

1 Data

The dependent variable is always the equity premium, i.e., the total rate of return on the stock market minus the prevailing short-term interest rate.

- Stock Prices: We use S&P 500 index prices from 1926 to 2008 from CRSP's month-end values. Stock Returns are the continuously compounded returns on the S&P 500 index.

For yearly and longer data frequencies, we can go back as far as 1871, using data from Robert Shiller's website. For monthly frequency, we can only begin in the CRSP period.

- Risk-free Rate: The risk-free rate for the period 1920 to 2008 is the T-bill rate. Because there was no risk-free short-term debt prior to the 1920's, we had to estimate it. We obtained commercial paper rates for New York City from NBER's Macrohistory data base. These are available for the period 1871 to 1970. We estimated a regression for the period 1920 to 1971, which yielded

$$\text{T-bill Rate} = -0.004 + 0.886 \times \text{Commercial Paper Rate} \quad . \quad (1)$$

with an R^2 of 95.7%. Therefore, we instrumented the risk-free rate for the period 1871 to 1919 with the predicted regression equation. The correlation for the period 1920 to 1971 between the equity premium computed using the T-bill rate and that computed using the predicted commercial paper rate is 99.8%.

The equity premium had a mean of 4.47%, median of 6.31%, and standard deviation of 18.15% over the entire sample period of 1872 to 2008. The equity premium is 5.38% (standard deviation of 19.71%) from 1927–2008, 5.51% (standard deviation of 16.78%) from 1947–2008, and 2.93% (standard deviation of 17.01%) from 1965–2008.

Our first set of independent variables relate primarily to characteristics of stocks:

- Dividends: Dividends are twelve-month moving sums of dividends paid on the S&P 500 index. They are from Robert Shiller's website for the period 1871 to 1970. Dividends from 1971 to 2008 are from S&P Corporation.

The **Dividend Price Ratio (d/p)** is the difference between the log of dividends and the log of prices. The **Dividend Yield (d/y)** is the difference between the log of dividends and the log of lagged prices.

- Earnings: Earnings are twelve-month moving sums of earnings on the S&P 500 index. These are from Robert Shiller's website for the period 1871 to June 2003. Earnings from June 2003 to December 2008 are our own estimates based on interpolation of quarterly earnings provided by S&P Corporation.

The **Earnings Price Ratio (e/p)** is the difference between log of earnings and log of prices. **Dividend Payout Ratio (d/e)** is the difference between log of dividends and log of earnings.

- Stock Variance (svar): Stock Variance is computed as sum of squared daily returns on S&P 500. Daily returns for 1871 to 1926 are obtained from Bill Schwert while daily returns from 1926 to 2008 are obtained from CRSP.

- **Cross-Sectional Premium (csp)**: The cross-sectional beta premium measures the relative valuations of high- and low-beta stocks. We obtained this variable directly from Sam Thompson. This variable is available from May 1937 to December 2002.
- **Book Value**: Book values from 1920 to 2005 are from Value Line’s website, specifically their *Long-Term Perspective Chart* of the Dow Jones Industrial Average. Book values from 2005 to 2008 are directly from Dow Jones Inc. The **Book to Market Ratio (b/m)** is the ratio of book value to market value for the Dow Jones Industrial Average. For the months of March to December, this is computed by dividing book value at the end of previous year by the price at the end of the current month. For the months of January to February, this is computed by dividing book value at the end of 2 years ago by the price at the end of the current month.
- **Corporate Issuing Activity**: We entertain two measures of corporate issuing activity. **Net Equity Expansion (ntis)** is the ratio of twelve-month moving sums of net issues by NYSE listed stocks divided by the total market capitalization of NYSE stocks. This dollar amount of net equity issuing activity (IPOs, SEOs, stock repurchases, less dividends) for NYSE listed stocks is computed from CRSP data as

$$\text{Net Issue}_t = \text{Mcap}_t - \text{Mcap}_{t-1} \cdot (1 + \text{vwretx}_t), \quad (2)$$

where Mcap is the total market capitalization, and vwretx is the value weighted return (excluding dividends) on the NYSE index.¹ These data are available from 1926 to 2008. The second measure, **Percent Equity Issuing (eqis)**, is the ratio of equity issuing activity as a fraction of total issuing activity. This is the variable proposed in Baker and Wurgler (2000). The authors provided us with the data, except for 2005–2008, which we added ourselves. The first equity issuing measure is relative to aggregate market cap, while the second is relative to aggregate corporate issuing.

Our next set of independent variables are interest-rate related:

- **Treasury Bills (tbl)**: T-bill rates from 1920 to 1933 are the *U.S. Yields On Short-Term United States Securities, Three-Six Month Treasury Notes and Certificates, Three Month Treasury* series from NBER’s Macrohistory data base. T-bill rates from 1934 to 2008 are the *3-Month Treasury Bill: Secondary Market Rate* from the economic research database at Federal Reserve Bank at St. Louis (FRED).
- **Long Term Yield (lty)**: Long-term government bond yields for the period 1919 to 1925 is the *U.S. Yield On Long-Term United States Bonds* series from NBER’s Macrohistory database. Yields from 1926 to 2008 are from Ibbotson’s *Stocks, Bonds, Bills and Inflation Yearbook*.

Long Term Rate of Return (ltr): Long-term government bond returns for the period 1926 to 2008 are from Ibbotson’s *Stocks, Bonds, Bills and Inflation Yearbook*.

The **Term Spread (tms)** is the difference between the long term yield on government bonds and the T-bill.

¹This calculation implicitly assumes that the delisting return is –100 percent. Using the actual delisting return, where available, or ignoring delistings altogether, has no impact on our results.

- Corporate Bond Returns: Long-term corporate bond returns for the period 1926 to 2008 are from Ibbotson’s Stocks, Bonds, Bills and Inflation Yearbook.

Corporate Bond Yields: Yields on AAA- and BAA-rated bonds for the period 1919 to 2008 are from FRED.

The **Default Yield Spread (dfy)**: is the difference between BAA- and AAA- rated corporate bond *yields*.

The **Default Return Spread (dfr)**: is the difference between the return on long-term corporate bonds and returns on the long-term government bonds.

- Inflation (infl): Inflation is the *Consumer Price Index (All Urban Consumers)* for the period 1919 to 2008 from the Bureau of Labor Statistics. Because inflation information is released only in the following month, in our monthly regressions, we inserted one month of waiting before use.

The next variable is related to broad macroeconomic activity

- Investment to Capital Ratio (i/k): Investment to Capital Ratio is the ratio of aggregate (private nonresidential fixed) investment to aggregate capital for the whole economy. This is the variable proposed in Cochrane (1991), which we obtained directly from the author.

Finally, we also entertain two methods that rely on multiple variables or models (**all** and **ms**), and two models that are themselves rolling in their independent variable construction (**cay** and **ms**).

- A “Kitchen Sink” Regression, named “**all**,” which includes all the aforementioned variables. (It does not include **cay**, described below.) We do not report coefficients, just prediction statistics. Consequently, even perfect multicollinearity does not change our results—redundant variables can simply be deleted.
- A model selection approach, named “**ms**.” If there are K variables, we consider 2^K models essentially consisting of all possible combinations of variables. Every period, we select one of these models that gives the minimum cumulative prediction errors up to that time period t . This method is based on Rissanen (1986) and is recommended by Bossaerts and Hillion (1999). Essentially, this method uses our criterion of minimum OOS prediction errors to choose amongst competing models *in each time period* t . This is also similar in spirit to the use of more conventional criteria (like R^2) in Pesaran and Timmerman (1995), who however do not entertain our NULL hypothesis.
- Consumption, wealth, income ratio (cay) is suggested in Lettau and Ludvigson (2001). Although some data are available from Martin Lettau’s website, we reconstruct the data following their procedure as this allows us to expand the time-series. This allows us to have quarterly data from the first quarter of 1952 to the fourth quarter of 2008, and annual data from 1945 to 2008. Lettau-Ludvigson estimate the following equation:

$$c_t = \alpha + \beta_w w_t + \beta_y y_t + \sum_{i=-k}^k b_{w,i} \Delta w_{t-i} + \sum_{i=-k}^k b_{y,i} \Delta y_{t-i} + \epsilon_t, \quad t = k + 1, \dots, T - k, \quad (3)$$

where c is the aggregate consumption, w is the aggregate wealth, and y is the aggregate income. The estimates of the above equation provide $\mathbf{cay} \equiv \widehat{cay}_t = c_t - \hat{\beta}_a a_t - \hat{\beta}_y y_t$, $t = 1, \dots, T$. Eight leads/lags are used in quarterly estimation ($k = 8$) while two lags are used in annual estimation ($k = 2$). (For further details, see Lettau and Ludvigson (2001).)

Because the Lettau-Ludvigson measure of \mathbf{cay} is constructed using look-ahead (*in-sample* regression coefficients), we created an equivalent measure that uses only prevailing data. In other words, if the current time period is ‘ s ’, then we estimated equation (3) using only the data up to ‘ s ’ through

$$c_t = \alpha + \beta_w^s w_t + \beta_y^s y_t + \sum_{i=-k}^k b_{w,i}^s \Delta w_{t-i} + \sum_{i=-k}^k b_{y,i}^s \Delta y_{t-i} + \epsilon_t, \quad t = k+1, \dots, s-k, \quad (4)$$

where the superscript on betas indicates that these are rolling estimates. This measure is called \mathbf{caya} (“ante”) to distinguish it from the traditional variable \mathbf{cayp} constructed with look-ahead bias (“post”).

The latter two models change every period, which renders an in-sample regression problematic. (We would not want to use the final models, and project them backwards as if they were static.) This is also why we did not include \mathbf{caya} in the kitchen sink specification.

2 Empirical Procedure

All regressions are estimated using OLS. The in-sample significance of a regression is determined using the F -statistic, critical values of which are estimated using the bootstrap procedure described below. The OOS forecast uses only the data available up to the time at which the forecast is made. Let e_N denote the vector of rolling OOS errors from the historical mean model and e_A denote the vector of rolling OOS errors from the OLS model. Define $d_t = e_{Nt} - e_{At}$, and $\bar{d} = T^{-1} \cdot \sum_t^T d_t = \text{MSE}_N - \text{MSE}_A$ over the entire OOS period. Then, our OOS statistics are computed as

$$\begin{aligned} R^2 &= 1 - \frac{\text{MSE}_A}{\text{MSE}_N} \quad , \\ \Delta\text{MAE} &= \frac{1}{T} \sum_{t=1}^T (|e_{Nt}| - |e_{At}|) \quad , \\ \Delta\text{RMSE} &= \sqrt{\text{MSE}_N} - \sqrt{\text{MSE}_A} \quad , \\ \text{MSE-T} &= \sqrt{T+1 - 2 \cdot h + h \cdot (h-1)/T} \cdot \left[\frac{\bar{d}}{\widehat{se}(\bar{d})} \right] \quad , \\ \text{MSE-F} &= (T-h+1) \times \left(\frac{\text{MSE}_N - \text{MSE}_A}{\text{MSE}_A} \right) \quad , \\ \text{ENC} &= \frac{T-h+1}{T} \frac{\sum_{t=1}^T (e_{Nt}^2 - e_{Nt} \cdot e_{At})}{\text{MSE}_A} \quad , \end{aligned} \quad (5)$$

where T is the total number of forecast observations and h is the overlap degree ($h = 1$ for no overlap).

MSE-T is the Diebold and Mariano (1995) T -statistic modified by Harvey et al. (1997), and MSE-F is F -statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast (i.e., $\Delta\text{MSE} = 0$). ENC is the statistic proposed by Clark and McCracken (2001) for an encompassing forecast test. Clark and McCracken show that all these statistics follow non-standard distributions when testing nested models. The reason for this is that under the null, the asymptotic difference in squared forecast errors is exactly 0 with 0 variance. This renders the standard distributions asymptotically valid. Because our models are nested, we use asymptotic critical values for MSE tests provided by McCracken, and asymptotic critical values for ENC tests provided by Clark and McCracken. This does not, unfortunately, account for small-sample issues and overlapping annual-observations (for which asymptotic critical values are not available). Critical values for **ms** model are not calculated at all. The NULL hypothesis is that the unconditional forecast is not inferior to the conditional forecast, so our critical values are for a one-sided test.²

²If the regression coefficient β is small (so that explanatory power is low or in-sample R^2 is low), it may happen that our unconditional model outperforms on OOS because of estimation error in rolling estimates of β . In this case, ΔRMSE might be negative but still significant *because these tests are ultimately tests of whether β is equal to zero*.

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Table 1: Forecasts at Monthly Frequency

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the monthly frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *excluding* dividends, of S&P500. Panel A uses the full sample period for each variable and constructs first forecast 20 years after the first data observation. Panel B uses the full sample period for each variable and constructs first forecast in January 1965. Panel C uses only the sample period January 1927 to December 2008 and constructs first forecast in January 1965. The data period for **ms** model is January 1927 to December 2008. All numbers, except \bar{R}^2 , are in percent per month. A star next to IS- \bar{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Full data, Forecasts begin 20 years after the first sample date

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	187102–200812	-0.05	0.0001	-0.04	0.0001	-0.55	-0.0059	-0.0121	-0.88	-6.81
d/y Dividend Yield	187102–200812	-0.01	0.0012	0.04	0.0012	-0.49	-0.0149	-0.0104	-1.17	-5.83
e/p Earning Price Ratio	187102–200812	0.16*	0.0053	0.16	0.0053	-0.05	-0.0118	0.0006	0.10*	0.32*
d/e Dividend Payout Ratio	187112–200812	0.17*	0.0055	-0.02	0.0055	-0.55	0.0026	-0.0119	-0.70	-6.64
svar Stock Variance	188502–200812	0.06	0.0031	0.07	0.0031	-1.32	-0.0029	-0.0320	-0.70	-15.28
csp Cross-Sectional Prem	193705–200212	0.66**	0.0185	0.37	0.0185	-1.26	-0.0596	-0.0231	-0.76	-5.83
b/m Book to Market	192103–200812	0.25*	0.0093	-0.08	0.0093	-0.63	-0.0370	-0.0106	-0.58	-4.12
ntis Net Equity Expansion	192701–200812	0.17	0.0075	-0.54	0.0075	-0.93	0.0044	-0.0166	-0.97	-5.89
tbl T-Bill Rate	192002–200812	0.07	0.0046	0.32	0.0046	-0.15	0.0027	-0.0005	-0.03	-0.20
lty Long Term Yield	191901–200812	-0.01	0.0022	0.05	0.0022	-0.76	-0.0050	-0.0140	-0.61	-5.38
ltr Long Term Return	192601–200812	0.07	0.0046	0.62	0.0046	-1.34	-0.0350	-0.0252	-1.90	-9.00
tms Term Spread	192002–200812	0.02	0.0032	0.19	0.0032	-0.07	0.0025	0.0011	0.11	0.44*
dfy Default Yield Spread	191901–200812	-0.09	0.0000	-0.13	0.0000	-0.36	-0.0068	-0.0053	-2.24	-2.05
dfr Default Return Spread	192601–200812	0.26*	0.0101	0.27	0.0101	-0.10	-0.0029	0.0007	0.07	0.26
infl Inflation	191902–200812	-0.02	0.0021	0.21	0.0021	-0.15	0.0024	-0.0006	-0.15	-0.23
all Kitchen Sink	192701–200812	2.12***	0.0904	2.32	0.0904	-11.82	-0.1975	-0.2073	-3.35	-68.64
ms Model Selection	192701–200812	—	—	—	—	—	—	—	—	—

