 0.0002783 0.0143749 0.0143954 12.01 21/02/2014 35 0.0383562 0.0986904 1832.6996 <td>13/02/2014</td> <td>15</td> <td>0.0410959</td> <td>0.1013699</td> <td>1827.3001</td> <td></td> <td>1825</td> <td></td> <td>0.0002412</td> <td></td> <td>0.0116999</td> <td></td> <td></td>	13/02/2014	15	0.0410959	0.1013699	1827.3001		1825		0.0002412		0.0116999		
14/02/2014 36 0.0383562 0.0986301 1834.9 1830 0.0006494 0.0130949 11.31 18/02/2014 17 0.0465753 0.0876712 1838.0499 1835 0.0003006 0.0128467 0.0136841 11.67 18/02/2014 32 0.0465753 0.0876712 1837.4503 1835 0.0003609 0.0164607 0.0136841 11.67 19/02/2014 16 0.0438356 0.0849315 1825.75 1825 0.0003609 0.0164607 0.016048 12.67 20/02/2014 15 0.0410959 0.0986301 1839.0499 1835 0.0003034 0.0146492 0.0146492 0.0140949 1.01 21/02/2014 36 0.0410959 0.0986301 1837.6996 1835 0.0002783 0.0146492 0.0143954 12.01 21/02/2014 35 0.0383562 0.0958904 1832.6996 1830 0.0002783 0.0143749 0.0140917 11.88 24/02/2014 31 0.030137 0.0876712 1848.3999 </td <td>13/02/2014</td> <td>37</td> <td>0.0410959</td> <td>0.1013699</td> <td></td> <td>1825.5501</td> <td></td> <td>1825</td> <td></td> <td>0.0006952</td> <td></td> <td>0.0137157</td> <td>11.57</td>	13/02/2014	37	0.0410959	0.1013699		1825.5501		1825		0.0006952		0.0137157	11.57
18/02/2014 17 0.0465753 0.0876712 1838.0499 1835 0.0003006 0.0128467 0.0136841 11.67 18/02/2014 32 0.0465753 0.0876712 1837.4503 1835 0.0003609 0.0164607 0.0136841 11.67 19/02/2014 16 0.0438356 0.0849315 1825.75 1825 0.0003609 0.0164607 0.016048 12.67 20/02/2014 31 0.0438356 0.0849315 1825.1 1825 0.0003609 0.0146607 0.016048 12.67 20/02/2014 35 0.0410959 0.0986301 1837.6996 1835 0.0003034 0.0146492 0.0143954 12.01 21/02/2014 36 0.0410959 0.0986301 1837.6996 1835 0.0002783 0.0143749 0.0143954 12.01 21/02/2014 35 0.0383562 0.0958904 1832.6996 1830 0.0002783 0.0143749 0.0140917 11.88 24/02/2014 31 0.030137 0.0876712 1848.3999 </td <td>14/02/2014</td> <td>14</td> <td>0.0383562</td> <td>0.0986301</td> <td>1837.0001</td> <td></td> <td>1835</td> <td></td> <td>0.0002048</td> <td></td> <td>0.0106466</td> <td></td> <td></td>	14/02/2014	14	0.0383562	0.0986301	1837.0001		1835		0.0002048		0.0106466		
18/02/2014 32 0.0465753 0.0876712 1837.4503 1835 0.0003609 0.0136841 11.67 19/02/2014 16 0.0438356 0.0849315 1825.75 1825 0.0003609 0.0164607 0.0164607 1.01 19/02/2014 31 0.0438356 0.0849315 1825.1 1825 0.0003609 0.0164607 0.016048 12.67 20/02/2014 15 0.0410959 0.0986301 1839.0499 1835 0.0003034 0.0146492 0.0143954 12.01 20/02/2014 36 0.0410959 0.0986301 1837.6996 1835 0.0002783 0.0143749 0.0143954 12.01 21/02/2014 35 0.0383562 0.0958904 1832.6996 1830 0.0002783 0.0143749 0.0140917 11.88 24/02/2014 31 0.030137 0.0876712 1848.3999 1845 0.0002204 0.0145132 0.0138694 11.79 25/02/2014 32 0.030137 0.0876712 1847.1003 1845	14/02/2014	36	0.0383562	0.0986301		1834.9		1830		0.0006494		0.0130949	11.31
