Data: Options and Volatilities

Meeting 6

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Data (summary)

- Period: 2004-04-01 - 2013-07-03 (2331 observations)
- Option: 3-months ATM European Call
- $\Rightarrow$ 37 non-overlapping trading periods (quarters)
- Option i is bought or sold at initiation ($t_i = 0$). This position is Δ-hedged on a daily basis up to expiry (T_i). Hedging volatility is either
  - implied market volatility or
  - a proxy for true model volatility
- This procedure is repeated for all 37 trading periods/options

Optionsdata

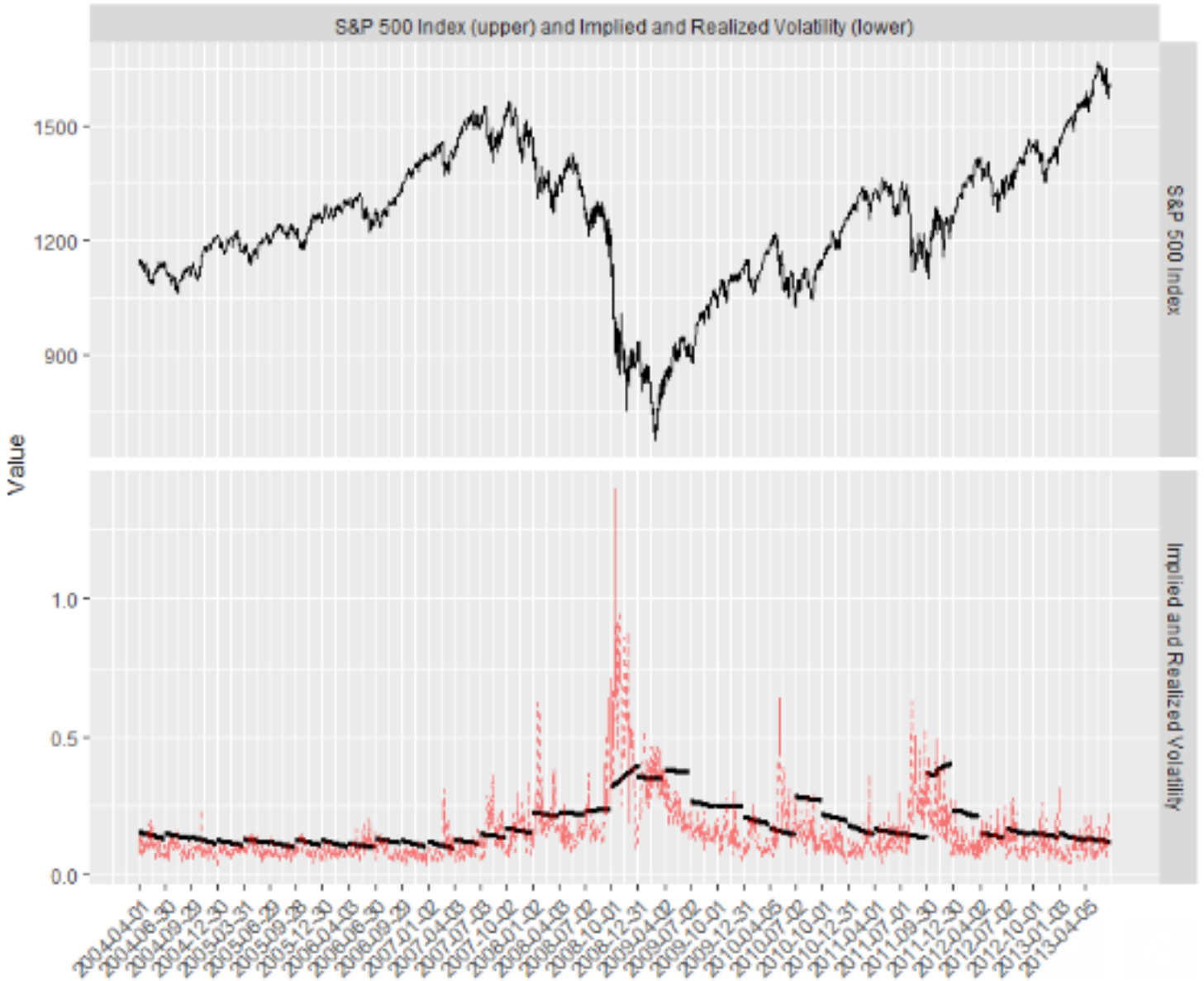
Date	DateID	Option	S	K	r	q	tau	t	sigma	C
2004-04-01	20040401	1	1132.17	1132.17	0.01120745	0.01729021	0.2460317	0.003968254	0.1563722	34.06390
2004-04-02	20040402	1	1141.81	1132.17	0.01146709	0.01691840	0.2420635	0.007936508	0.1560005	38.89285
2004-04-05	20040405	1	1150.57	1132.17	0.01168984	0.01689221	0.2380952	0.011904762	0.1556288	43.57572
2004-04-06	20040406	1	1148.16	1132.17	0.01167893	0.01623425	0.2341270	0.015873016	0.1552571	41.91913
2004-04-07	20040407	1	1140.53	1132.17	0.01158751	0.01633662	0.2301587	0.019841270	0.1548854	37.23660
2004-04-08	20040408	1	1139.32	1132.17	0.01158175	0.01688505	0.2261905	0.023809524	0.1545137	36.14591