Panel B: Full data, Forecasts begin in 196501

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	187102–200812	-0.05	0.0001	-0.15	0.0001	-0.43	-0.0069	-0.0053	-1.25	-1.28
d/y Dividend Yield	187102–200812	-0.01	0.0012	-0.08	0.0012	-0.39	-0.0214	-0.0044	-0.55	-1.06
e/p Earning Price Ratio	187102–200812	0.16*	0.0053	0.01	0.0053	-0.23	-0.0240	-0.0010	-0.07	-0.23
d/e Dividend Payout Ratio	187112–200812	0.17*	0.0055	-0.09	0.0055	-0.90	0.0019	-0.0155	-1.10	-3.71
svar Stock Variance	188502–200812	0.06	0.0031	0.56	0.0031	0.02	0.0003	0.0046	0.83*	1.11*
csp Cross-Sectional Prem	193705–200212	0.66**	0.0185	0.44	0.0185	0.45	0.0059	0.0151	0.58*	3.08**
b/m Book to Market	192103–200812	0.25*	0.0093	-0.78	0.0093	-1.53	-0.0646	-0.0294	-1.20	-6.99
ntis Net Equity Expansion	192701–200812	0.17	0.0075	-0.50	0.0075	-1.50	-0.0041	-0.0286	-1.26	-6.82
tbl T-Bill Rate	192002–200812	0.07	0.0046	-0.06	0.0046	-0.26	0.0063	-0.0015	-0.05	-0.37
lty Long Term Yield	191901–200812	-0.01	0.0022	-0.28	0.0022	-0.93	-0.0015	-0.0161	-0.46	-3.85
ltr Long Term Return	192601–200812	0.07	0.0046	0.72	0.0046	-0.43	-0.0214	-0.0052	-0.35	-1.26
tms Term Spread	192002–200812	0.02	0.0032	0.26	0.0032	-0.09	0.0057	0.0023	0.14	0.55
dfy Default Yield Spread	191901–200812	-0.09	0.0000	-0.17	0.0000	-0.29	-0.0042	-0.0022	-1.46	-0.52
dfr Default Return Spread	192601–200812	0.26*	0.0101	0.72	0.0101	0.33	0.0030	0.0114	0.82**	2.75**
infl Inflation	191902–200812	-0.02	0.0021	-0.10	0.0021	-0.09	0.0058	0.0022	0.39	0.53
all Kitchen Sink	192701–200812	2.12***	0.0904	2.37	0.0904	-6.88	-0.1244	-0.1009	-1.57	-23.46
ms Model Selection	192701–200812	—	—	—	—	—	—	—	—	—

Panel C: Data begin in 192701, Forecasts begin in 196501

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	192701–200812	0.05	0.0042	-0.13	0.0042	-0.23	-0.0319	-0.0008	-0.06	-0.19
d/y Dividend Yield	192701–200812	0.14	0.0067	-0.13	0.0067	-0.35	-0.0457	-0.0034	-0.18	-0.82
e/p Earning Price Ratio	192701–200812	0.45**	0.0153	-0.26	0.0153	-0.74	-0.0490	-0.0121	-0.47	-2.90
d/e Dividend Payout Ratio	192701–200812	0.06	0.0045	-0.09	0.0045	-1.62	-0.0186	-0.0312	-2.21	-7.43
svar Stock Variance	192701–200812	0.07	0.0047	0.62	0.0047	0.05	0.0006	0.0052	0.83**	1.24*
csp Cross-Sectional Prem	193705–200212	0.66**	0.0185	0.44	0.0185	0.45	0.0059	0.0151	0.58*	3.08**
b/m Book to Market	192701–200812	0.28*	0.0106	-0.84	0.0106	-1.89	-0.0765	-0.0371	-1.33	-8.81
ntis Net Equity Expansion	192701–200812	0.17	0.0075	-0.50	0.0075	-1.50	-0.0041	-0.0286	-1.26	-6.82
tbl T-Bill Rate	192701–200812	0.03	0.0036	-0.05	0.0036	-0.34	0.0048	-0.0033	-0.12	-0.80
lty Long Term Yield	192701–200812	-0.04	0.0018	-0.27	0.0018	-0.96	-0.0022	-0.0168	-0.49	-4.03
ltr Long Term Return	192701–200812	0.07	0.0048	0.73	0.0048	-0.39	-0.0209	-0.0043	-0.28	-1.03
tms Term Spread	192701–200812	-0.01	0.0025	0.23	0.0025	-0.20	0.0045	-0.0002	-0.01	-0.05
dfy Default Yield Spread	192701–200812	-0.10	0.0001	-0.16	0.0001	-0.26	-0.0038	-0.0015	-0.86	-0.36
dfr Default Return Spread	192701–200812	0.26*	0.0100	0.72	0.0100	0.32	0.0030	0.0112	0.82**	2.70**
infl Inflation	192701–200812	0.01	0.0032	-0.08	0.0032	-0.07	0.0089	0.0027	0.32	0.65
all Kitchen Sink	192701–200812	2.12***	0.0904	2.37	0.0904	-6.88	-0.1244	-0.1009	-1.57	-23.46
ms Model Selection	192701–200812	—	—	—	—	—	—	—	—	—

Table 2: Forecasts at Monthly Frequency with Total Returns

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the monthly frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500 calculated using CRSP data. Panel A uses the full sample period for each variable and constructs first forecast 20 years after the first data observation. Panel B uses the full sample period for each variable and constructs first forecast in January 1965. The data period for **ms** model is January 1927 to December 2008. All numbers, except \overline{R}^2 , are in percent per month. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Data begin in 192701, Forecasts begin in 194701

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	192701–200812	0.23*	0.0092	0.72	0.0092	0.13	-0.0328	0.0055	0.35*	1.95**
d/y Dividend Yield	192701–200812	0.36**	0.0129	0.83	0.0129	-0.14	-0.0503	-0.0001	-0.00	-0.04
e/p Earning Price Ratio	192701–200812	0.75***	0.0237	0.63	0.0237	-0.66	-0.0462	-0.0108	-0.36	-3.85
d/e Dividend Payout Ratio	192701–200812	0.02	0.0034	-0.31	0.0034	-1.47	-0.0084	-0.0277	-1.57	-9.76
svar Stock Variance	192701–200812	0.04	0.0041	0.52	0.0041	-0.04	-0.0005	0.0019	0.45*	0.69*
csp Cross-Sectional Prem	193705–200212	0.92***	0.0245	0.36	0.0245	-0.95	-0.0552	-0.0164	-0.49	-4.14
b/m Book to Market	192701–200812	0.54**	0.0180	-0.10	0.0180	-1.28	-0.0669	-0.0238	-0.92	-8.42
ntis Net Equity Expansion	192701–200812	0.19*	0.0081	-0.62	0.0081	-1.14	-0.0007	-0.0208	-1.14	-7.36
tbl T-Bill Rate	192701–200812	0.05	0.0042	0.37	0.0042	-0.27	0.0016	-0.0029	-0.13	-1.02
lty Long Term Yield	192701–200812	-0.02	0.0022	0.12	0.0022	-1.03	-0.0178	-0.0186	-0.61	-6.57
ltr Long Term Return	192701–200812	0.07	0.0047	0.60	0.0047	-0.99	-0.0334	-0.0178	-1.37	-6.30
tms Term Spread	192701–200812	-0.01	0.0025	0.16	0.0025	-0.16	0.0013	-0.0006	-0.05	-0.20
dfy Default Yield Spread	192701–200812	-0.09	0.0004	-0.13	0.0004	-0.30	-0.0051	-0.0034	-1.23	-1.21
dfr Default Return Spread	192701–200812	0.25*	0.0098	0.38	0.0098	0.04	-0.0032	0.0037	0.36*	1.33*
infl Inflation	192701–200812	-0.01	0.0025	0.06	0.0025	-0.07	0.0042	0.0014	0.23*	0.50*
all Kitchen Sink	192701–200812	2.47***	0.1001	2.74	0.1001	-11.95	-0.2050	-0.2096	-3.35	-69.43
ms Model Selection	192701–200812	—	—	—	—	—	—	—	—	—

Panel B: Data begin in 192701, Forecasts begin in 196501

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	192701–200812	0.23*	0.0092	0.03	0.0092	0.11	-0.0373	0.0066	0.35	1.60**
d/y Dividend Yield	192701–200812	0.36**	0.0129	0.05	0.0129	-0.02	-0.0530	0.0037	0.14	0.88*
e/p Earning Price Ratio	192701–200812	0.75***	0.0237	-0.09	0.0237	-0.46	-0.0515	-0.0060	-0.19	-1.43
d/e Dividend Payout Ratio	192701–200812	0.02	0.0034	-0.11	0.0034	-1.83	-0.0242	-0.0358	-2.57	-8.51
svar Stock Variance	192701–200812	0.04	0.0041	0.58	0.0041	-0.03	0.0000	0.0035	0.62*	0.85*
csp Cross-Sectional Prem	193705–200212	0.92***	0.0245	0.46	0.0245	0.71	0.0091	0.0208	0.71**	4.26***
b/m Book to Market	192701–200812	0.54**	0.0180	-0.87	0.0180	-1.82	-0.0882	-0.0356	-1.08	-8.45
ntis Net Equity Expansion	192701–200812	0.19*	0.0081	-0.52	0.0081	-1.76	-0.0116	-0.0343	-1.43	-8.15
tbl T-Bill Rate	192701–200812	0.05	0.0042	-0.20	0.0042	-0.35	0.0078	-0.0035	-0.11	-0.84
lty Long Term Yield	192701–200812	-0.02	0.0022	-0.39	0.0022	-1.10	-0.0012	-0.0200	-0.51	-4.77
ltr Long Term Return	192701–200812	0.07	0.0047	0.73	0.0047	-0.37	-0.0240	-0.0040	-0.25	-0.95
tms Term Spread	192701–200812	-0.01	0.0025	0.21	0.0025	-0.18	0.0033	0.0003	0.02	0.06
dfy Default Yield Spread	192701–200812	-0.09	0.0004	-0.10	0.0004	-0.20	-0.0032	-0.0002	-0.09	-0.05
dfr Default Return Spread	192701–200812	0.25*	0.0098	0.76	0.0098	0.35	0.0022	0.0118	0.88**	2.84**
infl Inflation	192701–200812	-0.01	0.0025	-0.14	0.0025	-0.10	0.0068	0.0020	0.26	0.48
all Kitchen Sink	192701–200812	2.47***	0.1001	2.44	0.1001	-6.94	-0.1374	-0.1021	-1.57	-23.73
ms Model Selection	192701–200812	—	—	—	—	—	—	—	—	—

Table 3: Forecasts at Quarterly Frequency

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the quarterly frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return in price changes, *excluding* dividends, of S&P500. Panel A uses the full sample period for each variable and constructs first forecast 20 years after the first data observation. Panel B uses the full sample period for each variable and constructs first forecast in the first quarter of 1965 (or 20 years after the first data observation, whichever comes later). Panel C uses only the sample period first quarter of 1927 to fourth quarter of 2008 and constructs first forecast in the first quarter of 1965 (or 20 years after the first data observation, whichever comes later). The data period for **ms** model is first quarter of 1927 to fourth quarter of 2008. All numbers, except \bar{R}^2 , are in percent per quarter. A star next to IS- \bar{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Full data, Forecasts begin 20 years after the first sample date

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	18712-20084	-0.08	0.0049	0.05	0.0049	-1.87	-0.0766	-0.0802	-1.00	-7.66
d/y Dividend Yield	18712-20084	-0.07	0.0053	0.06	0.0053	-1.20	-0.0741	-0.0478	-1.51	-4.59
e/p Earning Price Ratio	18712-20084	0.60**	0.0364	0.59	0.0364	-0.07	-0.0569	0.0072	0.18*	0.69*
d/e Dividend Payout Ratio	18712-20084	0.21	0.0183	-0.21	0.0183	-1.71	0.0001	-0.0724	-0.81	-6.92
svar Stock Variance	18851-20084	-0.19	0.0004	-0.23	0.0004	-4.80	-0.0468	-0.2256	-1.30	-18.09
b/m Book to Market	19211-20084	1.38**	0.0875	-0.73	0.0875	-3.80	-0.2046	-0.1325	-1.01	-9.00
ntis Net Equity Expansion	19271-20084	1.55**	0.0999	-3.14	0.0999	-5.56	0.0201	-0.1973	-1.43	-12.11
tbl T-Bill Rate	19201-20084	0.03	0.0165	0.51	0.0165	-0.85	-0.0471	-0.0191	-0.20	-1.33
lty Long Term Yield	19191-20084	-0.16	0.0065	-0.07	0.0065	-2.61	-0.0952	-0.0887	-0.74	-6.13
ltr Long Term Return	19261-20084	0.34	0.0344	1.31	0.0344	-0.04	0.0561	0.0142	0.23*	0.91*
tms Term Spread	19201-20084	0.02	0.0157	0.50	0.0157	-0.31	0.0272	0.0023	0.04	0.16
dfy Default Yield Spread	19191-20084	-0.22	0.0032	-0.54	0.0032	-1.99	-0.0817	-0.0646	-2.43	-4.48
dfr Default Return Spread	19261-20084	-0.21	0.0048	0.86	0.0048	-6.62	-0.1535	-0.2389	-2.95	-14.69
infl Inflation	19192-20084	-0.16	0.0065	0.24	0.0065	-0.33	-0.0078	0.0011	0.09	0.08
i/k Invstmnt Capital Ratio	19471-20084	2.17**	0.1005	-0.08	0.1005	-0.20	-0.0552	0.0168	0.13	0.67*
cayp Cnsmptn, Wlth, Incme	19521-20084	4.58***	0.2014	4.41	0.2014	2.70	0.1704	0.1433	0.78**	5.15***
caya Cnsmptn, Wlth, Incme	19521-20084	—	—	—	—	-10.36	-0.3015	-0.3962	-1.43	-12.97
all Kitchen Sink	19271-20084	4.52***	0.4241	1.95	0.4241	-42.74	-1.1114	-1.3058	-4.52	-66.16
ms Model Selection	19271-20084	—	—	—	—	—	—	—	—	—