19/02/2014 16 0.0438356 0.0849315 1825.75 . 1825 . 0.0003609 . 0.0164607 . . 19/02/2014 31 0.0438356 0.0849315 . 1825.1 . 1825 . 0.0006815 . 0.016048 12.67 20/02/2014 15 0.0410959 0.0986301 1839.0499 . 1835 . 0.0003034 . 0.0146492 . . 20/02/2014 36 0.0410959 0.0986301 . 1837.6996 . 1835 . 0.000711 . 0.0143954 12.01 21/02/2014 14 0.0383562 0.0958904 . 1830 . 0.0002783 . 0.0143749 . <t< td=""><td>18/02/2014</td><td>17</td><td>0.0465753</td><td>0.0876712</td><td>1838.0499</td><td></td><td>1835</td><td></td><td>0.0003006</td><td></td><td>0.0128467</td><td></td><td></td></t<>	18/02/2014	17	0.0465753	0.0876712	1838.0499		1835		0.0003006		0.0128467		
19/02/2014 31 0.0438356 0.0849315 . 1825.1 . 1825 . 0.0006815 . 0.016048 12.67 20/02/2014 15 0.0410959 0.0986301 1839.0499 . 1835 . 0.0003034 . 0.0146492 . . 20/02/2014 36 0.0410959 0.0986301 . 1837.6996 . 1835 . 0.000711 . 0.0143954 12.01 21/02/2014 14 0.0383562 0.0958904 1834.15 . 1830 . 0.0002783 . 0.0143749 . . . 21/02/2014 . 0.0383562 0.0958904 . 1832.6996 . 1830 . 0.0006767 . 0.0140917 11.88 24/02/2014 11 0.030137 0.0876712 1848.3999 . 1845 . 0.0002204 . 0.0145132 11.79 25/02/2014 17 <	18/02/2014	32	0.0465753	0.0876712		1837.4503		1835		0.0006007		0.0136841	11.67
20/02/2014 15 0.0410959 0.0986301 1839.0499 . 1835 . 0.0003034 . 0.0146492	19/02/2014	16	0.0438356	0.0849315	1825.75		1825		0.0003609		0.0164607		
20/02/2014 36 0.0410959 0.0986301 . 1837.6996 . 1835 . 0.000711 . 0.0143954 12.01 21/02/2014 14 0.0383562 0.0958904 1834.15 . 1830 . 0.0002783 . 0.0143749 . . 21/02/2014 35 0.0383562 0.0958904 . 1832.6996 . 1830 . 0.0006767 . 0.0140917 11.88 24/02/2014 11 0.030137 0.0876712 1848.3999 . 1845 . 0.0002204 . 0.0145132 . . 24/02/2014 32 0.030137 0.0876712 . 1847.1003 . 1845 . 0.0006086 . 0.0138694 11.79 25/02/2014 17 0.0465753 0.0849315 1841.8002 . 1840 . 0.0003201 . 0.0136756 . . . 26/02/2014 16 0.0438356 0.090411 1	19/02/2014	31	0.0438356	0.0849315		1825.1		1825		0.0006815		0.016048	12.67
21/02/2014 14 0.0383562 0.0958904 1834.15 . 1830 . 0.0002783 . 0.0143749	20/02/2014	15	0.0410959	0.0986301	1839.0499		1835		0.0003034		0.0146492		
21/02/2014 35 0.0383562 0.0958904 . 1832.6996 . 1830 . 0.0006767 . 0.0140917 11.88 24/02/2014 11 0.030137 0.0876712 1848.3999 . 1845 . 0.0002204 . 0.0145132 24/02/2014 32 0.030137 0.0876712 . 1847.1003 . 1845 . 0.0006086 . 0.0138694 11.79 25/02/2014 17 0.0465753 0.0849315 1842.2501 . 1840 . 0.0003201 . 0.0137144 25/02/2014 31 0.0465753 0.0849315 . 1841.8002 . 1840 . 0.0003201 . 0.0136756 . 0.01449 12.02 26/02/2014 16 0.0438356 0.090411 1843.6499 . 1840 . 0.0003017 . 0.0136756 26/02/2014 33 0.0438356 0.090411 . 1842.6496 . 1840 . 0.0002513 . 0.0122108 . 0.0140001 11.82 27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108 . 0.0122108	20/02/2014	36	0.0410959	0.0986301		1837.6996		1835		0.000711		0.0143954	12.01
