

List of Tables

2.1a	Variance-ratio test of the random walk hypothesis for CRSP equal- and value-weighted indexes	28
2.1b	Market index results for a four-week base observation period	29
2.2	Variance-ratio test of the random walk hypothesis for size-sorted portfolios	31
2.3	Means of variance ratios over all individual securities with complete return histories from September 2, 1962, to December 26, 1985 (625 stocks)	33
2.4	Spuriously induced autocorrelations are reported for nontrading probabilities $1 - p$ of 10 to 50 percent	37
3.1	Empirical sizes of nominal 1, 5, and 10 percent two-sided variance ratio tests of the random walk null hypothesis with homoskedastic disturbances	56
3.2	Empirical quantiles of the (Dickey-Fuller) t -statistic	61
3.3	Empirical sizes of nominal 1, 5, and 10 percent two-sided variance ratio tests of the random walk null hypothesis with homoskedastic disturbances	63
3.4	Empirical quantiles of the (asymptotically) $\mathcal{N}(0, 1)$ variance ratio test statistic $z_1(q)$ under simulated IID Gaussian random walk increments	71
3.5	Power of the two-sided variance ratio test	74
4.1	Sample first-order autocorrelation matrix $\hat{\Gamma}_1$ for the 5×1 subvector $[R_1^o, R_5^o, R_{10}^o, R_{15}^o, R_{20}^o]'$ of observed returns to twenty equally-weighted size-sorted portfolios	102
4.2	Estimates of daily nontrading probabilities implicit in 20 weekly and monthly size-sorted portfolio return autocorrelations	103

4.3	Estimates of the first-order autocorrelation ρ_m of weekly returns of an equal-weighted portfolio of twenty size-sorted portfolios	105
5.1	Sample statistics	119
5.2	Averages of autocorrelation coefficients for weekly returns on individual securities, for the period July 6, 1962, to December 31, 1987	120
5.3	Analysis of the profitability of the return-reversal strategy applied to weekly returns, for the sample of 551 CRSP NYSE-AMEX stocks with nonmissing weekly returns from July 6, 1962, to 31 December 1987 (1330 weeks)	133
5.4	Autocorrelation matrices	136
6.1	Comparison of autocorrelation functions	154
6.2	Fractiles of the distribution $F_V(v)$	157
6.3	R/S analysis of daily equal- and value-weighted CRSP stock returns indexes from July 3, 1962, to December 31, 1987	168
6.4	R/S analysis of monthly equal- and value-weighted CRSP stock returns indexes from January 30, 1926, to December 31, 1987	169
6.5	Finite sample distribution of the modified R/S statistic under an IID null hypothesis	173
6.6	Power of the modified R/S statistic under a Gaussian fractionally differenced alternative with differencing parameter $d = 1/3$	177
7.1	Historical Sharpe measures for selected stock indices, where the Sharpe measure is defined as the ratio of the mean excess return to the standard deviation of the excess return	201
7.2	A comparison of the maximum squared Sharpe measure for two economies denoted A and B	211
8.1	Theoretical sizes of nominal 5 percent χ_n^2 -tests of $H: \alpha_i = 0$ ($i = 1, \dots, n$) for individual securities	223
8.2	Theoretical sizes of nominal 5 percent χ_q^2 -tests of $H: \alpha_i = 0$ ($i = 1, \dots, n$) for portfolios	226
8.3	Critical values C_{05} for 5 percent χ^2 -tests of $H: \alpha_i = 0$ ($i = 1, \dots, n$)	227
8.4	Empirical sizes of nominal 5 percent χ_q^2 -tests of $H: \alpha_i = 0$ ($i = 1, \dots, n$)	232
8.5	Empirical size of $F_{q,T-q}$ tests based on q portfolios sorted by a random characteristic whose squared correlation with $\hat{\alpha}_i$ is R^2	235