Panel B: Full data, Forecasts begin in 19651

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	18712-20084	-0.08	0.0049	-0.26	0.0049	-1.07	-0.0927	-0.0202	-0.55	-0.86
d/y Dividend Yield	18712-20084	-0.07	0.0053	-0.13	0.0053	-1.06	-0.1036	-0.0199	-0.51	-0.85
e/p Earning Price Ratio	18712-20084	0.60**	0.0364	-0.04	0.0364	-0.91	-0.0947	-0.0138	-0.15	-0.59
d/e Dividend Payout Ratio	18712-20084	0.21	0.0183	-0.46	0.0183	-2.17	0.0133	-0.0649	-1.02	-2.75
svar Stock Variance	18851-20084	-0.19	0.0004	-0.51	0.0004	-0.63	-0.0009	-0.0024	-0.25	-0.10
b/m Book to Market	19211-20084	1.38**	0.0875	-3.22	0.0875	-6.96	-0.3472	-0.2585	-1.49	-10.51
ntis Net Equity Expansion	19271-20084	1.55**	0.0999	-2.66	0.0999	-7.51	0.0089	-0.2799	-1.55	-11.35
tbl T-Bill Rate	19201-20084	0.03	0.0165	-0.51	0.0165	-1.41	-0.0595	-0.0344	-0.24	-1.46
lty Long Term Yield	19191-20084	-0.16	0.0065	-0.93	0.0065	-3.22	-0.1195	-0.1079	-0.61	-4.51
ltr Long Term Return	19261-20084	0.34	0.0344	1.83	0.0344	0.15	0.0764	0.0300	0.36	1.28*
tms Term Spread	19201-20084	0.02	0.0157	0.58	0.0157	-0.47	0.0485	0.0041	0.05	0.18
dfy Default Yield Spread	19191-20084	-0.22	0.0032	-0.44	0.0032	-0.53	-0.0201	0.0019	0.11	0.08
dfr Default Return Spread	19261-20084	-0.21	0.0048	0.85	0.0048	-5.42	-0.0942	-0.1967	-2.13	-8.09
infl Inflation	19192-20084	-0.16	0.0065	-0.22	0.0065	-0.37	-0.0033	0.0082	0.42	0.35
i/k Invstmnt Capital Ratio	19471-20084	2.17**	0.1005	-0.08	0.1005	-0.20	-0.0552	0.0168	0.13	0.67*
cayp Cnsmptn, Wlth, Incme	19521-20084	4.58***	0.2014	4.41	0.2014	2.70	0.1704	0.1433	0.78**	5.15***
caya Cnsmptn, Wlth, Incme	19521-20084	—	—	—	—	-10.36	-0.3015	-0.3962	-1.43	-12.97
all Kitchen Sink	19271-20084	4.52***	0.4241	-1.14	0.4241	-31.93	-0.9433	-0.9243	-3.28	-33.65
ms Model Selection	19271-20084	—	—	—	—	—	—	—	—	—

Panel C: Data begin in 19271, Forecasts begin in 19651

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	19271–20084	0.32	0.0336	-0.34	0.0336	-0.97	-0.1977	-0.0160	-0.16	-0.68
d/y Dividend Yield	19271–20084	0.19	0.0264	-0.03	0.0264	-0.48	-0.1648	0.0038	0.05	0.16
e/p Earning Price Ratio	19271–20084	1.42**	0.0930	-0.93	0.0930	-2.80	-0.1805	-0.0908	-0.58	-3.81
d/e Dividend Payout Ratio	19271–20084	-0.02	0.0155	-0.46	0.0155	-4.05	-0.0895	-0.1415	-1.99	-5.88
svar Stock Variance	19271–20084	-0.30	0.0003	-0.53	0.0003	-0.72	-0.0044	-0.0058	-0.70	-0.25
b/m Book to Market	19271–20084	1.49**	0.0965	-3.40	0.0965	-8.47	-0.4291	-0.3179	-1.68	-12.80
ntis Net Equity Expansion	19271–20084	1.55**	0.0999	-2.66	0.0999	-7.51	0.0089	-0.2799	-1.55	-11.35
tbl T-Bill Rate	19271–20084	-0.08	0.0123	-0.46	0.0123	-1.58	-0.0656	-0.0410	-0.30	-1.74
lty Long Term Yield	19271–20084	-0.22	0.0049	-0.85	0.0049	-3.39	-0.1204	-0.1149	-0.65	-4.80
ltr Long Term Return	19271–20084	0.33	0.0341	1.82	0.0341	0.14	0.0739	0.0292	0.36	1.25*
tms Term Spread	19271–20084	-0.08	0.0120	0.51	0.0120	-0.76	0.0270	-0.0075	-0.10	-0.32
dfy Default Yield Spread	19271–20084	-0.22	0.0044	-0.43	0.0044	-0.52	-0.0184	0.0025	0.12	0.10
dfr Default Return Spread	19271–20084	-0.21	0.0051	0.89	0.0051	-5.32	-0.0938	-0.1926	-2.12	-7.93
infl Inflation	19271–20084	-0.17	0.0074	-0.15	0.0074	-0.42	-0.0052	0.0063	0.26	0.27
i/k Invstmnt Capital Ratio	19471–20084	2.17**	0.1005	-0.08	0.1005	-0.20	-0.0552	0.0168	0.13	0.67*
cayp Cnsmptn, Wlth, Incme	19521–20084	4.58***	0.2014	4.41	0.2014	2.70	0.1704	0.1433	0.78**	5.15***
caya Cnsmptn, Wlth, Incme	19521–20084	—	—	—	—	-10.36	-0.3015	-0.3962	-1.43	-12.97
all Kitchen Sink	19271–20084	4.52***	0.4241	-1.14	0.4241	-31.93	-0.9433	-0.9243	-3.28	-33.65
ms Model Selection	19271–20084	—	—	—	—	—	—	—	—	—

Table 4: Forecasts at Annual Frequency

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the annual frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500. Panel A uses the full sample period for each variable and constructs first forecast 20 years after the first data observation. Panel B uses the full sample period for each variable and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). Panel C uses only the sample period 1927 to 2008 and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). The data period for **ms** model is 1927 to 2008. All numbers, except \overline{R}^2 , are in percent per year. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Full data, Forecasts begin 20 years after the first sample date

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\bar{R}^2	Δ RMSE	\bar{R}^2	Δ RMSE	\bar{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–2008	1.27	0.1828	2.38	0.1828	-1.21	-0.1359	-0.0321	-0.15	-0.40
d/y Dividend Yield	1872–2008	1.83*	0.2339	2.89	0.2339	-0.93	-0.1200	-0.0059	-0.02	-0.07
e/p Earning Price Ratio	1872–2008	1.74*	0.2256	1.92	0.2256	-0.95	-0.1518	-0.0075	-0.04	-0.09
d/e Dividend Payout Ratio	1872–2008	-0.74	0.0009	-0.77	0.0009	-4.16	-0.2856	-0.3061	-2.31	-3.69
svar Stock Variance	1885–2008	-0.73	0.0087	-0.97	0.0087	-25.28	-0.8601	-2.2246	-1.34	-20.18
b/m Book to Market	1921–2008	4.55**	0.5528	3.32	0.5528	1.02	0.3281	0.2112	0.34*	1.74**
ntis Net Equity Expansion	1927–2008	2.57*	0.3738	-8.22	0.3738	-14.82	0.0634	-1.0564	-1.22	-7.10
eqjs Pct Equity Issuing	1927–2008	5.66**	0.6797	-1.70	0.6797	-3.44	-0.0298	-0.1460	-0.22	-1.06
tbl T-Bill Rate	1920–2008	0.07	0.1165	0.56	0.1165	-3.35	-0.4170	-0.1532	-0.26	-1.24
lty Long Term Yield	1919–2008	-0.74	0.0387	-0.74	0.0387	-6.95	-0.9417	-0.4449	-0.59	-3.58
ltr Long Term Return	1926–2008	0.47	0.1673	-0.60	0.1673	-10.78	-0.7784	-0.7386	-0.99	-5.20
tms Term Spread	1920–2008	0.06	0.1158	0.14	0.1158	-2.27	-0.0768	-0.0642	-0.18	-0.52
dfy Default Yield Spread	1919–2008	-1.13	0.0017	-1.50	0.0017	-2.95	-0.1351	-0.1215	-1.38	-1.01
dfr Default Return Spread	1926–2008	-1.02	0.0222	-1.72	0.0222	-5.63	-0.0239	-0.3261	-0.72	-2.38
infl Inflation	1919–2008	-0.91	0.0232	-1.52	0.0232	-3.53	-0.2372	-0.1685	-1.34	-1.39
i/k Invstmnt Capital Ratio	1947–2008	5.73**	0.6241	-1.28	0.6241	-1.23	-0.7089	0.1096	0.12	0.53
cayp Cnsmptn, Wlth, Incme	1945–2008	9.68***	0.9520	10.89	0.9520	8.49	0.8654	0.9596	1.29***	5.23***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	-7.93	-0.0227	-0.4699	-0.56	-2.26
all Kitchen Sink	1927–2008	13.13**	2.7492	2.45	2.7492	-119.88	-4.8104	-5.5426	-2.93	-26.90
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Panel B: Full data, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–2008	1.27	0.1828	1.59	0.1828	-0.75	-0.4173	0.1363	0.24	0.71
d/y Dividend Yield	1872–2008	1.83*	0.2339	2.05	0.2339	-2.57	-0.5381	-0.0155	-0.02	-0.08
e/p Earning Price Ratio	1872–2008	1.74*	0.2256	1.87	0.2256	1.28	-0.0080	0.3062	0.59	1.63**
d/e Dividend Payout Ratio	1872–2008	-0.74	0.0009	-2.37	0.0009	-4.54	-0.1162	-0.1778	-2.02	-0.91
svar Stock Variance	1885–2008	-0.73	0.0087	-2.18	0.0087	-2.24	0.0292	0.0114	0.38	0.06
b/m Book to Market	1921–2008	4.55**	0.5528	-4.44	0.5528	-6.50	-0.3039	-0.3483	-0.40	-1.70
ntis Net Equity Expansion	1927–2008	2.57*	0.3738	-7.04	0.3738	-19.70	0.2015	-1.4033	-1.20	-6.37
eqis Pct Equity Issuing	1927–2008	5.66**	0.6797	-1.65	0.6797	-7.86	-0.2311	-0.4556	-0.50	-2.23
tbl T-Bill Rate	1920–2008	0.07	0.1165	-4.40	0.1165	-4.68	-0.6007	-0.1948	-0.22	-0.97
lty Long Term Yield	1919–2008	-0.74	0.0387	-4.89	0.0387	-10.52	-1.3432	-0.6766	-0.59	-3.24
ltr Long Term Return	1926–2008	0.47	0.1673	-0.43	0.1673	-15.72	-1.0681	-1.0950	-1.20	-5.07
tms Term Spread	1920–2008	0.06	0.1158	1.02	0.1158	-2.75	-0.0881	-0.0316	-0.06	-0.16
dfy Default Yield Spread	1919–2008	-1.13	0.0017	-2.15	0.0017	-3.61	-0.1061	-0.1034	-1.82	-0.52
dfr Default Return Spread	1926–2008	-1.02	0.0222	-2.66	0.0222	-7.48	-0.0262	-0.4264	-0.72	-2.09
infl Inflation	1919–2008	-0.91	0.0232	-2.48	0.0232	-3.01	-0.1627	-0.0530	-0.42	-0.27
i/k Invstmnt Capital Ratio	1947–2008	5.73**	0.6241	-1.28	0.6241	-1.23	-0.7089	0.1096	0.12	0.53
cayp Cnsmptn, Wlth, Incme	1945–2008	9.68***	0.9520	10.89	0.9520	8.49	0.8654	0.9596	1.29***	5.23***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	-7.93	-0.0227	-0.4699	-0.56	-2.26
all Kitchen Sink	1927–2008	13.13**	2.7492	-19.63	2.7492	-142.95	-4.8085	-5.5836	-2.69	-18.88
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Panel C: Data begin in 1927, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	1927–2008	2.95*	0.4116	1.76	0.4116	1.46	-0.3512	0.3265	0.43*	1.71**
d/y Dividend Yield	1927–2008	4.19**	0.5338	1.70	0.5338	-1.65	-0.4883	0.0616	0.05	0.32
e/p Earning Price Ratio	1927–2008	4.36**	0.5504	1.08	0.5504	0.56	-0.2183	0.2502	0.30	1.30*
d/e Dividend Payout Ratio	1927–2008	-1.26	0.0002	-2.38	0.0002	-8.61	-0.2493	-0.5171	-2.09	-2.52
svar Stock Variance	1927–2008	-1.26	0.0002	-2.35	0.0002	-3.11	-0.0681	-0.0613	-1.89	-0.31
b/m Book to Market	1927–2008	5.56**	0.6700	-5.38	0.6700	-11.53	-0.8106	-0.7546	-0.74	-3.61
ntis Net Equity Expansion	1927–2008	2.57*	0.3738	-7.04	0.3738	-19.70	0.2015	-1.4033	-1.20	-6.37
eqis Pct Equity Issuing	1927–2008	5.66**	0.6797	-1.65	0.6797	-7.86	-0.2311	-0.4556	-0.50	-2.23
tbl T-Bill Rate	1927–2008	-0.11	0.1116	-4.24	0.1116	-8.91	-1.0916	-0.5423	-0.47	-2.64
lty Long Term Yield	1927–2008	-1.03	0.0232	-4.18	0.0232	-13.22	-1.6532	-0.8912	-0.72	-4.21
ltr Long Term Return	1927–2008	0.41	0.1620	-0.40	0.1620	-14.03	-0.9171	-0.9558	-1.14	-4.50
tms Term Spread	1927–2008	0.73	0.1940	1.11	0.1940	-2.47	-0.0107	-0.0071	-0.01	-0.04
dfy Default Yield Spread	1927–2008	-1.25	0.0012	-2.19	0.0012	-3.36	-0.0825	-0.0827	-1.76	-0.42
dfr Default Return Spread	1927–2008	-1.06	0.0197	-2.62	0.0197	-7.27	-0.0467	-0.4070	-0.71	-2.00
infl Inflation	1927–2008	-1.04	0.0220	-2.56	0.0220	-6.68	-0.0507	-0.3584	-1.38	-1.77
i/k Invstmnt Capital Ratio	1947–2008	5.73**	0.6241	-1.28	0.6241	-1.23	-0.7089	0.1096	0.12	0.53
cayp Cnsmptn, Wlth, Incme	1945–2008	9.68***	0.9520	10.89	0.9520	8.49	0.8654	0.9596	1.29***	5.23***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	-7.93	-0.0227	-0.4699	-0.56	-2.26
all Kitchen Sink	1927–2008	13.13**	2.7492	-19.63	2.7492	-142.95	-4.8085	-5.5836	-2.69	-18.88
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Table 5: Forecasts at 3-year Frequency

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the 3-year frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500. Panel A uses the full sample period for each variable and constructs first forecast 20 years after the first data observation. Panel B uses the full sample period for each variable and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). Panel C uses only the sample period 1927 to 2008 and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). The data period for **ms** model is 1927 to 2008. All numbers, except \overline{R}^2 , are in percent per 3-year. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Full data, Forecasts begin 20 years after the first sample date