24/02/2014 11 0.030137 0.0876712 1848.3999 . 1845 . 0.0002204 . 0.0145132 24/02/2014 32 0.030137 0.0876712 . 1847.1003 . 1845 . 0.0006086 . 0.0138694 11.79 25/02/2014 17 0.0465753 0.0849315 1842.2501 . 1840 . 0.0003201 . 0.0137144 25/02/2014 31 0.0465753 0.0849315 . 1841.8002 . 1840 . 0.0003201 . 0.0006158 . 0.01449 12.02 26/02/2014 16 0.0438356 0.090411 1843.6499 . 1840 . 0.0003017 . 0.0136756 26/02/2014 33 0.0438356 0.090411 . 1842.6496 . 1840 . 0.0003017 . 0.0006339 . 0.0140001 11.82 27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108	21/02/2014	14	0.0383562	0.0958904	1834.15		1830		0.0002783		0.0143749		
24/02/2014 32 0.030137 0.0876712 . 1847.1003 . 1845 . 0.0006086 . 0.0138694 11.79 25/02/2014 17 0.0465753 0.0849315 1842.2501 . 1840 . 0.0003201 . 0.0137144 . . 25/02/2014 31 0.0465753 0.0849315 . 1841.8002 . 1840 . 0.0006158 . 0.01449 12.02 26/02/2014 16 0.0438356 0.090411 1843.6499 . 1840 . 0.0003017 . 0.0136756 . . 26/02/2014 33 0.0438356 0.090411 . 1842.6496 . 1840 . 0.0006339 . 0.0140001 11.82 27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108 . .	21/02/2014	35	0.0383562	0.0958904		1832.6996		1830		0.0006767		0.0140917	11.88
25/02/2014 17 0.0465753 0.0849315 1842.2501 . 1840 . 0.0003201 . 0.0137144 . . 25/02/2014 31 0.0465753 0.0849315 . 1841.8002 . 1840 . 0.0006158 . 0.01449 12.02 26/02/2014 16 0.0438356 0.090411 1843.6499 . 1840 . 0.0003017 . 0.0136756 . . 26/02/2014 33 0.0438356 0.090411 . 1842.6496 . 1840 . 0.0006339 . 0.0140001 11.82 27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108 . .	24/02/2014	11	0.030137	0.0876712	1848.3999		1845		0.0002204		0.0145132		
25/02/2014 31 0.0465753 0.0849315 . 1841.8002 . 1840 . 0.0006158 . 0.01449 12.02 26/02/2014 16 0.0438356 0.090411 1843.6499 . 1840 . 0.0003017 . 0.0136756 . . 26/02/2014 33 0.0438356 0.090411 . 1842.6496 . 1840 . 0.0006339 . 0.0140001 11.82 27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108 . .	24/02/2014	32	0.030137	0.0876712		1847.1003		1845		0.0006086		0.0138694	11.79
26/02/2014 16 0.0438356 0.090411 1843.6499 . 1840 . 0.0003017 . 0.0136756 . . 26/02/2014 33 0.0438356 0.090411 . 1842.6496 . 1840 . 0.0006339 . 0.0140001 11.82 27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108 . .	25/02/2014	17	0.0465753	0.0849315	1842.2501		1840		0.0003201		0.0137144		
26/02/2014 33 0.0438356 0.090411 . 1842.6496 . 1840 . 0.0006339 . 0.0140001 11.82 27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108 . .	25/02/2014	31	0.0465753	0.0849315		1841.8002		1840		0.0006158		0.01449	12.02
27/02/2014 15 0.0410959 0.0876712 1851.6501 . 1850 . 0.0002513 . 0.0122108	26/02/2014	16	0.0438356	0.090411	1843.6499		1840		0.0003017		0.0136756		
	26/02/2014	33	0.0438356	0.090411		1842.6496		1840		0.0006339		0.0140001	11.82
27/02/2014 32 0.0410959 0.0876712 . 1850.6001 . 1850 . 0.0005801 . 0.0132332 11.48	27/02/2014	15	0.0410959	0.0876712	1851.6501		1850		0.0002513		0.0122108		
	27/02/2014	32	0.0410959	0.0876712		1850.6001		1850		0.0005801		0.0132332	11.48

