Financial Econometrics and Volatility Models
Return Predictability

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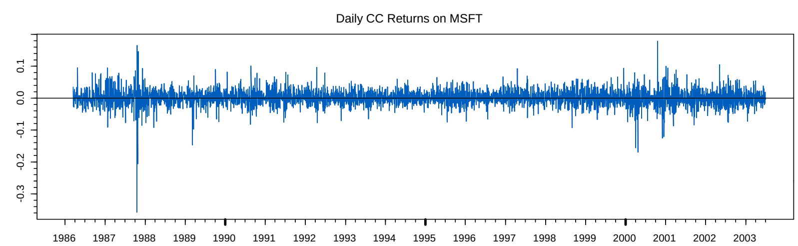
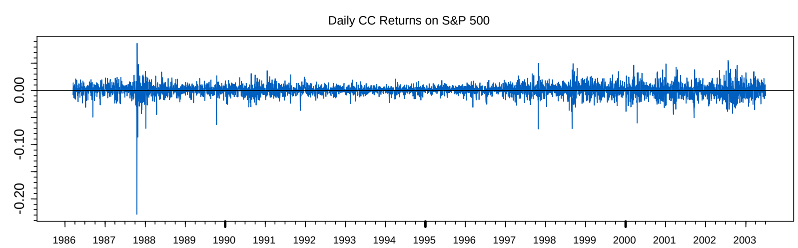
Updated: March 31, 2010

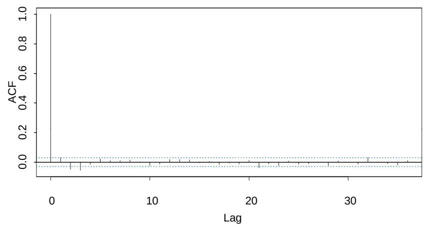
Example Data



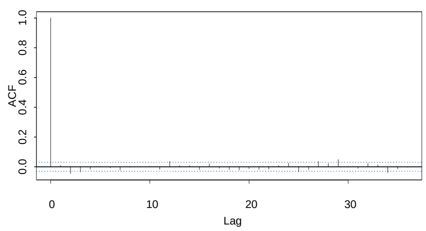


Testing for Autocorrelation

Daily CC Returns on MSFT



Daily CC Returns on S&P 500

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Test for Autocorrelation: Ljung-Box

Null Hypothesis: no autocorrelation

Test Statistics:
              SP500
Test Stat 35.1892
  p.value  0.0191

Dist. under Null: chi-square with 20
degrees of freedom
   Total Observ.: 4365
```

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Test for Autocorrelation: Ljung-Box

Null Hypothesis: no autocorrelation

Test Statistics:
               MSFT
Test Stat 43.2323
  p.value  0.0019

Dist. under Null: chi-square with 20
degrees of freedom
   Total Observ.: 4365
```

MQ stat is not robust to heteroskedasticity

Variance Ratio Test: MSFT

Variance Ratio Test

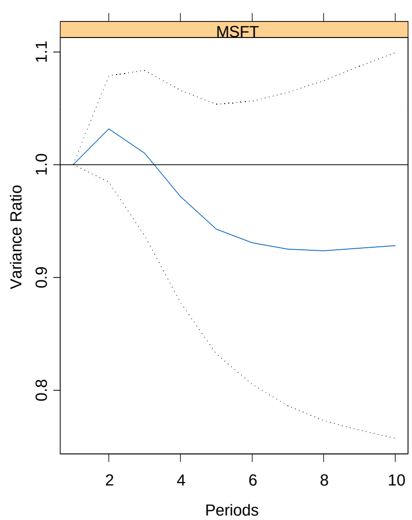
Null Hypothesis: random walk with heteroskedastic errors

Variable: MSFT

	var.ratio	std.err	stat
2	1.0317	0.02361	1.3443
3	1.0103	0.03667	0.2796
4	0.9718	0.04703	-0.5991
5	0.9428	0.05535	-1.0335
6	0.9308	0.06274	-1.1033
7	0.9251	0.06946	-1.0776
8	0.9237	0.07538	-1.0119
9	0.9260	0.08066	-0.9180
10	0.9283	0.08547	-0.8385

*** : significant at 5% level**
**** : significant at 1% level**

Variance Ratio Profile



Variance Ratio Test: SP500

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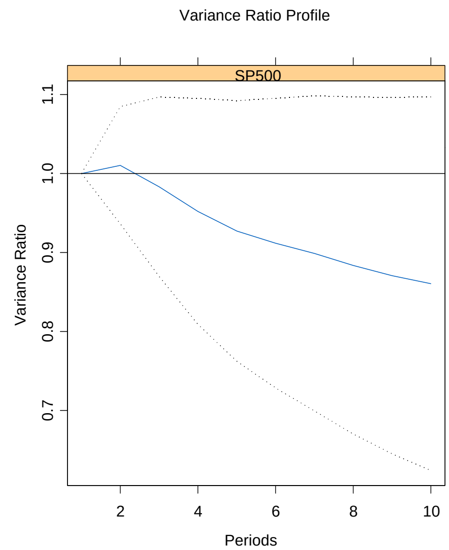
Variance Ratio Test

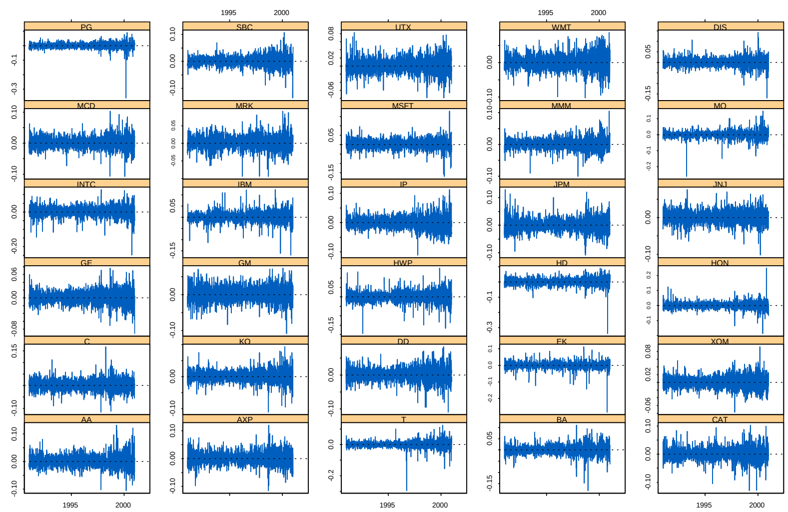
Null Hypothesis: random walk with
   heteroskedastic errors

Variable: SP500
   var.ratio std.err    stat
 2    1.0104 0.03711  0.2799
 3    0.9832 0.05683 -0.2954
 4    0.9522 0.07156 -0.6684
 5    0.9272 0.08253 -0.8825
 6    0.9118 0.09167 -0.9620
 7    0.8989 0.09974 -1.0139
 8    0.8835 0.10671 -1.0916
 9    0.8707 0.11283 -1.1461
10    0.8605 0.11831 -1.1788

 * : significant at 5% level
** : significant at 1% level
```



Dow Jones 30 Daily returns: 1991 - 2001



Variance Ratio Tests: Dow Jones 30 Stocks