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–2008	4.36**	0.7614	7.08	0.7614	-1.57	-0.8826	-0.1071	-0.09	-0.79
d/y Dividend Yield	1872–2008	3.22*	0.5894	5.42	0.5894	-4.30	-1.5142	-0.5196	-0.45	-3.78
e/p Earning Price Ratio	1872–2008	4.91**	0.8445	5.77	0.8445	0.57	-0.4379	0.2207	0.27*	1.66**
d/e Dividend Payout Ratio	1872–2008	-0.69	0.0093	-0.54	0.0093	-5.28	-0.5711	-0.6667	-3.16	-4.81
svar Stock Variance	1885–2008	-0.28	0.0820	-0.65	0.0820	-81.15	-3.4971	-10.7970	-1.34	-45.14
b/m Book to Market	1921–2008	8.57*	1.6261	1.08	1.6261	-14.23	-2.0985	-1.6803	-0.57	-7.34
ntis Net Equity Expansion	1927–2008	11.87***	2.1938	-12.28	2.1938	-12.91	-1.8027	-1.4727	-1.66	-5.97
eqis Pct Equity Issuing	1927–2008	10.83	2.0149	-12.52	2.0149	-19.82	-2.1556	-2.3426	-1.23	-9.09
tbl T-Bill Rate	1920–2008	1.66*	0.4637	5.13	0.4637	-7.67	-1.5900	-0.8221	-0.57	-3.84
lty Long Term Yield	1919–2008	-0.35	0.1330	1.24	0.1330	-22.00	-2.8908	-2.6581	-1.20	-11.44
ltr Long Term Return	1926–2008	-1.03	0.0413	-1.82	0.0413	-11.14	-1.1978	-1.2484	-2.33	-5.22
tms Term Spread	1920–2008	2.38*	0.5822	0.22	0.5822	-13.03	-0.6220	-1.5170	-1.05	-6.84
dfy Default Yield Spread	1919–2008	0.26	0.2314	-4.05	0.2314	-21.03	-2.0543	-2.5369	-1.84	-10.99
dfr Default Return Spread	1926–2008	-1.27	0.0015	-1.72	0.0015	-2.79	-0.0400	-0.1537	-1.01	-0.68
infl Inflation	1919–2008	-1.16	0.0028	-1.66	0.0028	-6.17	-0.2816	-0.6302	-1.30	-3.01
i/k Invstmnt Capital Ratio	1947–2008	17.25***	2.5936	7.40	2.5936	11.57	1.3699	2.1535	0.97**	6.37***
cayp Cnsmptn, Wlth, Incme	1945–2008	39.52***	5.9677	56.40	5.9677	38.01	4.2299	6.5241	2.53***	27.37***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	10.56	-0.0141	1.9216	0.63**	6.08***
all Kitchen Sink	1927–2008	35.58***	8.5364	7.40	8.5364	-201.66	-12.2135	-15.2299	-2.01	-35.24
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Panel B: Full data, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–2008	4.36**	0.7614	4.89	0.7614	-11.06	-1.4148	-1.0756	-0.31	-3.28
d/y Dividend Yield	1872–2008	3.22*	0.5894	2.69	0.5894	-16.16	-2.3803	-1.6894	-0.57	-4.98
e/p Earning Price Ratio	1872–2008	4.91**	0.8445	0.16	0.8445	-3.40	-1.0688	-0.1290	-0.06	-0.41
d/e Dividend Payout Ratio	1872–2008	-0.69	0.0093	-1.93	0.0093	-7.83	-0.4405	-0.6813	-1.41	-2.12
svar Stock Variance	1885–2008	-0.28	0.0820	-2.57	0.0820	-2.28	0.0755	0.0132	0.05	0.04
b/m Book to Market	1921–2008	8.57*	1.6261	-21.66	1.6261	-46.27	-6.3474	-5.4542	-1.47	-12.60
ntis Net Equity Expansion	1927–2008	11.87***	2.1938	-3.40	2.1938	-21.67	-2.7148	-2.4235	-2.26	-6.66
eqis Pct Equity Issuing	1927–2008	10.83	2.0149	-9.90	2.0149	-27.28	-2.5649	-3.0916	-1.17	-8.22
tbl T-Bill Rate	1920–2008	1.66*	0.4637	-8.95	0.4637	-5.30	-1.8305	-0.3963	-0.20	-1.17
lty Long Term Yield	1919–2008	-0.35	0.1330	-8.78	0.1330	-17.12	-3.4371	-1.9362	-0.75	-5.29
ltr Long Term Return	1926–2008	-1.03	0.0413	-0.26	0.0413	-7.11	-0.5978	-0.6174	-1.26	-1.85
tms Term Spread	1920–2008	2.38*	0.5822	4.72	0.5822	-0.49	1.1580	0.2589	0.25	0.79*
dfy Default Yield Spread	1919–2008	0.26	0.2314	-1.91	0.2314	-0.49	0.2167	0.2576	0.54*	0.79*
dfr Default Return Spread	1926–2008	-1.27	0.0015	-2.42	0.0015	-3.66	-0.0196	-0.1683	-0.76	-0.52
infl Inflation	1919–2008	-1.16	0.0028	-2.51	0.0028	-4.76	-0.3220	-0.3216	-2.19	-0.95
i/k Invstmnt Capital Ratio	1947–2008	17.25***	2.5936	7.40	2.5936	11.57	1.3699	2.1535	0.97**	6.37***
cayp Cnsmptn, Wlth, Incme	1945–2008	39.52***	5.9677	56.40	5.9677	38.01	4.2299	6.5241	2.53***	27.37***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	10.56	-0.0141	1.9216	0.63**	6.08***
all Kitchen Sink	1927–2008	35.58***	8.5364	-24.81	8.5364	-356.84	-18.7186	-21.9091	-2.43	-29.25
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Panel C: Data begin in 1927, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	1927–2008	10.24***	1.9137	2.90	1.9137	-15.74	-1.8946	-1.7003	-0.33	-4.85
d/y Dividend Yield	1927–2008	7.88**	1.5132	0.23	1.5132	-28.49	-3.6085	-3.2343	-0.70	-8.53
e/p Earning Price Ratio	1927–2008	8.44**	1.6070	-3.45	1.6070	-13.18	-2.8911	-1.3826	-0.45	-4.01
d/e Dividend Payout Ratio	1927–2008	-0.10	0.1928	-0.48	0.1928	-5.35	-0.3547	-0.3875	-1.01	-1.18
svar Stock Variance	1927–2008	-0.92	0.0608	-2.52	0.0608	-2.38	-0.0071	0.0008	0.00	0.00
b/m Book to Market	1927–2008	12.29**	2.2666	-27.49	2.2666	-81.83	-9.7511	-8.9448	-1.86	-18.35
ntis Net Equity Expansion	1927–2008	11.87***	2.1938	-3.40	2.1938	-21.67	-2.7148	-2.4235	-2.26	-6.66
eqis Pct Equity Issuing	1927–2008	10.83	2.0149	-9.90	2.0149	-27.28	-2.5649	-3.0916	-1.17	-8.22
tbl T-Bill Rate	1927–2008	1.54	0.4609	-8.52	0.4609	-38.39	-5.4889	-4.3728	-1.35	-10.93
lty Long Term Yield	1927–2008	-0.93	0.0599	-6.34	0.0599	-36.30	-5.1033	-4.1361	-1.20	-10.45
ltr Long Term Return	1927–2008	-1.06	0.0377	-0.34	0.0377	-7.80	-0.7601	-0.7029	-1.46	-2.11
tms Term Spread	1927–2008	5.23**	1.0690	3.19	1.0690	-6.56	0.2535	-0.5429	-0.40	-1.65
dfy Default Yield Spread	1927–2008	-0.51	0.1268	-1.92	0.1268	-1.90	0.1568	0.0633	0.19	0.20
dfr Default Return Spread	1927–2008	-1.29	0.0007	-2.44	0.0007	-3.69	-0.0013	-0.1709	-0.84	-0.53
infl Inflation	1927–2008	-0.89	0.0657	-2.82	0.0657	-9.43	-1.0541	-0.9099	-2.32	-2.70
i/k Invstmnt Capital Ratio	1947–2008	17.25***	2.5936	7.40	2.5936	11.57	1.3699	2.1535	0.97**	6.37***
cayp Cnsmptn, Wlth, Incme	1945–2008	39.52***	5.9677	56.40	5.9677	38.01	4.2299	6.5241	2.53***	27.37***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	10.56	-0.0141	1.9216	0.63**	6.08***
all Kitchen Sink	1927–2008	35.58***	8.5364	-24.81	8.5364	-356.84	-18.7186	-21.9091	-2.43	-29.25
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Table 6: Forecasts at 5-year Frequency

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the 5-year frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500. Panel A uses the full sample period for each variable and constructs first forecast 20 years after the first data observation. Panel B uses the full sample period for each variable and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). Panel C uses only the sample period 1927 to 2008 and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). The data period for **ms** model is 1927 to 2008. All numbers, except \overline{R}^2 , are in percent per 5-years. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Full data, Forecasts begin 20 years after the first sample date

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\bar{R}^2	$\Delta RMSE$	\bar{R}^2	$\Delta RMSE$	\bar{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–2008	9.78***	1.9739	13.78	1.9739	-1.50	-0.3847	-0.1214	-0.04	-0.70
d/y Dividend Yield	1872–2008	5.17**	1.0966	7.88	1.0966	-5.02	-0.5336	-0.7930	-0.35	-4.46
e/p Earning Price Ratio	1872–2008	5.65**	1.1881	5.84	1.1881	-1.24	-0.1294	-0.0721	-0.05	-0.42
d/e Dividend Payout Ratio	1872–2008	1.07	0.3370	2.99	0.3370	-4.47	-0.5468	-0.6904	-0.57	-3.90
svar Stock Variance	1885–2008	0.40	0.2325	-0.34	0.2325	-77.72	-4.8007	-13.0125	-1.22	-43.18
b/m Book to Market	1921–2008	11.45**	2.6007	3.54	2.6007	-10.68	-1.9021	-1.6260	-0.34	-5.30
ntis Net Equity Expansion	1927–2008	5.62**	1.3559	-8.42	1.3559	-4.50	-0.6184	-0.5308	-0.45	-1.57
eqis Pct Equity Issuing	1927–2008	7.41*	1.7144	-6.04	1.7144	-5.50	-0.4059	-0.7165	-0.35	-2.11
tbl T-Bill Rate	1920–2008	2.90*	0.8265	9.91	0.8265	-18.19	-3.6689	-2.8862	-0.58	-9.18
lty Long Term Yield	1919–2008	-0.11	0.2169	3.25	0.2169	-116.85	-15.2567	-16.7810	-2.17	-35.12
ltr Long Term Return	1926–2008	-1.31	0.0007	-1.71	0.0007	-7.16	-2.7449	-1.0637	-0.77	-3.04
tms Term Spread	1920–2008	4.46*	1.1430	4.99	1.1430	-31.28	-3.0159	-5.0074	-0.96	-14.75
dfy Default Yield Spread	1919–2008	3.70*	0.9808	-3.90	0.9808	-56.42	-6.5165	-8.7780	-1.58	-23.19
dfr Default Return Spread	1926–2008	-1.14	0.0339	-1.22	0.0339	-5.06	-0.2133	-0.6636	-1.38	-1.92
infl Inflation	1919–2008	-1.18	0.0048	-1.71	0.0048	-10.81	-1.2496	-1.6345	-1.74	-5.56
i/k Invstmnt Capital Ratio	1947–2008	29.89***	5.8946	20.93	5.8946	10.38	3.2382	2.7344	0.73**	5.46***
cayp Cnsmptn, Wlth, Incme	1945–2008	35.35***	6.9893	62.59	6.9893	29.92	6.1707	7.2904	2.92***	18.44***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	11.48	3.8530	2.9626	0.84**	6.26***
all Kitchen Sink	1927–2008	40.22***	11.2877	41.70	11.2877	-474.19	-33.1824	-43.9816	-2.19	-45.43
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Panel B: Full data, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–2008	9.78***	1.9739	7.64	1.9739	-25.64	-0.7524	-3.5056	-0.49	-7.40
d/y Dividend Yield	1872–2008	5.17**	1.0966	5.02	1.0966	-18.23	-0.0764	-2.4273	-0.39	-5.36
e/p Earning Price Ratio	1872–2008	5.65**	1.1881	-0.09	1.1881	-3.69	-0.4123	-0.2078	-0.06	-0.51
d/e Dividend Payout Ratio	1872–2008	1.07	0.3370	1.46	0.3370	0.59	0.0085	0.4753	0.48	1.20*
svar Stock Variance	1885–2008	0.40	0.2325	-2.49	0.2325	-2.01	0.3856	0.0598	0.09	0.15
b/m Book to Market	1921–2008	11.45**	2.6007	-20.64	2.6007	-40.41	-6.7177	-6.2927	-0.98	-10.83
ntis Net Equity Expansion	1927–2008	5.62**	1.3559	-0.17	1.3559	-14.79	-2.1018	-2.1176	-1.86	-4.32
eqis Pct Equity Issuing	1927–2008	7.41*	1.7144	-0.81	1.7144	-10.61	-1.1020	-1.4186	-0.49	-2.98
tbl T-Bill Rate	1920–2008	2.90*	0.8265	-12.07	0.8265	-30.18	-5.6270	-4.7261	-0.61	-8.54
lty Long Term Yield	1919–2008	-0.11	0.2169	-12.83	0.2169	-67.54	-10.5668	-10.2984	-1.07	-15.56
ltr Long Term Return	1926–2008	-1.31	0.0007	-2.22	0.0007	-17.75	-3.2599	-2.5583	-1.83	-5.22
tms Term Spread	1920–2008	4.46*	1.1430	14.40	1.1430	0.72	0.6688	0.5644	0.20	1.25*
dfy Default Yield Spread	1919–2008	3.70*	0.9808	2.56	0.9808	5.22	1.3840	1.3962	1.07**	3.21**
dfr Default Return Spread	1926–2008	-1.14	0.0339	-2.14	0.0339	-2.98	0.2591	-0.1039	-0.28	-0.23
infl Inflation	1919–2008	-1.18	0.0048	-2.72	0.0048	-6.90	-0.6331	-0.8047	-1.46	-1.69
i/k Invstmnt Capital Ratio	1947–2008	29.89***	5.8946	20.93	5.8946	10.38	3.2382	2.7344	0.73**	5.46***
cayp Cnsmptn, Wlth, Incme	1945–2008	35.35***	6.9893	62.59	6.9893	29.92	6.1707	7.2904	2.92***	18.44***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	11.48	3.8530	2.9626	0.84**	6.26***
all Kitchen Sink	1927–2008	40.22***	11.2877	18.97	11.2877	-402.67	-27.7064	-32.5111	-1.99	-28.96
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Panel C: Data begin in 1927, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	1927–2008	20.38***	4.4130	3.58	4.4130	-13.16	-0.5295	-1.8469	-0.22	-3.81
d/y Dividend Yield	1927–2008	12.89***	2.8295	1.81	2.8295	-13.27	-0.0510	-1.8646	-0.24	-3.84
e/p Earning Price Ratio	1927–2008	13.33***	2.9208	-6.81	2.9208	-15.50	-2.8997	-2.2359	-0.37	-4.54
d/e Dividend Payout Ratio	1927–2008	2.53*	0.7482	2.91	0.7482	-0.07	0.2766	0.4088	0.44*	0.92*
svar Stock Variance	1927–2008	-0.73	0.1150	-2.44	0.1150	-3.45	0.0592	-0.1879	-0.47	-0.41
b/m Book to Market	1927–2008	14.36**	3.1347	-22.70	3.1347	-53.51	-8.0112	-8.0769	-1.10	-13.32
ntis Net Equity Expansion	1927–2008	5.62**	1.3559	-0.17	1.3559	-14.79	-2.1018	-2.1176	-1.86	-4.32
eqis Pct Equity Issuing	1927–2008	7.41*	1.7144	-0.81	1.7144	-10.61	-1.1020	-1.4186	-0.49	-2.98
tbl T-Bill Rate	1927–2008	3.85	1.0076	-12.72	1.0076	-62.78	-6.7370	-9.3877	-0.73	-14.84
lty Long Term Yield	1927–2008	-0.27	0.2049	-11.92	0.2049	-118.89	-13.3248	-16.6280	-1.17	-21.29
ltr Long Term Return	1927–2008	-1.32	0.0024	-1.92	0.0024	-12.76	-2.5078	-1.7803	-1.71	-3.68
tms Term Spread	1927–2008	7.92**	1.8156	14.49	1.8156	1.00	1.1075	0.5999	0.14	1.37*
dfy Default Yield Spread	1927–2008	1.07	0.4640	1.43	0.4640	0.83	0.8229	0.5689	0.80**	1.30*
dfr Default Return Spread	1927–2008	-1.10	0.0446	-2.12	0.0446	-3.03	0.3754	-0.1140	-0.27	-0.25
infl Inflation	1927–2008	-1.10	0.0445	-2.55	0.0445	-12.20	-1.5682	-1.6854	-1.44	-3.50
i/k Invstmnt Capital Ratio	1947–2008	29.89***	5.8946	20.93	5.8946	10.38	3.2382	2.7344	0.73**	5.46***
cayp Cnsmptn, Wlth, Incme	1945–2008	35.35***	6.9893	62.59	6.9893	29.92	6.1707	7.2904	2.92***	18.44***
caya Cnsmptn, Wlth, Incme	1945–2008	—	—	—	—	11.48	3.8530	2.9626	0.84**	6.26***
all Kitchen Sink	1927–2008	40.22***	11.2877	18.97	11.2877	-402.67	-27.7064	-32.5111	-1.99	-28.96
ms Model Selection	1927–2008	—	—	—	—	—	—	—	—	—