date	Т	T1	T2	F1	F2	K01	K02	Contrib_sum1	Contrib_sum2	sigma_sq1	sigma_sq2	vix
28/02/2014	14	0.0383562	0.0849315	1857.6499		1855		0.0002667		0.0138532		
28/02/2014	31	0.0383562	0.0849315		1857.1003		1855		0.0005664		0.0133231	11.55

atm_date	atm_vol tau	r	К	s	с	atm_sigma
02/01/2014	16	0.0018	1830	1831.98	17.8	0.1093095
02/01/2014	36	0.0022	1830	1831.98	27.85	0.1161662
03/01/2014	15	0.0018	1830	1831.37	15.6	0.1002058
03/01/2014	35	0.0022	1830	1831.37	26.75	0.1143741
06/01/2014	12	0.0016	1825	1826.77	14.3	0.1010529
06/01/2014	32	0.0022	1825	1826.77	25.4	0.1127951
07/01/2014	11	0.0015	1840	1837.88	10.35	0.0890376
07/01/2014	31	0.0021	1840	1837.88	21.1	0.1028385
09/01/2014	15	0.0018	1840	1838.13	13.35	0.095479
09/01/2014	36	0.0017	1840	1838.13	22.45	0.1007975
10/01/2014	14	0.0017	1840	1842.37	13.5	0.0849131
10/01/2014	35	0.0017	1840	1842.37	22.8	0.0942653
13/01/2014	11	0.0016	1820	1819.2	13.4	0.1091401
13/01/2014	32	0.0016	1820	1819.2	22.75	0.1071185
14/01/2014	17	0.0018	1840	1838.88	15.2	0.0990028
14/01/2014	31	0.0016	1840	1838.88	20.5	0.0978875
15/01/2014	16	0.0018	1850	1848.38	14	0.0953416
15/01/2014	38	0.0017	1850	1848.38	21.3	0.0921847
16/01/2014	15	0.0018	1845	1845.89	14.85	0.0960255
16/01/2014	37	0.0017	1845	1845.89	22.25	0.0923333
17/01/2014	14	0.0017	1840	1838.7	12.65	0.092075
17/01/2014	36	0.0017	1840	1838.7	20.3	0.0902335
21/01/2014	17	0.0018	1845	1843.8	14.15	0.0923668
21/01/2014	32	0.0016	1845	1843.8	18.75	0.0882131
22/01/2014	16	0.0018	1845	1844.86	15.45	0.1002471
22/01/2014	31	0.0016	1845	1844.86	20.15	0.093691
23/01/2014	15	0.0018	1830	1828.46	15.45	0.1091241
23/01/2014	36	0.0016	1830	1828.46	22.7	0.1017661
24/01/2014	14	0.0017	1790	1790.29	23	0.1629959
24/01/2014	35	0.0017	1790	1790.29	30.7	0.1375224
27/01/2014	11	0.0016	1780	1781.56	20.65	0.1606848
27/01/2014	32	0.0017	1780	1781.56	30.05	0.1384932
28/01/2014	17	0.0018	1790	1792.5	21.75	0.1322718
28/01/2014	31	0.0017	1790	1792.5	27.2	0.1238879
29/01/2014	16	0.0018	1775	1774.2	21.95	0.1503126
29/01/2014	37	0.0018	1775	1774.2	30.5	0.1363883
30/01/2014	15	0.0018	1795	1794.19	19.05	0.1335851