⋮

Date	DateID	Option	S	K	r	q	tau	t	sigma	C
2013-06-26	20130626	37	1603.26	1553.28	0.001978661	0.02018348	0.019841270	0.2301587	0.1217444	49.76097
2013-06-27	20130627	37	1613.20	1553.28	0.001975077	0.02018743	0.015873016	0.2341270	0.1215687	59.50809
2013-06-28	20130628	37	1606.28	1553.28	0.001970250	0.02023873	0.011904762	0.2380952	0.1213931	52.68926
2013-07-01	20130701	37	1614.96	1553.28	0.001959770	0.02025180	0.007936508	0.2420635	0.1212174	61.44530
2013-07-02	20130702	37	1614.08	1553.28	0.001943370	0.02025919	0.003968254	0.2460317	0.1210418	60.68222
2013-07-03	20130703	37	1615.41	1553.28	0.002079331	0.02026829	0.000000000	0.2500000	0.1208661	62.13000

Note: q denotes dividends, σ is the marked implied volatility and C is the corresponding market price. Moreover, $\tau = T - t$.

Illustration: Implied Volatilities



Realized Volatility Measures (Annualized)

Date	DateID	rv5	rsv	medrv	bv	rk_parzen	naive
2004-04-01	20040401	0.09722003	0.05529232	0.05967779	0.09253444	0.10778653	0.05902429
2004-04-02	20040402	0.14426260	0.07658941	0.07159939	0.11434452	0.09996613	0.05952785
2004-04-05	20040405	0.06260253	0.03375878	0.03386997	0.05655782	0.07436740	0.05995701
2004-04-06	20040406	0.08353819	0.06877782	0.04714543	0.06207277	0.05573840	0.05995469
2004-04-07	20040407	0.09281961	0.07302664	0.05345326	0.08260511	0.10531490	0.05908671
2004-04-08	20040408	0.15254548	0.08162486	0.07196944	0.09306971	0.10545477	0.05909830

⋮

Date	DateID	rv5	rsv	medrv	bv	rk_parzen	naive
2013-06-26	20130626	0.13748365	0.05934276	0.06401910	0.08808918	0.10803893	0.07007186
2013-06-27	20130627	0.10973932	0.06662959	0.06300358	0.09241529	0.10610167	0.07024592
2013-06-28	20130628	0.11224704	0.08927212	0.07944611	0.10421940	0.13868146	0.07028637
2013-07-01	20130701	0.11328222	0.05730909	0.06066210	0.07561529	0.13815827	0.07033315
2013-07-02	20130702	0.09369243	0.06880502	0.07412574	0.09317960	0.11091020	0.06946433
2013-07-03	20130703	0.09164289	0.06690886	0.04084609	0.08219563	0.07453745	0.06936936

Source: `https://realized.oxford-man.ox.ac.uk/`

Illustration: Realized Measures