Table 7: Forecasts Using Various d/p , e/p , and d/e Ratios

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at various frequencies. Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500 (monthly panel uses CRSP data for calculation of stock returns). All numbers, except \bar{R}^2 , are in percent per frequency corresponding to the panel. A star next to IS- \bar{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) t -statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is F -statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Forecasting monthly return with total returns

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	192701–200812	0.75***	0.0237	-0.09	0.0237	-0.46	-0.0515	-0.0060	-0.19	-1.43
e/p Earning(3Y) Price Ratio	192701–200812	0.24*	0.0096	-0.33	0.0096	-0.34	-0.0416	-0.0033	-0.17	-0.79
e/p Earning(5Y) Price Ratio	192701–200812	0.35**	0.0125	-0.39	0.0125	-0.47	-0.0542	-0.0062	-0.27	-1.48
e/p Earning(10Y) Price Ratio	192701–200812	0.56**	0.0183	-0.28	0.0183	-0.55	-0.0672	-0.0079	-0.27	-1.90
d/p Dividend(1Y) Price Ratio	192701–200812	0.23*	0.0092	0.03	0.0092	0.11	-0.0373	0.0066	0.35	1.60**
d/p Dividend(3Y) Price Ratio	192701–200812	0.32**	0.0117	0.05	0.0117	0.19	-0.0389	0.0083	0.41	1.99**
d/p Dividend(5Y) Price Ratio	192701–200812	0.42**	0.0146	0.08	0.0146	0.15	-0.0470	0.0074	0.32	1.78**
d/p Dividend(10Y) Price Ratio	192701–200812	0.37**	0.0132	0.09	0.0132	0.21	-0.0425	0.0088	0.42*	2.13**
d/e Dividend(1Y) Earning(1Y) Ratio	192701–200812	0.02	0.0034	-0.11	0.0034	-1.83	-0.0242	-0.0358	-2.57	-8.51
d/e Dividend(1Y) Earning(3Y) Ratio	192701–200812	-0.08	0.0006	-0.02	0.0006	-1.12	-0.0154	-0.0203	-2.08	-4.86
d/e Dividend(1Y) Earning(5Y) Ratio	192701–200812	-0.10	0.0000	-0.19	0.0000	-1.47	-0.0185	-0.0279	-2.45	-6.65
d/e Dividend(1Y) Earning(10Y) Ratio	192701–200812	-0.02	0.0022	-0.44	0.0022	-1.56	-0.0139	-0.0300	-2.25	-7.14
d/e Dividend(3Y) Earning(3Y) Ratio	192701–200812	0.02	0.0035	0.12	0.0035	-0.07	-0.0050	0.0025	0.57*	0.61
d/e Dividend(5Y) Earning(5Y) Ratio	192701–200812	0.09	0.0054	0.26	0.0054	0.15	-0.0046	0.0075	1.05**	1.81**
d/e Dividend(10Y) Earning(10Y) Ratio	192701–200812	-0.07	0.0009	-0.10	0.0009	-0.81	-0.0099	-0.0135	-2.67	-3.23

Panel B: Forecasting 1 year return - Forecast begins 1902

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882–2008	1.94*	0.2519	1.92	0.2519	-2.40	-0.2080	-0.1397	-0.52	-1.52
e/p Earning(3Y) Price Ratio	1882–2008	3.04**	0.3539	3.23	0.3539	-0.32	0.2213	0.0614	0.17*	0.68*
e/p Earning(5Y) Price Ratio	1882–2008	3.46**	0.3934	3.82	0.3934	0.25	0.0349	0.1166	0.30*	1.29**
e/p Earning(10Y) Price Ratio	1882–2008	5.91***	0.6231	6.97	0.6231	3.27	0.1259	0.4125	0.76**	4.68***
d/p Dividend(1Y) Price Ratio	1882–2008	2.27*	0.2832	2.88	0.2832	-0.67	-0.0607	0.0274	0.07*	0.30*
d/p Dividend(3Y) Price Ratio	1882–2008	2.89**	0.3407	3.80	0.3407	-0.38	-0.1183	0.0552	0.13*	0.61*
d/p Dividend(5Y) Price Ratio	1882–2008	3.64**	0.4099	4.64	0.4099	0.70	-0.2371	0.1600	0.32*	1.78**
d/p Dividend(10Y) Price Ratio	1882–2008	3.32**	0.3807	4.64	0.3807	0.23	-0.3599	0.1144	0.23*	1.27**
d/e Dividend(1Y) Earning(1Y) Ratio	1882–2008	-0.62	0.0169	-0.50	0.0169	-3.34	-0.3225	-0.2290	-1.00	-2.47
d/e Dividend(1Y) Earning(3Y) Ratio	1882–2008	-0.76	0.0042	-0.78	0.0042	-4.76	-0.0707	-0.3642	-2.00	-3.89
d/e Dividend(1Y) Earning(5Y) Ratio	1882–2008	-0.80	0.0002	-0.93	0.0002	-5.96	-0.3379	-0.4776	-1.68	-5.06
d/e Dividend(1Y) Earning(10Y) Ratio	1882–2008	0.45	0.1151	0.36	0.1151	-2.61	0.0340	-0.1597	-0.29	-1.73
d/e Dividend(3Y) Earning(3Y) Ratio	1882–2008	-0.45	0.0323	-0.13	0.0323	-4.12	-0.3579	-0.3031	-2.98	-3.25
d/e Dividend(5Y) Earning(5Y) Ratio	1882–2008	0.15	0.0873	0.80	0.0873	-3.50	-0.4059	-0.2447	-1.03	-2.64
d/e Dividend(10Y) Earning(10Y) Ratio	1882–2008	-0.79	0.0013	-0.87	0.0013	-6.14	-0.2502	-0.4943	-2.11	-5.23

Panel C: Forecasting 1 year return - Forecast begins 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882-2008	1.94*	0.2519	1.88	0.2519	1.42	0.0118	0.3194	0.59	1.70**
e/p Earning(3Y) Price Ratio	1882-2008	3.04**	0.3539	-0.42	0.3539	-0.78	-0.3048	0.1335	0.20	0.70
e/p Earning(5Y) Price Ratio	1882-2008	3.46**	0.3934	-0.74	0.3934	-1.78	-0.4660	0.0498	0.07	0.26
e/p Earning(10Y) Price Ratio	1882-2008	5.91***	0.6231	0.41	0.6231	-5.03	-0.8430	-0.2190	-0.20	-1.11
d/p Dividend(1Y) Price Ratio	1882-2008	2.27*	0.2832	1.80	0.2832	-1.25	-0.5899	0.0942	0.12	0.49
d/p Dividend(3Y) Price Ratio	1882-2008	2.89**	0.3407	1.96	0.3407	-2.00	-0.7289	0.0317	0.03	0.16
d/p Dividend(5Y) Price Ratio	1882-2008	3.64**	0.4099	2.21	0.4099	-3.26	-0.9579	-0.0727	-0.07	-0.37
d/p Dividend(10Y) Price Ratio	1882-2008	3.32**	0.3807	2.41	0.3807	-2.80	-0.9781	-0.0351	-0.04	-0.18
d/e Dividend(1Y) Earning(1Y) Ratio	1882-2008	-0.62	0.0169	-2.43	0.0169	-3.50	-0.2122	-0.0925	-0.69	-0.47
d/e Dividend(1Y) Earning(3Y) Ratio	1882-2008	-0.76	0.0042	-1.84	0.0042	-9.33	-0.0333	-0.5685	-1.68	-2.80
d/e Dividend(1Y) Earning(5Y) Ratio	1882-2008	-0.80	0.0002	-2.22	0.0002	-12.52	-0.0412	-0.8226	-1.85	-3.96
d/e Dividend(1Y) Earning(10Y) Ratio	1882-2008	0.45	0.1151	-5.27	0.1151	-16.85	0.1117	-1.1634	-1.65	-5.45
d/e Dividend(3Y) Earning(3Y) Ratio	1882-2008	-0.45	0.0323	-1.22	0.0323	-3.90	-0.1364	-0.1262	-1.55	-0.65
d/e Dividend(5Y) Earning(5Y) Ratio	1882-2008	0.15	0.0873	0.04	0.0873	-1.84	-0.1934	0.0449	0.21	0.23
d/e Dividend(10Y) Earning(10Y) Ratio	1882-2008	-0.79	0.0013	-2.19	0.0013	-9.97	-0.0832	-0.6195	-1.94	-3.04

Panel D: Forecasting 3 year return - Forecast begins 1902

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882-2008	6.18**	1.0379	6.35	1.0379	1.27	-0.5122	0.3488	0.38**	2.37**
e/p Earning(3Y) Price Ratio	1882-2008	7.13**	1.1817	7.91	1.1817	2.46	-0.3509	0.5360	0.46**	3.67**
e/p Earning(5Y) Price Ratio	1882-2008	9.88***	1.6011	11.14	1.6011	4.66	-0.1259	0.8876	0.59**	6.18***
e/p Earning(10Y) Price Ratio	1882-2008	12.93***	2.0752	15.31	2.0752	3.59	-0.5845	0.7164	0.33*	4.95***
d/p Dividend(1Y) Price Ratio	1882-2008	6.52**	1.0891	8.44	1.0891	-0.13	-1.0976	0.1283	0.08*	0.86*
d/p Dividend(3Y) Price Ratio	1882-2008	7.56**	1.2464	9.81	1.2464	0.20	-1.1966	0.1799	0.10*	1.21*
d/p Dividend(5Y) Price Ratio	1882-2008	8.62***	1.4074	11.24	1.4074	-0.21	-1.0639	0.1159	0.06*	0.78*
d/p Dividend(10Y) Price Ratio	1882-2008	6.91**	1.1485	9.97	1.1485	-5.44	-2.0995	-0.6922	-0.34	-4.47
d/e Dividend(1Y) Earning(1Y) Ratio	1882-2008	-0.60	0.0323	-0.24	0.0323	-6.99	-0.7015	-0.9266	-2.26	-5.92
d/e Dividend(1Y) Earning(3Y) Ratio	1882-2008	-0.50	0.0467	-0.05	0.0467	-12.19	-0.8867	-1.7053	-1.46	-10.52
d/e Dividend(1Y) Earning(5Y) Ratio	1882-2008	-0.78	0.0052	-1.09	0.0052	-6.96	-0.6949	-0.9227	-1.28	-5.90
d/e Dividend(1Y) Earning(10Y) Ratio	1882-2008	0.60	0.2072	0.15	0.2072	-6.91	-0.7233	-0.9152	-0.59	-5.85
d/e Dividend(3Y) Earning(3Y) Ratio	1882-2008	0.13	0.1390	1.08	0.1390	-10.20	-1.1435	-1.4103	-1.61	-8.81
d/e Dividend(5Y) Earning(5Y) Ratio	1882-2008	-0.03	0.1151	0.87	0.1151	-6.82	-0.9773	-0.9019	-1.57	-5.77
d/e Dividend(10Y) Earning(10Y) Ratio	1882-2008	-0.75	0.0105	-1.16	0.0105	-6.77	-0.5373	-0.8945	-1.86	-5.72

Panel E: Forecasting 3 year return - Forecast begins 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882-2008	6.18**	1.0379	-0.52	1.0379	-3.74	-1.2766	-0.1727	-0.08	-0.55
e/p Earning(3Y) Price Ratio	1882-2008	7.13**	1.1817	-1.54	1.1817	-8.50	-1.6143	-0.7674	-0.27	-2.37
e/p Earning(5Y) Price Ratio	1882-2008	9.88***	1.6011	-1.91	1.6011	-13.89	-1.9347	-1.4255	-0.38	-4.24
e/p Earning(10Y) Price Ratio	1882-2008	12.93***	2.0752	0.52	2.0752	-22.53	-2.4422	-2.4487	-0.51	-6.91
d/p Dividend(1Y) Price Ratio	1882-2008	6.52**	1.0891	4.60	1.0891	-14.56	-1.8371	-1.5067	-0.36	-4.47
d/p Dividend(3Y) Price Ratio	1882-2008	7.56**	1.2464	4.30	1.2464	-17.03	-2.1888	-1.8016	-0.42	-5.26
d/p Dividend(5Y) Price Ratio	1882-2008	8.62***	1.4074	4.96	1.4074	-18.77	-2.3869	-2.0079	-0.46	-5.79
d/p Dividend(10Y) Price Ratio	1882-2008	6.91**	1.1485	4.26	1.1485	-16.12	-2.3512	-1.6933	-0.45	-4.97
d/e Dividend(1Y) Earning(1Y) Ratio	1882-2008	-0.60	0.0323	-1.51	0.0323	-6.67	-0.3755	-0.5401	-1.53	-1.69
d/e Dividend(1Y) Earning(3Y) Ratio	1882-2008	-0.50	0.0467	-0.23	0.0467	-11.22	-0.8398	-1.1013	-1.74	-3.34
d/e Dividend(1Y) Earning(5Y) Ratio	1882-2008	-0.78	0.0052	-3.35	0.0052	-27.47	-1.8965	-3.0181	-1.82	-8.27
d/e Dividend(1Y) Earning(10Y) Ratio	1882-2008	0.60	0.2072	-6.44	0.2072	-24.33	-1.1911	-2.6573	-1.54	-7.41
d/e Dividend(3Y) Earning(3Y) Ratio	1882-2008	0.13	0.1390	0.19	0.1390	-2.55	-0.1128	-0.0217	-0.07	-0.07
d/e Dividend(5Y) Earning(5Y) Ratio	1882-2008	-0.03	0.1151	0.10	0.1151	-3.56	-0.2878	-0.1492	-0.61	-0.48
d/e Dividend(10Y) Earning(10Y) Ratio	1882-2008	-0.75	0.0105	-2.63	0.0105	-19.10	-1.4796	-2.0467	-1.95	-5.89