atm_date	atm_vol tau	r	к	s	С	atm_sigma
30/01/2014	36	0.0018	1795	1794.19	28.45	0.1276417
31/01/2014	14	0.0017	1785	1782.59	19.45	0.147648
31/01/2014	35	0.0018	1785	1782.59	29.35	0.1379272
03/02/2014	11	0.0013	1740	1741.89	24.1	0.191664
03/02/2014	32	0.0018	1740	1741.89	35.4	0.1668536
04/02/2014	18	0.0014	1755	1755.2	21.9	0.1398206
04/02/2014	31	0.0018	1755	1755.2	29.55	0.1436853
05/02/2014	17	0.0014	1750	1751.64	23.75	0.151678
05/02/2014	37	0.0019	1750	1751.64	34.8	0.1520283
06/02/2014	16	0.0014	1775	1773.43	19.3	0.1351159
06/02/2014	36	0.0019	1775	1773.43	29.25	0.134372
07/02/2014	15	0.0014	1795	1797.02	16.5	0.1061327
07/02/2014	35	0.0019	1795	1797.02	26.9	0.1158909
10/02/2014	12	0.0013	1800	1799.84	13.45	0.1036259
10/02/2014	32	0.002	1800	1799.84	24.4	0.1144112
11/02/2014	11	0.0013	1820	1819.75	11.3	0.0903653
11/02/2014	31	0.002	1820	1819.75	22.15	0.1045589
12/02/2014	16	0.0014	1820	1819.26	15.25	0.1023963
12/02/2014	38	0.0017	1820	1819.26	25.05	0.1078519
13/02/2014	15	0.0014	1830	1829.83	14.1	0.0954977
13/02/2014	37	0.0017	1830	1829.83	24.75	0.1061842
14/02/2014	14	0.0013	1840	1838.63	12.55	0.0917115
14/02/2014	36	0.0017	1840	1838.63	23.4	0.103842
18/02/2014	17	0.0014	1840	1840.76	16.45	0.1010216
18/02/2014	32	0.0016	1840	1840.76	23.5	0.1057527
19/02/2014	16	0.0014	1830	1828.75	16.5	0.1116728
19/02/2014	31	0.0016	1830	1828.75	23.8	0.1142515
20/02/2014	15	0.0014	1840	1839.78	16.3	0.109932
20/02/2014	36	0.0017	1840	1839.78	26.5	0.1147818
21/02/2014	14	0.0013	1835	1836.25	15.4	0.1026361
21/02/2014	35	0.0017	1835	1836.25	25.55	0.1092348
24/02/2014	11	0.0013	1850	1847.61	13.5	0.1142604
24/02/2014	32	0.0017	1850	1847.61	23.9	0.1142274
25/02/2014	17	0.0014	1845	1845.12	16.1	0.1005979
25/02/2014	31	0.0016	1845	1845.12	23.55	0.108929
26/02/2014	16	0.0014	1845	1845.16	16.25	0.1045587
26/02/2014	33	0.0017	1845	1845.16	24.55	0.10993