8.6	Empirical size of $F_{q,T-q}$ tests based on q portfolios sorted by a random characteristic whose squared correlation with $\hat{\alpha}_i$ is approximately 0.05	237
8.7	Theoretical sizes of nominal 5 percent χ_q^2 -tests under the null hypothesis of the Sharpe-Lintner CAPM	240
8.8	Comparison of p -values	242
8.9	Theoretical sizes of nominal 5 percent χ_q^2 -tests of $H: \alpha_i = 0$ ($i = 1, \dots, n$)	246
9.1	Comparison of predictability of PC1 portfolio and MPP for a universe of two assets, A and B	256
9.2	Ordinary least squares regression results for individual asset returns in SBU asset group from 1947:1 to 1993:12	263
9.3	Ordinary least squares regression results for individual asset returns in the SIZE asset group from 1947:1 to 1993:12	265
9.4	Ordinary least squares regression results for individual asset returns in the SECTOR asset group from 1947:1 to 1993:12	267
9.5	Conditional expected return of MPP for the three asset groups from 1947:1 to 1993:12	270
9.6	Portfolio weights of MPP for three asset groups from 1947:1 to 1993:12	272
9.7	Simulated finite-sample distribution of maximum R^2 of MPP of N assets under null hypothesis of no predictability, using six variables as predictors	274
9.8	Finite-sample distribution of R^2 of a given portfolio under null hypothesis of no predictability, using six variables as predictors	275
9.9	Out-of-sample evaluation of conditional one-step-ahead forecasts of MPP using a regression model with six predictors	278
9.10	Out-of-sample evaluation of conditional one-step-ahead forecasts of MPP using Merton's measure of market timing	280
9.11	Out-of-sample evaluation of conditional one-step-ahead forecasts of MPP using a comparison of passive and active investment strategies in the portfolio	282
10.1	Summary statistics for transaction prices and corresponding ordered probit explanatory variables for the period from January 4, 1988, to December 30, 1988	299
10.2a	Maximum likelihood estimates	312
10.2b	Cross-autocorrelation coefficients \hat{v}_j , $j = 1, \dots, 12$, of generalized residuals $\{\hat{\epsilon}_k\}$	314
10.2c	Score test statistics $\hat{\xi}_j$, $j = 1, \dots, 12$, where $\hat{\xi}_j \stackrel{a}{\sim} \chi_1^2$	315

10.3	Price impact of trades as measured by the change in conditional mean of Z_k , or $\Delta E[Z_k]$, when trade sizes are increased incrementally above the base case of a \$5,000 trade	324
10.4	Discreteness cannot be completely captured by simple rounding	329
10.5	Names, ticker symbols, market values, and sample sizes over the period from January 4, 1988, to December 30, 1988 for 100 randomly selected stocks	336
10.6	Summary statistics for the sample of 100 randomly chosen securities for the period from January 4, 1988, to December 30, 1988	339
10.7	Price impact measures, defined as the increase in conditional expected price change given by the ordered probit model as the volume of the most recent trade is increased from a base case of \$1,000 to either the median level of volume for each security or a level of \$100,000	342
10.8	Summary of the cross-sectional dispersion in price impact measures and the nonlinearity of the price-change/volume relation (as measured by the Box-Cox parameters, $\hat{\lambda}_i$)	343
10.9	Robust measure of the cross-sectional dispersion in price impact measures and the nonlinearity of the price-change/volume relation (as measured by the Box-Cox parameters $\hat{\lambda}_i$)	344
11.1	Autocorrelations for changes of the logarithm of price in the S&P 500 futures and index by contract, September 1983 to June 1987	356
11.2	Summary statistics for the changes of the logarithm of price in the S&P 500 futures and Index by contract, September 1983 to June 1987	358
11.3	Aggregate variance-ratio results (based on 16 contracts, September 1983 to June 1987)	360
11.4	Summary statistics on the levels and first differences in mispricing in the S&P 500 futures contracts, by expiration	362
11.5	Mispricing violations for S&P 500 index futures	365
12.1	Percentage returns on S&P and non-S&P stocks cross-classified by firm size quartiles for three time intervals on October 19 and 20, 1987	377
12.2	Cross-sectional rank correlations of individual security returns and normalized order imbalance by half hour intervals	384

12A.1	Realized returns from Friday close cross-classified by opening time and trading interval for S&P stocks during the first hour and a half of trading on October 19, 1987	392
12A.2	Percentage of S&P stocks traded by firm size quartile in each fifteen-minute interval during the opening hour of October 19, 1987	393