Panel F: Forecasting 5 year return - Forecast begins 1902

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882-2008	6.75**	1.4189	6.99	1.4189	1.76	-0.0971	0.5398	0.39**	2.84**
e/p Earning(3Y) Price Ratio	1882-2008	11.54***	2.3455	12.88	2.3455	3.94	0.3532	0.9802	0.44**	5.25***
e/p Earning(5Y) Price Ratio	1882-2008	16.16***	3.2621	18.27	3.2621	5.06	0.7627	1.2080	0.44**	6.53***
e/p Earning(10Y) Price Ratio	1882-2008	16.38***	3.3056	20.13	3.3056	-2.56	-0.3211	-0.3163	-0.09	-1.61
d/p Dividend(1Y) Price Ratio	1882-2008	11.69***	2.3741	14.73	2.3741	-1.19	-0.9542	-0.0464	-0.01	-0.24
d/p Dividend(3Y) Price Ratio	1882-2008	12.66***	2.5643	16.62	2.5643	-2.30	-0.6421	-0.2648	-0.08	-1.35
d/p Dividend(5Y) Price Ratio	1882-2008	13.39***	2.7083	17.85	2.7083	-3.97	-0.5305	-0.5919	-0.17	-2.99
d/p Dividend(10Y) Price Ratio	1882-2008	9.34***	1.9160	14.05	1.9160	-16.04	-2.3453	-2.8797	-0.74	-13.39
d/e Dividend(1Y) Earning(1Y) Ratio	1882-2008	1.07	0.3513	2.93	0.3513	-8.85	-1.3218	-1.5312	-1.04	-7.47
d/e Dividend(1Y) Earning(3Y) Ratio	1882-2008	-0.07	0.1401	0.86	0.1401	-21.99	-3.2900	-3.9629	-1.50	-17.76
d/e Dividend(1Y) Earning(5Y) Ratio	1882-2008	-0.83	0.0009	-1.05	0.0009	-9.10	-1.0430	-1.5805	-1.32	-7.70
d/e Dividend(1Y) Earning(10Y) Ratio	1882-2008	-0.75	0.0147	-0.92	0.0147	-11.42	-0.9596	-2.0178	-1.32	-9.67
d/e Dividend(3Y) Earning(3Y) Ratio	1882-2008	0.54	0.2521	2.16	0.2521	-13.46	-1.9649	-2.4013	-1.40	-11.36
d/e Dividend(5Y) Earning(5Y) Ratio	1882-2008	-0.23	0.1106	0.82	0.1106	-12.58	-2.0319	-2.2365	-2.19	-10.64
d/e Dividend(10Y) Earning(10Y) Ratio	1882-2008	-0.77	0.0116	-1.25	0.0116	-17.22	-2.6075	-3.0958	-2.87	-14.29

Panel G: Forecasting 5 year return - Forecast begins 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882-2008	6.75**	1.4189	-0.80	1.4189	-3.99	-0.5733	-0.2568	-0.07	-0.62
e/p Earning(3Y) Price Ratio	1882-2008	11.54***	2.3455	-0.31	2.3455	-9.74	-0.1931	-1.1573	-0.21	-2.68
e/p Earning(5Y) Price Ratio	1882-2008	16.16***	3.2621	-1.43	3.2621	-18.34	-0.2229	-2.4620	-0.38	-5.39
e/p Earning(10Y) Price Ratio	1882-2008	16.38***	3.3056	3.97	3.3056	-23.07	-0.3432	-3.1602	-0.41	-6.72
d/p Dividend(1Y) Price Ratio	1882-2008	11.69***	2.3741	6.99	2.3741	-29.33	-1.4883	-4.0632	-0.54	-8.34
d/p Dividend(3Y) Price Ratio	1882-2008	12.66***	2.5643	8.14	2.5643	-27.38	-1.1836	-3.7845	-0.51	-7.85
d/p Dividend(5Y) Price Ratio	1882-2008	13.39***	2.7083	8.24	2.7083	-29.35	-1.6870	-4.0662	-0.55	-8.34
d/p Dividend(10Y) Price Ratio	1882-2008	9.34***	1.9160	6.36	1.9160	-20.44	-1.0192	-2.7734	-0.41	-6.00
d/e Dividend(1Y) Earning(1Y) Ratio	1882-2008	1.07	0.3513	1.51	0.3513	0.78	0.1201	0.5101	0.57	1.27*
d/e Dividend(1Y) Earning(3Y) Ratio	1882-2008	-0.07	0.1401	0.51	0.1401	-7.24	-0.8344	-0.7690	-1.80	-1.81
d/e Dividend(1Y) Earning(5Y) Ratio	1882-2008	-0.83	0.0009	-2.94	0.0009	-30.45	-3.0610	-4.2216	-1.88	-8.61
d/e Dividend(1Y) Earning(10Y) Ratio	1882-2008	-0.75	0.0147	-3.29	0.0147	-12.68	-0.7994	-1.6091	-1.45	-3.66
d/e Dividend(3Y) Earning(3Y) Ratio	1882-2008	0.54	0.2521	0.73	0.2521	-1.26	-0.2209	0.1804	0.28	0.44
d/e Dividend(5Y) Earning(5Y) Ratio	1882-2008	-0.23	0.1106	-0.49	0.1106	-7.77	-0.8974	-0.8510	-2.34	-2.00
d/e Dividend(10Y) Earning(10Y) Ratio	1882-2008	-0.77	0.0116	-2.38	0.0116	-21.67	-2.2717	-2.9551	-1.96	-6.34

Panel H: Forecasting 10 year return - Forecast begins 1902

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882–2008	20.37***	5.3156	22.47	5.3156	-10.90	-2.3773	-2.6536	-0.50	-8.79
e/p Earning(3Y) Price Ratio	1882–2008	19.88***	5.1858	22.81	5.1858	-8.53	-1.8017	-2.0328	-0.38	-6.84
e/p Earning(5Y) Price Ratio	1882–2008	18.08***	4.7117	21.35	4.7117	-4.28	-0.8264	-0.9024	-0.19	-3.13
e/p Earning(10Y) Price Ratio	1882–2008	15.75***	4.1053	20.16	4.1053	-0.59	-0.4176	0.0997	0.03	0.36*
d/p Dividend(1Y) Price Ratio	1882–2008	14.08***	3.6740	19.45	3.6740	-0.74	-0.7855	0.0576	0.01	0.21*
d/p Dividend(3Y) Price Ratio	1882–2008	11.86***	3.1110	17.66	3.1110	-1.41	-0.7867	-0.1241	-0.03	-0.44
d/p Dividend(5Y) Price Ratio	1882–2008	10.77**	2.8355	16.67	2.8355	-0.95	-0.9202	0.0012	0.00	0.00
d/p Dividend(10Y) Price Ratio	1882–2008	9.43**	2.5003	15.70	2.5003	-8.74	-2.5219	-2.0877	-0.43	-7.02
d/e Dividend(1Y) Earning(1Y) Ratio	1882–2008	0.10	0.2291	-1.26	0.2291	-9.33	-1.9725	-2.2417	-1.91	-7.51
d/e Dividend(1Y) Earning(3Y) Ratio	1882–2008	0.06	0.2200	-1.43	0.2200	-16.75	-4.6202	-4.1594	-1.78	-13.26
d/e Dividend(1Y) Earning(5Y) Ratio	1882–2008	-0.42	0.1059	-1.53	0.1059	-11.10	-1.9350	-2.7047	-1.31	-8.95
d/e Dividend(1Y) Earning(10Y) Ratio	1882–2008	-0.86	0.0016	-1.08	0.0016	-4.25	0.4880	-0.8949	-0.70	-3.10
d/e Dividend(3Y) Earning(3Y) Ratio	1882–2008	0.02	0.2107	-1.51	0.2107	-12.60	-3.2140	-3.0945	-2.11	-10.14
d/e Dividend(5Y) Earning(5Y) Ratio	1882–2008	-0.30	0.1341	-1.77	0.1341	-16.84	-3.7510	-4.1811	-3.22	-13.32
d/e Dividend(10Y) Earning(10Y) Ratio	1882–2008	-0.79	0.0193	-1.50	0.0193	-75.41	-16.2244	-17.5468	-1.78	-41.60

Panel I: Forecasting 10 year return - Forecast begins 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
e/p Earning(1Y) Price Ratio	1882-2008	20.37***	5.3156	14.40	5.3156	16.51	1.1884	4.4701	0.64*	7.92***
e/p Earning(3Y) Price Ratio	1882-2008	19.88***	5.1858	16.18	5.1858	17.73	1.4749	4.7752	0.57	8.55***
e/p Earning(5Y) Price Ratio	1882-2008	18.08***	4.7117	17.05	4.7117	16.19	1.9783	4.3914	0.47	7.76***
e/p Earning(10Y) Price Ratio	1882-2008	15.75***	4.1053	20.75	4.1053	13.34	1.7297	3.6882	0.35	6.35***
d/p Dividend(1Y) Price Ratio	1882-2008	14.08***	3.6740	16.41	3.6740	-0.94	-0.6134	0.3245	0.02	0.50
d/p Dividend(3Y) Price Ratio	1882-2008	11.86***	3.1110	13.98	3.1110	-1.39	-1.2167	0.2242	0.02	0.34
d/p Dividend(5Y) Price Ratio	1882-2008	10.77**	2.8355	12.34	2.8355	-3.70	-2.1151	-0.2963	-0.02	-0.45
d/p Dividend(10Y) Price Ratio	1882-2008	9.43**	2.5003	9.27	2.5003	-15.99	-5.4084	-2.9681	-0.22	-4.11
d/e Dividend(1Y) Earning(1Y) Ratio	1882-2008	0.10	0.2291	-2.30	0.2291	-19.12	-3.2371	-3.6261	-1.12	-4.92
d/e Dividend(1Y) Earning(3Y) Ratio	1882-2008	0.06	0.2200	-2.12	0.2200	-30.66	-5.4493	-5.9799	-1.20	-7.58
d/e Dividend(1Y) Earning(5Y) Ratio	1882-2008	-0.42	0.1059	-2.14	0.1059	-19.26	-3.3941	-3.6548	-1.21	-4.95
d/e Dividend(1Y) Earning(10Y) Ratio	1882-2008	-0.86	0.0016	-2.80	0.0016	-4.48	-0.3325	-0.4712	-1.86	-0.70
d/e Dividend(3Y) Earning(3Y) Ratio	1882-2008	0.02	0.2107	-1.35	0.2107	-22.15	-3.8532	-4.2544	-1.17	-5.66
d/e Dividend(5Y) Earning(5Y) Ratio	1882-2008	-0.30	0.1341	-0.81	0.1341	-22.21	-3.9929	-4.2665	-1.37	-5.68
d/e Dividend(10Y) Earning(10Y) Ratio	1882-2008	-0.79	0.0193	-1.15	0.0193	-29.93	-6.3271	-5.8332	-2.94	-7.42

Table 8: Forecasts at Monthly Frequency with Alternative Procedures

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the monthly frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *excluding* dividends, of S&P500. Panel A uses the unadjusted betas (and is the same as Panel A of Table 1), Panel B corrects betas following Stambaugh (1999), and Panel C corrects betas following Lewellen (2004). All numbers, except \overline{R}^2 , are in percent per month. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) t -statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is F -statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Unadjusted betas

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	187102–200812	-0.05	0.0001	-0.04	0.0001	-0.56	-0.0060	-0.0122	-0.88	-6.84
d/y Dividend Yield	187102–200812	-0.01	0.0012	0.04	0.0012	-0.49	-0.0150	-0.0104	-1.17	-5.87
e/p Earning Price Ratio	187102–200812	0.16*	0.0053	0.16	0.0053	-0.05	-0.0119	0.0005	0.09*	0.29*
d/e Dividend Payout Ratio	187112–200812	0.17*	0.0055	-0.02	0.0055	-0.55	0.0023	-0.0120	-0.70	-6.68
svar Stock Variance	188502–200812	0.06	0.0031	0.07	0.0031	-1.32	-0.0033	-0.0321	-0.70	-15.30
csp Cross-Sectional Prem	193705–200212	0.66**	0.0185	0.37	0.0185	-1.27	-0.0595	-0.0233	-0.77	-5.86
b/m Book to Market	192103–200812	0.25*	0.0093	-0.08	0.0093	-0.63	-0.0366	-0.0105	-0.57	-4.06
ntis Net Equity Expansion	192701–200812	0.17	0.0075	-0.54	0.0075	-0.93	0.0048	-0.0165	-0.96	-5.85
tbl T-Bill Rate	192002–200812	0.07	0.0046	0.32	0.0046	-0.13	0.0042	-0.0001	-0.01	-0.05
lty Long Term Yield	191901–200812	-0.01	0.0022	0.05	0.0022	-0.76	-0.0049	-0.0140	-0.61	-5.37
ltr Long Term Return	192601–200812	0.07	0.0046	0.62	0.0046	-1.34	-0.0352	-0.0253	-1.90	-9.01
tms Term Spread	192002–200812	0.02	0.0032	0.19	0.0032	-0.05	0.0039	0.0015	0.14	0.59*
dfy Default Yield Spread	191901–200812	-0.09	0.0000	-0.13	0.0000	-0.36	-0.0067	-0.0053	-2.25	-2.04
dfr Default Return Spread	192601–200812	0.26*	0.0101	0.27	0.0101	-0.10	-0.0031	0.0007	0.06	0.24
infl Inflation	191902–200812	-0.02	0.0021	0.21	0.0021	-0.15	0.0025	-0.0006	-0.15	-0.23

Panel B: Betas adjusted for Stambaugh correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	ΔRMSE	$\overline{R^2}$	ΔRMSE	$\overline{R^2}$	ΔMAE	ΔRMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	187102–200812	-0.09	-0.0008	-0.14	-0.0008	-0.95	-0.0078	-0.0220	-1.18	-12.32
d/y Dividend Yield	187102–200812	-0.01	0.0011	0.03	0.0011	-0.55	-0.0152	-0.0120	-1.24	-6.74
e/p Earning Price Ratio	187102–200812	0.15*	0.0049	0.14	0.0049	-0.14	-0.0091	-0.0018	-0.41	-0.99
d/e Dividend Payout Ratio	187112–200812	0.17*	0.0055	-0.03	0.0055	-0.65	-0.0001	-0.0145	-0.78	-8.05
svar Stock Variance	188502–200812	0.06	0.0031	0.07	0.0031	-1.34	-0.0031	-0.0325	-0.70	-15.51
csp Cross-Sectional Prem	193705–200212	0.66**	0.0185	0.36	0.0185	-1.21	-0.0579	-0.0221	-0.74	-5.58
b/m Book to Market	192103–200812	0.21*	0.0084	0.02	0.0084	-0.40	-0.0257	-0.0058	-0.43	-2.24
ntis Net Equity Expansion	192701–200812	0.17	0.0075	-0.55	0.0075	-0.95	0.0046	-0.0169	-0.97	-5.99
tbl T-Bill Rate	192002–200812	0.07	0.0046	0.32	0.0046	-0.21	0.0028	-0.0019	-0.10	-0.75
lty Long Term Yield	191901–200812	-0.02	0.0021	0.05	0.0021	-1.10	-0.0080	-0.0214	-0.81	-8.19
ltr Long Term Return	192601–200812	0.07	0.0046	0.63	0.0046	-1.33	-0.0351	-0.0251	-1.89	-8.95
tms Term Spread	192002–200812	0.02	0.0032	0.19	0.0032	-0.08	0.0031	0.0010	0.09	0.38*
dfy Default Yield Spread	191901–200812	-0.09	-0.0000	-0.11	-0.0000	-0.25	-0.0022	-0.0028	-1.11	-1.09
dfr Default Return Spread	192601–200812	0.26*	0.0101	0.27	0.0101	-0.10	-0.0031	0.0007	0.06	0.24
infl Inflation	191902–200812	-0.02	0.0021	0.21	0.0021	-0.15	0.0025	-0.0006	-0.14	-0.22