atm_date	atm_vol tau	r	К	S	С	atm_sigma
27/02/2014	15	0.0013	1855	1854.29	14.1	0.0960314
27/02/2014	32	0.0017	1855	1854.29	22.35	0.1030164
28/02/2014	14	0.0013	1860	1859.45	14.7	0.1027376
28/02/2014	31	0.0017	1860	1859.45	22.7	0.1056477

Monday, November 2, 2020 02:44:26 PM 8 Difference between VIX and Implied volatility (ATM Vol.)

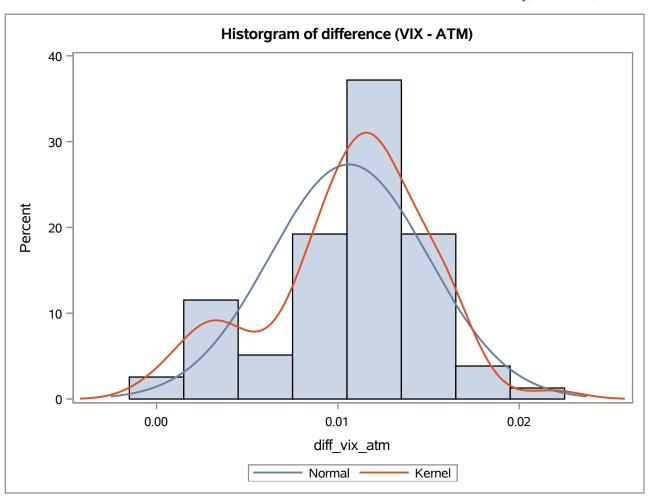
02/01/2014 16 0.1170381 0.1093095 0.0077286 02/01/2014 36 0.1201672 0.1161662 0.004001 03/01/2014 15 0.1092842 0.1002058 0.0090784 03/01/2014 35 0.1180947 0.1143741 0.0037206 06/01/2014 32 0.1164273 0.1127951 0.0036322 07/01/2014 31 0.0984643 0.0990376 0.0094267 07/01/2014 31 0.101547 0.1028385 0.0087085 09/01/2014 35 0.104223 0.095479 0.0087085 09/01/2014 36 0.1092941 0.1007975 0.0084967 10/01/2014 36 0.10929455 0.0849131 0.0080324 10/01/2014 31 0.1055504 0.0942653 0.011264 13/01/2014 31 0.1055504 0.0942653 0.011264 14/01/2014 31 0.1080404 0.099028 0.009376 15/01/2014 31 0.1065385 0.0921847 0.01	date	tau	VIX sigma	ATM implied vol	difference
02/01/2014 36 0.1201672 0.1161662 0.004001 03/01/2014 35 0.1092842 0.1002058 0.0090784 03/01/2014 35 0.1180947 0.1143741 0.0037206 06/01/2014 32 0.1164273 0.1127951 0.0036322 07/01/2014 31 0.111547 0.1028385 0.0087085 09/01/2014 36 0.104223 0.095479 0.0087439 09/01/2014 36 0.1092941 0.1007975 0.0084967 10/01/2014 36 0.1092941 0.1007975 0.0084967 10/01/2014 35 0.1055504 0.0942653 0.011285 13/01/2014 31 0.1255504 0.0942653 0.011286 13/01/2014 31 0.128517 0.1091401 0.011715 13/01/2014 31 0.1088404 0.0990028 0.0090376 14/01/2014 31 0.1068886 0.0953416 0.011547 15/01/2014 38 0.1063388 0.0921847 0.0145					
03/01/2014 15 0.1092842 0.1002058 0.0090784 03/01/2014 35 0.1180947 0.1143741 0.0037206 06/01/2014 12 0.1043383 0.1010529 0.0036322 07/01/2014 11 0.0984643 0.0890376 0.0094267 07/01/2014 31 0.111547 0.1028385 0.0087085 09/01/2014 36 0.104223 0.095479 0.0084967 10/01/2014 36 0.1092941 0.1007975 0.0084967 10/01/2014 34 0.0929455 0.0849131 0.0080324 10/01/2014 34 0.0929455 0.0849131 0.0080324 10/01/2014 34 0.0929455 0.0849131 0.0080324 10/01/2014 31 0.1055504 0.0942653 0.0112646 13/01/2014 31 0.108404 0.0990028 0.0091756 14/01/2014 31 0.1086886 0.0953416 0.011547 15/01/2014 36 0.1063388 0.0921847 0.					
03/01/2014 35 0.1180947 0.1143741 0.0037206 06/01/2014 12 0.1043383 0.1010529 0.0032854 06/01/2014 32 0.1164273 0.1127951 0.0036322 07/01/2014 11 0.0984643 0.0890376 0.0087085 09/01/2014 35 0.104223 0.095479 0.0087439 09/01/2014 36 0.1092941 0.1007975 0.0084967 10/01/2014 36 0.1092941 0.1007975 0.0080324 10/01/2014 35 0.1055504 0.0942653 0.011285 13/01/2014 31 0.1208517 0.1091401 0.0117115 13/01/2014 32 0.1183832 0.1071185 0.0112646 14/01/2014 31 0.1080404 0.0990028 0.0090376 15/01/2014 36 0.1063358 0.0921847 0.014571 15/01/2014 38 0.1063358 0.0921847 0.014521 16/01/2014 37 0.106948 0.092075 0.01					
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17/01/2014 14 0.1074926 0.092075 0.0154176 17/01/2014 36 0.1047073 0.0902335 0.0144737 21/01/2014 17 0.1072802 0.0923668 0.0149135 21/01/2014 32 0.1042935 0.0882131 0.0160804 22/01/2014 16 0.1099104 0.1002471 0.0096633 22/01/2014 31 0.1043836 0.093691 0.0106926 23/01/2014 15 0.1252954 0.1091241 0.0161713 23/01/2014 36 0.1149881 0.1017661 0.013222 24/01/2014 14 0.1627518 0.1629959 -0.000244 24/01/2014 35 0.1382781 0.1375224 0.0007557 27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 16 0.1624316 0.1503126	16/01/2014	15	0.1065485	0.0960255	0.0105231
17/01/2014 36 0.1047073 0.0902335 0.0144737 21/01/2014 17 0.1072802 0.0923668 0.0149135 21/01/2014 32 0.1042935 0.0882131 0.0160804 22/01/2014 16 0.1099104 0.1002471 0.0096633 22/01/2014 31 0.1043836 0.093691 0.0106926 23/01/2014 15 0.1252954 0.1091241 0.0161713 23/01/2014 36 0.1149881 0.1017661 0.013222 24/01/2014 14 0.1627518 0.1629959 -0.000244 24/01/2014 35 0.1382781 0.1375224 0.0007557 27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 <td< td=""><td>16/01/2014</td><td>37</td><td>0.1060944</td><td>0.0923333</td><td>0.0137612</td></td<>	16/01/2014	37	0.1060944	0.0923333	0.0137612
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22/01/2014 16 0.1099104 0.1002471 0.0096633 22/01/2014 31 0.1043836 0.093691 0.0106926 23/01/2014 15 0.1252954 0.1091241 0.0161713 23/01/2014 36 0.1149881 0.1017661 0.013222 24/01/2014 14 0.1627518 0.1629959 -0.000244 24/01/2014 35 0.1382781 0.1375224 0.0007557 27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	21/01/2014	17	0.1072802	0.0923668	0.0149135
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23/01/2014 15 0.1252954 0.1091241 0.0161713 23/01/2014 36 0.1149881 0.1017661 0.013222 24/01/2014 14 0.1627518 0.1629959 -0.000244 24/01/2014 35 0.1382781 0.1375224 0.0007557 27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	22/01/2014	16	0.1099104	0.1002471	0.0096633
23/01/2014 36 0.1149881 0.1017661 0.013222 24/01/2014 14 0.1627518 0.1629959 -0.000244 24/01/2014 35 0.1382781 0.1375224 0.0007557 27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	22/01/2014	31	0.1043836	0.093691	0.0106926
24/01/2014 14 0.1627518 0.1629959 -0.000244 24/01/2014 35 0.1382781 0.1375224 0.0007557 27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	23/01/2014	15	0.1252954	0.1091241	0.0161713
24/01/2014 35 0.1382781 0.1375224 0.0007557 27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	23/01/2014	36	0.1149881	0.1017661	0.013222
27/01/2014 11 0.1632527 0.1606848 0.0025678 27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	24/01/2014	14	0.1627518	0.1629959	-0.000244
27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	24/01/2014	35	0.1382781	0.1375224	0.0007557
27/01/2014 32 0.1408039 0.1384932 0.0023107 28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	27/01/2014		0.1632527		
28/01/2014 17 0.1457494 0.1322718 0.0134776 28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119	27/01/2014				
28/01/2014 31 0.1336971 0.1238879 0.0098092 29/01/2014 16 0.1624316 0.1503126 0.012119					
29/01/2014 16 0.1624316 0.1503126 0.012119					
29/01/2014 37 0.1420554 0.1363883 0.0056671					