Panel C: Betas adjusted for Lewellen correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	ΔRMSE	\overline{R}^2	ΔRMSE	\overline{R}^2	ΔMAE	ΔRMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	187102–200812	-0.38	-0.0077	-0.54	-0.0077	-1.86	-0.0114	-0.0446	-1.93	-24.85
d/y Dividend Yield	187102–200812	-0.02	0.0010	0.02	0.0010	-0.48	-0.0112	-0.0103	-1.10	-5.82
e/p Earning Price Ratio	187102–200812	0.03	0.0023	0.03	0.0023	-0.70	-0.0066	-0.0156	-2.79	-8.78
d/e Dividend Payout Ratio	187112–200812	0.17*	0.0055	-0.02	0.0055	-0.53	0.0037	-0.0116	-0.67	-6.45
svar Stock Variance	188502–200812	-2.05	-0.0484	-2.05	-0.0484	-5.00	-0.0284	-0.1259	-1.23	-58.46
csp Cross-Sectional Prem	193705–200212	0.66**	0.0185	0.36	0.0185	-1.01	-0.0520	-0.0178	-0.63	-4.50
b/m Book to Market	192103–200812	-0.26	-0.0046	-0.28	-0.0046	-0.48	0.0032	-0.0074	-1.32	-2.86
ntis Net Equity Expansion	192701–200812	0.17	0.0075	-0.60	0.0075	-1.05	0.0033	-0.0191	-1.04	-6.75
tbl T-Bill Rate	192002–200812	0.07	0.0045	0.33	0.0045	-0.22	0.0028	-0.0021	-0.11	-0.81
lty Long Term Yield	191901–200812	-0.02	0.0021	0.05	0.0021	-0.73	-0.0065	-0.0132	-0.61	-5.06
ltr Long Term Return	192601–200812	-1.11	-0.0279	-0.81	-0.0279	-4.02	-0.1078	-0.0808	-1.69	-28.27
tms Term Spread	192002–200812	0.02	0.0032	0.18	0.0032	-0.09	0.0025	0.0006	0.06	0.24
dfy Default Yield Spread	191901–200812	-0.15	-0.0017	-0.09	-0.0017	-0.19	0.0038	-0.0015	-0.23	-0.56
dfr Default Return Spread	192601–200812	-1.79	-0.0465	-3.48	-0.0465	-1.84	-0.0489	-0.0356	-0.76	-12.65
infl Inflation	191902–200812	-0.06	0.0008	0.37	0.0008	-0.05	0.0056	0.0015	0.25*	0.56*

Table 9: Forecasts at Monthly Frequency with Alternative Procedures and Total Returns

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the monthly frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500 calculated using CRSP data. Panel A uses the unadjusted betas (and is the same as Panel A of Table 2), Panel B corrects betas following Stambaugh (1999), and Panel C corrects betas following Lewellen (2004). The sample period is January 1927 to December 2008 and the first forecast is constructed in January 1965. All numbers, except \overline{R}^2 , are in percent per month. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Unadjusted betas

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	192701–200812	0.23*	0.0092	0.03	0.0092	0.11	-0.0373	0.0065	0.34	1.57*
d/y Dividend Yield	192701–200812	0.36**	0.0129	0.05	0.0129	-0.03	-0.0530	0.0036	0.14	0.86*
e/p Earning Price Ratio	192701–200812	0.75***	0.0237	-0.09	0.0237	-0.47	-0.0515	-0.0061	-0.19	-1.46
d/e Dividend Payout Ratio	192701–200812	0.02	0.0034	-0.11	0.0034	-1.84	-0.0242	-0.0359	-2.56	-8.54
svar Stock Variance	192701–200812	0.04	0.0041	0.58	0.0041	-0.03	-0.0000	0.0034	0.60*	0.83*
csp Cross-Sectional Prem	193705–200212	0.92***	0.0245	0.46	0.0245	0.70	0.0090	0.0206	0.71**	4.22***
b/m Book to Market	192701–200812	0.54**	0.0180	-0.87	0.0180	-1.83	-0.0882	-0.0357	-1.08	-8.48
ntis Net Equity Expansion	192701–200812	0.19*	0.0081	-0.52	0.0081	-1.77	-0.0116	-0.0344	-1.43	-8.18
tbl T-Bill Rate	192701–200812	0.05	0.0042	-0.20	0.0042	-0.35	0.0078	-0.0036	-0.12	-0.86
lty Long Term Yield	192701–200812	-0.02	0.0022	-0.39	0.0022	-1.11	-0.0012	-0.0201	-0.52	-4.80
ltr Long Term Return	192701–200812	0.07	0.0047	0.73	0.0047	-0.38	-0.0240	-0.0041	-0.26	-0.98
tms Term Spread	192701–200812	-0.01	0.0025	0.21	0.0025	-0.18	0.0033	0.0001	0.01	0.03
dfy Default Yield Spread	192701–200812	-0.09	0.0004	-0.10	0.0004	-0.21	-0.0032	-0.0003	-0.13	-0.08
dfr Default Return Spread	192701–200812	0.25*	0.0098	0.76	0.0098	0.34	0.0022	0.0116	0.88**	2.81**
infl Inflation	192701–200812	-0.01	0.0025	-0.14	0.0025	-0.10	0.0068	0.0019	0.25	0.46

Panel B: Betas adjusted for Stambaugh correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	ΔRMSE	\overline{R}^2	ΔRMSE	\overline{R}^2	ΔMAE	ΔRMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	192701–200812	0.13	0.0065	0.03	0.0065	-0.17	-0.0209	0.0004	0.04	0.09
d/y Dividend Yield	192701–200812	0.36**	0.0129	0.07	0.0129	-0.00	-0.0509	0.0041	0.17	1.00*
e/p Earning Price Ratio	192701–200812	0.70***	0.0224	0.17	0.0224	-0.02	-0.0309	0.0036	0.17	0.88*
d/e Dividend Payout Ratio	192701–200812	0.02	0.0033	-0.12	0.0033	-1.92	-0.0259	-0.0377	-2.60	-8.96
svar Stock Variance	192701–200812	0.04	0.0041	0.59	0.0041	-0.01	-0.0000	0.0039	0.66*	0.93*
csp Cross-Sectional Prem	193705–200212	0.92***	0.0245	0.46	0.0245	0.70	0.0091	0.0207	0.72**	4.24***
b/m Book to Market	192701–200812	0.51**	0.0170	-0.49	0.0170	-1.16	-0.0638	-0.0211	-0.81	-5.04
ntis Net Equity Expansion	192701–200812	0.19*	0.0081	-0.53	0.0081	-1.79	-0.0121	-0.0349	-1.44	-8.30
tbl T-Bill Rate	192701–200812	0.05	0.0042	-0.21	0.0042	-0.50	0.0058	-0.0068	-0.22	-1.64
lty Long Term Yield	192701–200812	-0.03	0.0021	-0.46	0.0021	-1.64	-0.0095	-0.0316	-0.74	-7.53
ltr Long Term Return	192701–200812	0.07	0.0047	0.74	0.0047	-0.37	-0.0240	-0.0040	-0.26	-0.96
tms Term Spread	192701–200812	-0.01	0.0025	0.21	0.0025	-0.20	0.0027	-0.0003	-0.02	-0.08
dfy Default Yield Spread	192701–200812	-0.09	0.0004	-0.14	0.0004	-0.35	-0.0054	-0.0035	-1.94	-0.85
dfr Default Return Spread	192701–200812	0.25*	0.0098	0.76	0.0098	0.34	0.0022	0.0117	0.88**	2.82**
infl Inflation	192701–200812	-0.01	0.0025	-0.14	0.0025	-0.10	0.0068	0.0019	0.25	0.46

Panel C: Betas adjusted for Lewellen correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	ΔRMSE	\overline{R}^2	ΔRMSE	\overline{R}^2	ΔMAE	ΔRMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	192701–200812	-0.17	-0.0018	-0.26	-0.0018	-0.98	-0.0076	-0.0173	-2.07	-4.14
d/y Dividend Yield	192701–200812	0.36**	0.0129	0.08	0.0129	0.08	-0.0463	0.0060	0.26	1.44*
e/p Earning Price Ratio	192701–200812	0.63***	0.0204	0.24	0.0204	0.14	0.0020	0.0072	1.35**	1.75**
d/e Dividend Payout Ratio	192701–200812	0.02	0.0033	-0.11	0.0033	-1.86	-0.0247	-0.0364	-2.58	-8.66
svar Stock Variance	192701–200812	-1.69	-0.0439	0.94	-0.0439	0.65	0.0009	0.0184	0.52*	4.45***
csp Cross-Sectional Prem	193705–200212	0.91***	0.0244	0.45	0.0244	0.71	0.0094	0.0208	0.75**	4.27***
b/m Book to Market	192701–200812	0.03	0.0036	-0.15	0.0036	-0.26	0.0005	-0.0016	-0.57	-0.39
ntis Net Equity Expansion	192701–200812	0.19*	0.0081	-0.57	0.0081	-1.92	-0.0147	-0.0378	-1.50	-8.97
tbl T-Bill Rate	192701–200812	0.05	0.0042	-0.22	0.0042	-0.46	0.0068	-0.0059	-0.19	-1.41
lty Long Term Yield	192701–200812	-0.02	0.0021	-0.44	0.0021	-1.03	-0.0036	-0.0183	-0.51	-4.37
ltr Long Term Return	192701–200812	-1.12	-0.0282	-1.09	-0.0282	-5.98	-0.1752	-0.1249	-1.88	-28.82
tms Term Spread	192701–200812	-0.01	0.0025	0.20	0.0025	-0.20	0.0019	-0.0003	-0.02	-0.07
dfy Default Yield Spread	192701–200812	-0.15	-0.0013	-0.30	-0.0013	-0.61	-0.0077	-0.0091	-2.97	-2.19
dfr Default Return Spread	192701–200812	-1.93	-0.0505	-2.34	-0.0505	-0.05	-0.0346	0.0031	0.05	0.74
infl Inflation	192701–200812	-0.03	0.0020	-0.16	0.0020	-0.18	0.0078	0.0003	0.03	0.08

Table 10: Forecasts at Monthly Frequency with Alternative Procedures and Total Returns 1946–2008

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the monthly frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500 calculated using CRSP data. Panel A uses the unadjusted betas (and is the same as Panel A of Table 2), Panel B corrects betas following Stambaugh (1999), and Panel C corrects betas following Lewellen (2004). The sample period is January 1946 to December 2008 and the first forecast is constructed in January 1965. All numbers, except \overline{R}^2 , are in percent per month. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) t -statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is F -statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Unadjusted betas

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	194601–200812	0.70**	0.0174	-0.06	0.0174	-0.02	-0.0476	0.0037	0.15	0.89*
d/y Dividend Yield	194601–200812	0.78***	0.0192	0.01	0.0192	0.05	-0.0518	0.0053	0.20	1.27*
e/p Earning Price Ratio	194601–200812	0.86***	0.0208	0.17	0.0208	0.23	-0.0243	0.0091	0.46*	2.20**
d/e Dividend Payout Ratio	194601–200812	-0.13	0.0001	-0.16	0.0001	-0.74	-0.0125	-0.0121	-1.20	-2.89
svar Stock Variance	194601–200812	1.05***	0.0247	1.22	0.0247	-0.05	-0.0058	0.0030	0.13	0.73*
csp Cross-Sectional Prem	194601–200212	0.90***	0.0222	0.47	0.0222	0.77	0.0106	0.0221	1.00**	4.54***
b/m Book to Market	194601–200812	0.13	0.0055	-0.24	0.0055	-1.06	-0.0351	-0.0191	-1.05	-4.57
ntis Net Equity Expansion	194601–200812	-0.12	0.0003	-0.20	0.0003	-1.20	-0.0135	-0.0220	-1.09	-5.25
tbl T-Bill Rate	194601–200812	0.28*	0.0086	-0.28	0.0086	-0.57	0.0117	-0.0084	-0.19	-2.01
lty Long Term Yield	194601–200812	0.04	0.0036	-0.42	0.0036	-0.80	0.0130	-0.0133	-0.34	-3.17
ltr Long Term Return	194601–200812	0.71**	0.0176	0.87	0.0176	0.14	-0.0277	0.0072	0.21	1.74**
tms Term Spread	194601–200812	0.16	0.0061	0.25	0.0061	-0.70	-0.0123	-0.0113	-0.33	-2.70
dfy Default Yield Spread	194601–200812	-0.12	0.0003	-0.08	0.0003	-0.86	-0.0107	-0.0147	-0.93	-3.50
dfr Default Return Spread	194601–200812	0.35*	0.0100	0.73	0.0100	-0.32	0.0051	-0.0030	-0.19	-0.71
infl Inflation	194601–200812	0.65**	0.0164	-0.32	0.0164	-0.26	0.0144	-0.0016	-0.08	-0.39

Panel B: Betas adjusted for Stambaugh correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	194601–200812	0.43**	0.0117	0.05	0.0117	-0.25	-0.0272	-0.0014	-0.12	-0.34
d/y Dividend Yield	194601–200812	0.78***	0.0192	0.02	0.0192	0.06	-0.0509	0.0056	0.22	1.34*
e/p Earning Price Ratio	194601–200812	0.74**	0.0184	0.25	0.0184	-0.05	-0.0093	0.0032	0.47*	0.76*
d/e Dividend Payout Ratio	194601–200812	-0.13	0.0001	-0.15	0.0001	-0.75	-0.0127	-0.0122	-1.08	-2.91
svar Stock Variance	194601–200812	1.05***	0.0247	1.21	0.0247	-0.03	-0.0059	0.0036	0.16	0.87*
csp Cross-Sectional Prem	194601–200212	0.90***	0.0222	0.46	0.0222	0.76	0.0106	0.0220	1.01**	4.52***
b/m Book to Market	194601–200812	-0.01	0.0026	-0.14	0.0026	-0.94	-0.0110	-0.0165	-1.77	-3.93
ntis Net Equity Expansion	194601–200812	-0.12	0.0002	-0.19	0.0002	-1.33	-0.0161	-0.0249	-1.16	-5.93
tbl T-Bill Rate	194601–200812	0.28*	0.0085	-0.32	0.0085	-0.94	0.0072	-0.0164	-0.35	-3.91
lty Long Term Yield	194601–200812	0.03	0.0034	-0.51	0.0034	-1.43	0.0050	-0.0272	-0.63	-6.48
ltr Long Term Return	194601–200812	0.71**	0.0176	0.87	0.0176	0.13	-0.0280	0.0070	0.21	1.69**
tms Term Spread	194601–200812	0.16	0.0061	0.25	0.0061	-0.78	-0.0145	-0.0130	-0.37	-3.10
dfy Default Yield Spread	194601–200812	-0.12	0.0003	-0.09	0.0003	-0.86	-0.0109	-0.0146	-0.92	-3.49
dfr Default Return Spread	194601–200812	0.35*	0.0100	0.73	0.0100	-0.32	0.0052	-0.0029	-0.18	-0.69
infl Inflation	194601–200812	0.65**	0.0164	-0.32	0.0164	-0.27	0.0144	-0.0017	-0.08	-0.41