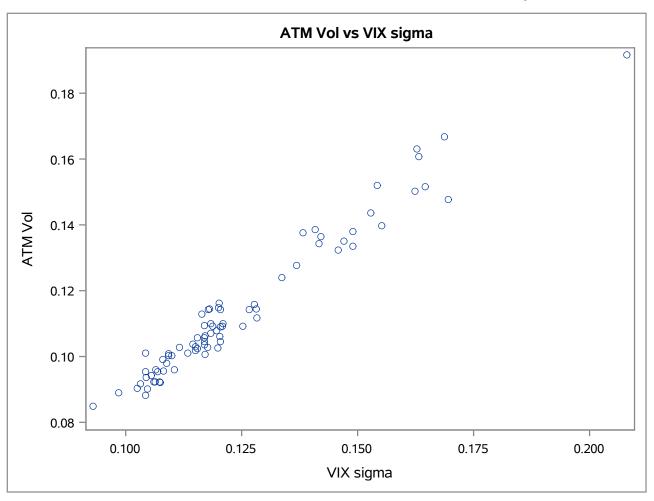
Difference between VIX and Implied volatility (ATM Vol.)

date	tau	VIX sigma	ATM implied vol	difference
30/01/2014	15	0.148968	0.1335851	0.0153828
30/01/2014	36	0.1367989	0.1276417	0.0091571
31/01/2014	14	0.1694981	0.147648	0.0218501
31/01/2014	35	0.148972	0.1379272	0.0110448
03/02/2014	11	0.2080373	0.191664	0.0163734
03/02/2014	32	0.1686793	0.1668536	0.0018257
04/02/2014	18	0.1552187	0.1398206	0.0153981
04/02/2014	31	0.1529083	0.1436853	0.009223
05/02/2014	17	0.1645084	0.151678	0.0128303
05/02/2014	37	0.154211	0.1520283	0.0021827
06/02/2014	16	0.147005	0.1351159	0.0118891
06/02/2014	36	0.1416988	0.134372	0.0073268
07/02/2014	15	0.1202574	0.1061327	0.0141247
07/02/2014	35	0.1276725	0.1158909	0.0117817
10/02/2014	12	0.1169855	0.1036259	0.0133596
10/02/2014	32	0.1280854	0.1144112	0.0136742
11/02/2014	11	0.1025309	0.0903653	0.0121656
11/02/2014	31	0.1203682	0.1045589	0.0158092
12/02/2014	16	0.1153911	0.1023963	0.0129948
12/02/2014	38	0.1195816	0.1078519	0.0117297
13/02/2014	15	0.108166	0.0954977	0.0126683
13/02/2014	37	0.117114	0.1061842	0.0109298
14/02/2014	14	0.1031824	0.0917115	0.0114708
14/02/2014	36	0.1144331	0.103842	0.0105911
18/02/2014	17	0.1133432	0.1010216	0.0123216
18/02/2014	32	0.1169791	0.1057527	0.0112265
19/02/2014	16	0.1282995	0.1116728	0.0166266
19/02/2014	31	0.1266805	0.1142515	0.012429
20/02/2014	15	0.1210338	0.109932	0.0111017
20/02/2014	36	0.1199807	0.1147818	0.005199
21/02/2014	14	0.1198954	0.1026361	0.0172592
21/02/2014	35	0.1187085	0.1092348	0.0094737
24/02/2014	11	0.1204709	0.1142604	0.0062105
24/02/2014	32	0.1177683	0.1142274	0.0035409
25/02/2014	17	0.1171083	0.1005979	0.0165104
25/02/2014	31	0.1203744	0.108929	0.0114455

Monday, November 2, 2020 02:44:26 PM 10 Difference between VIX and Implied volatility (ATM Vol.)

date	tau	VIX sigma	ATM implied vol	difference
26/02/2014	16	0.1169427	0.1045587	0.012384
26/02/2014	33	0.1183219	0.10993	0.0083919
27/02/2014	15	0.1105026	0.0960314	0.0144712
27/02/2014	32	0.1150355	0.1030164	0.012019
28/02/2014	14	0.1176995	0.1027376	0.0149619
28/02/2014	31	0.1154259	0.1056477	0.0097782





co	orr
1	0.9792483
0.9792483	1

LMS: The 40th ordered squared residual will be minimized.

	Median and Mean				
	Median	Mean			
VAR1	0.1066513421	0.1135160317			
Intercep	1	1			
Response	0.1179315	0.1241217126			

Dispersion and Standard Deviation				
	Dispersion	StdDev		
VAR1	0.0133459362	0.0215358518		
Intercep	0	0		
Response	0.0145714687	0.0207554125		

There are 3003 subsets of 2 cases out of 78 cases.

The algorithm will draw 1000 random subsets of 2 cases.

Random Subsampling for LMS

25 % of calculations have been executed.

75 % of calculations have been executed.

Minimum Criterion= 0.1463100594

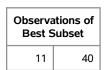
Least Median of Squares (LMS) Method

Minimizing 40th Ordered Squared Residual.

Highest Possible Breakdown Value = 50.00 %

Random Selection of 1000 Subsets

All 1000 Subsets were Nonsingular



Estimated (Estimated Coefficients		
VAR1	Intercep		
1.0568228445	0.0053393053		

LMS Objective Function = 0.0021319525

Preliminary LMS Scale = 0.0032651267

Robust R Squared = 0.9090047932

Final LMS Scale = 0.0036455741

The run has been executed successfully.

LMS Information and Estimates		
Quantile	40	
Number of Subsets	1000	
Number of Singular Subsets	0	
Number of Nonzero Weights	72	
Objective Function	0.002132	
Preliminary Scale Estimate	0.0032651	
Final Scale Estimate	0.0036456	
Robust R Squared	0.9090048	
Asymptotic Consistency Factor	1.4392593	