Panel C: Betas adjusted for Lewellen correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	194601–200812	0.47**	0.0127	0.06	0.0127	0.64	-0.0104	0.0182	1.07**	4.40***
d/y Dividend Yield	194601–200812	0.78***	0.0192	0.02	0.0192	0.07	-0.0507	0.0058	0.22	1.40*
e/p Earning Price Ratio	194601–200812	0.86***	0.0208	0.18	0.0208	0.46	0.0020	0.0143	1.33***	3.45**
d/e Dividend Payout Ratio	194601–200812	-0.13	-0.0000	-0.19	-0.0000	-0.77	-0.0128	-0.0126	-1.17	-3.02
svar Stock Variance	194601–200812	-2.80	-0.0554	-3.65	-0.0554	-4.68	-0.0960	-0.0974	-1.07	-22.64
csp Cross-Sectional Prem	194601–200212	0.90***	0.0222	0.46	0.0222	0.77	0.0108	0.0221	1.03**	4.53***
b/m Book to Market	194601–200812	-0.03	0.0022	-0.15	0.0022	-0.23	0.0033	-0.0008	-0.10	-0.20
ntis Net Equity Expansion	194601–200812	-0.13	0.0001	-0.19	0.0001	-1.73	-0.0238	-0.0337	-1.36	-8.00
tbl T-Bill Rate	194601–200812	0.27*	0.0084	-0.35	0.0084	-0.82	0.0105	-0.0137	-0.32	-3.28
lty Long Term Yield	194601–200812	0.03	0.0034	-0.51	0.0034	-0.84	0.0107	-0.0142	-0.37	-3.39
ltr Long Term Return	194601–200812	-1.08	-0.0197	-1.26	-0.0197	-7.66	-0.2113	-0.1609	-2.19	-36.63
tms Term Spread	194601–200812	0.16	0.0061	0.25	0.0061	-1.08	-0.0235	-0.0194	-0.50	-4.63
dfy Default Yield Spread	194601–200812	-0.12	0.0003	-0.09	0.0003	-0.85	-0.0111	-0.0145	-0.92	-3.47
dfr Default Return Spread	194601–200812	-3.08	-0.0613	-2.02	-0.0613	1.61	-0.0044	0.0396	0.79**	9.65***
infl Inflation	194601–200812	0.42**	0.0116	-0.73	0.0116	-0.90	0.0065	-0.0156	-0.52	-3.73

Table 11: Forecasts at Monthly Frequency with Alternative Procedures and Total Returns 1946–1990

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the monthly frequency (both in the forecasting equation and forecast). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500 calculated using CRSP data. Panel A uses the unadjusted betas (and is the same as Panel A of Table 2), Panel B corrects betas following Stambaugh (1999), and Panel C corrects betas following Lewellen (2004). The sample period is January 1946 to December 1990 and the first forecast is constructed in January 1965. All numbers, except \overline{R}^2 , are in percent per month. A star next to IS- \overline{R}^2 denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. Δ RMSE (Δ MAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). OOS- R^2 is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Unadjusted betas

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	194601–199012	1.65***	0.0388	0.93	0.0388	1.38	0.0205	0.0387	1.36***	5.37***
d/y Dividend Yield	194601–199012	1.83***	0.0426	1.14	0.0426	1.59	0.0184	0.0437	1.48***	6.08***
e/p Earning Price Ratio	194601–199012	0.62**	0.0169	-0.01	0.0169	-0.27	-0.0086	0.0013	0.05	0.18
d/e Dividend Payout Ratio	194601–199012	-0.04	0.0031	-0.12	0.0031	-0.76	-0.0062	-0.0099	-0.63	-1.36
svar Stock Variance	194601–199012	0.40*	0.0122	0.46	0.0122	-1.26	-0.0115	-0.0212	-1.39	-2.89
csp Cross-Sectional Prem	194601–199012	0.80**	0.0208	0.04	0.0208	0.61	0.0194	0.0211	0.73**	2.91**
b/m Book to Market	194601–199012	0.18	0.0077	-0.00	0.0077	-1.45	-0.0258	-0.0256	-0.90	-3.48
ntis Net Equity Expansion	194601–199012	0.51*	0.0147	1.24	0.0147	-0.62	-0.0095	-0.0067	-0.22	-0.92
tbl T-Bill Rate	194601–199012	1.01**	0.0252	0.16	0.0252	0.04	0.0242	0.0082	0.12	1.12*
lty Long Term Yield	194601–199012	0.27	0.0097	-0.61	0.0097	-0.95	0.0267	-0.0142	-0.22	-1.93
ltr Long Term Return	194601–199012	1.34***	0.0322	1.84	0.0322	0.81	-0.0193	0.0257	0.49*	3.55**
tms Term Spread	194601–199012	1.16***	0.0284	1.43	0.0284	0.39	-0.0015	0.0161	0.30	2.22**
dfy Default Yield Spread	194601–199012	0.18	0.0077	1.14	0.0077	-0.79	-0.0043	-0.0106	-0.43	-1.44
dfr Default Return Spread	194601–199012	-0.14	0.0009	-0.13	0.0009	-0.92	0.0073	-0.0135	-0.57	-1.84
infl Inflation	194601–199012	1.36***	0.0325	-0.21	0.0325	0.28	0.0149	0.0138	0.44*	1.89**

Panel B: Betas adjusted for Stambaugh correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	$\Delta RMSE$	\overline{R}^2	$\Delta RMSE$	\overline{R}^2	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	194601–199012	1.47***	0.0349	0.77	0.0349	0.54	0.0113	0.0195	1.29**	2.70**
d/y Dividend Yield	194601–199012	1.83***	0.0426	1.13	0.0426	1.58	0.0185	0.0433	1.49***	6.03***
e/p Earning Price Ratio	194601–199012	0.37*	0.0117	-0.03	0.0117	-0.38	-0.0021	-0.0014	-0.22	-0.19
d/e Dividend Payout Ratio	194601–199012	-0.04	0.0030	-0.10	0.0030	-0.72	-0.0039	-0.0090	-0.52	-1.23
svar Stock Variance	194601–199012	0.40*	0.0122	0.46	0.0122	-1.22	-0.0116	-0.0203	-1.30	-2.77
csp Cross-Sectional Prem	194601–199012	0.80**	0.0208	0.04	0.0208	0.60	0.0193	0.0210	0.73**	2.90**
b/m Book to Market	194601–199012	0.05	0.0049	-0.09	0.0049	-1.13	-0.0097	-0.0182	-1.35	-2.49
ntis Net Equity Expansion	194601–199012	0.51*	0.0147	1.27	0.0147	-0.72	-0.0123	-0.0090	-0.28	-1.23
tbl T-Bill Rate	194601–199012	1.00**	0.0251	0.15	0.0251	-0.46	0.0171	-0.0031	-0.04	-0.43
lty Long Term Yield	194601–199012	0.23	0.0087	-0.80	0.0087	-1.86	0.0146	-0.0347	-0.49	-4.70
ltr Long Term Return	194601–199012	1.34***	0.0322	1.84	0.0322	0.80	-0.0196	0.0255	0.48*	3.52**
tms Term Spread	194601–199012	1.16***	0.0284	1.43	0.0284	0.28	-0.0048	0.0137	0.25	1.88**
dfy Default Yield Spread	194601–199012	0.18	0.0077	1.16	0.0077	-0.78	-0.0045	-0.0105	-0.42	-1.43
dfr Default Return Spread	194601–199012	-0.14	0.0009	-0.13	0.0009	-0.92	0.0073	-0.0135	-0.57	-1.84
infl Inflation	194601–199012	1.36***	0.0325	-0.21	0.0325	0.28	0.0148	0.0137	0.44*	1.89**

Panel C: Betas adjusted for Lewellen correction

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	ΔRMSE	\overline{R}^2	ΔRMSE	\overline{R}^2	ΔMAE	ΔRMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	194601–199012	1.01**	0.0252	0.46	0.0252	1.06	0.0245	0.0314	1.92***	4.35***
d/y Dividend Yield	194601–199012	1.83***	0.0426	1.13	0.0426	1.59	0.0186	0.0436	1.49***	6.06***
e/p Earning Price Ratio	194601–199012	0.08	0.0056	-0.18	0.0056	-0.11	0.0062	0.0049	0.38*	0.67
d/e Dividend Payout Ratio	194601–199012	-0.04	0.0030	-0.10	0.0030	-0.74	-0.0045	-0.0094	-0.56	-1.29
svar Stock Variance	194601–199012	-6.68	-0.1341	-9.16	-0.1341	-3.98	-0.0808	-0.0823	-0.91	-10.98
csp Cross-Sectional Prem	194601–199012	0.80**	0.0208	0.05	0.0208	0.61	0.0195	0.0213	0.75**	2.94**
b/m Book to Market	194601–199012	-0.29	-0.0022	-0.43	-0.0022	-0.26	0.0062	0.0014	0.12	0.20
ntis Net Equity Expansion	194601–199012	0.50*	0.0145	1.32	0.0145	-1.12	-0.0219	-0.0181	-0.49	-2.47
tbl T-Bill Rate	194601–199012	0.99**	0.0248	0.13	0.0248	-0.19	0.0234	0.0031	0.04	0.42
lty Long Term Yield	194601–199012	0.26	0.0093	-0.73	0.0093	-0.93	0.0236	-0.0137	-0.22	-1.86
ltr Long Term Return	194601–199012	-3.26	-0.0640	-4.23	-0.0640	-6.74	-0.2058	-0.1432	-1.32	-18.75
tms Term Spread	194601–199012	1.16***	0.0283	1.41	0.0283	-0.07	-0.0173	0.0058	0.10	0.80*
dfy Default Yield Spread	194601–199012	0.18	0.0077	1.22	0.0077	-0.78	-0.0044	-0.0103	-0.41	-1.40
dfr Default Return Spread	194601–199012	-0.86	-0.0141	-0.40	-0.0141	-0.29	-0.0143	0.0007	0.02	0.10
infl Inflation	194601–199012	0.91**	0.0231	-0.66	0.0231	-0.03	0.0091	0.0067	0.15	0.92*

Table 12: Forecasts at Annual Frequency (ending 1990)

This table presents statistics on forecast errors (*in-sample* and *out-of-sample*) for excess stock return forecasts at the annual frequency (both in the forecasting equation and forecast) *as of 1990*. Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500. Panel A uses the full sample period (but ending in 1990) for each variable and constructs first forecast 20 years after the first data observation. Panel B uses the full sample period (but ending in 1990) for each variable and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). Panel C uses only the sample period 1927 to 1990 and constructs first forecast in 1965 (or 20 years after the first data observation, whichever comes later). The data period for **ms** model is 1927 to 1990. All numbers, except \overline{R}^2 , are in percent per year. A star next to $IS-\overline{R}^2$ denotes significance of the in-sample regression. RMSE is the root mean square error and MAE is the mean absolute error. $\Delta RMSE$ (ΔMAE) is the RMSE (MAE) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior *out-of-sample* conditional forecast). $OOS-R^2$ is calculated as one minus the ratio of the variance of conditional forecast errors and the variance of the unconditional forecast errors. MSE-T is the Diebold and Mariano (1995) *t*-statistic modified by Harvey, Leybourne, and Newbold (1998) and MSE-F is *F*-statistic by McCracken (2004). Both the MSE-T and MSE-F statistics test for equal MSE of the unconditional forecast and the conditional forecast. One-sided critical values of MSE statistics are obtained from McCracken (2004) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Full data, Forecasts begin 20 years after the first sample date

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\bar{R}^2	Δ RMSE	\bar{R}^2	Δ RMSE	\bar{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–1990	1.64*	0.2248	3.32	0.2248	-0.37	0.0738	0.0616	0.36*	0.65*
d/y Dividend Yield	1872–1990	2.51**	0.3035	4.15	0.3035	0.43	0.1283	0.1371	0.42**	1.45**
e/p Earning Price Ratio	1872–1990	1.19	0.1840	1.08	0.1840	-1.61	-0.0811	-0.0542	-0.35	-0.57
d/e Dividend Payout Ratio	1872–1990	-0.86	0.0000	-1.02	0.0000	-4.70	-0.3318	-0.3400	-2.22	-3.47
svar Stock Variance	1885–1990	-0.78	0.0170	-1.14	0.0170	-30.25	-1.0334	-2.6415	-1.34	-19.19
b/m Book to Market	1921–1990	5.72**	0.6971	4.31	0.6971	3.56	0.8655	0.4443	0.69**	2.92**
ntis Net Equity Expansion	1927–1990	10.43***	1.2057	-3.63	1.2057	-4.17	0.4414	-0.1378	-0.25	-0.76
eqjs Pct Equity Issuing	1927–1990	11.70***	1.3374	7.45	1.3374	5.94	0.2357	0.6563	0.93**	3.89**
tbl T-Bill Rate	1920–1990	1.04	0.2384	3.63	0.2384	-2.73	-0.4648	-0.0536	-0.06	-0.34
lty Long Term Yield	1919–1990	-0.42	0.0982	0.45	0.0982	-9.09	-1.1928	-0.5382	-0.50	-3.38
ltr Long Term Return	1926–1990	1.64	0.3183	0.31	0.3183	-13.74	-1.0238	-0.8542	-0.80	-4.52
tms Term Spread	1920–1990	1.14	0.2474	2.76	0.2474	-0.16	0.2169	0.1469	0.36*	0.96*
dfy Default Yield Spread	1919–1990	-1.41	0.0036	-1.98	0.0036	-4.10	-0.1728	-0.1613	-1.29	-1.05
dfr Default Return Spread	1926–1990	0.60	0.2164	1.24	0.2164	-0.90	0.1504	0.1100	0.31*	0.64*
infl Inflation	1919–1990	-1.16	0.0275	-1.95	0.0275	-5.12	-0.3206	-0.2392	-1.35	-1.54
i/k Invstmnt Capital Ratio	1947–1990	9.12**	0.9131	-4.13	0.9131	-0.95	-0.5538	0.2844	0.18	0.85*
cayp Cnsmptn, Wlth, Incme	1945–1990	13.25***	1.2294	17.79	1.2294	14.01	1.2128	1.4963	1.54***	5.50***
caya Cnsmptn, Wlth, Incme	1945–1990	—	—	—	—	-7.00	0.4944	-0.2209	-0.25	-0.69
all Kitchen Sink	1927–1990	16.85**	3.5656	0.69	3.5656	-186.31	-5.9194	-6.9045	-2.62	-22.68
ms Model Selection	1927–1990	—	—	—	—	—	—	—	—	—

Panel B: Full data, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		\overline{R}^2	Δ RMSE	\overline{R}^2	Δ RMSE	\overline{R}^2	Δ MAE	Δ RMSE	MSE-T	MSE-F
d/p Dividend Price Ratio	1872–1990	1.64*	0.2248	5.49	0.2248	5.55	0.1864	0.7358	1.42**	2.67***
d/y Dividend Yield	1872–1990	2.51**	0.3035	4.48	0.3035	4.52	0.1181	0.6562	0.68	2.37**
e/p Earning Price Ratio	1872–1990	1.19	0.1840	2.49	0.1840	0.62	0.3607	0.3580	0.82*	1.25**
d/e Dividend Payout Ratio	1872–1990	-0.86	0.0000	-4.17	0.0000	-7.29	-0.1749	-0.2295	-2.61	-0.76
svar Stock Variance	1885–1990	-0.78	0.0170	-3.09	0.0170	-3.30	0.0716	0.0645	1.78***	0.22
b/m Book to Market	1921–1990	5.72**	0.6971	1.28	0.6971	-9.18	0.2919	-0.3838	-0.37	-1.19
ntis Net Equity Expansion	1927–1990	10.43***	1.2057	9.00	1.2057	-6.32	0.9367	-0.1632	-0.18	-0.53
eqis Pct Equity Issuing	1927–1990	11.70***	1.3374	4.11	1.3374	3.81	0.0788	0.6185	0.53	2.16**
tbl T-Bill Rate	1920–1990	1.04	0.2384	-6.04	0.2384	-4.64	-0.8217	-0.0369	-0.02	-0.12
lty Long Term Yield	1919–1990	-0.42	0.0982	-9.52	0.0982	-18.26	-2.1235	-1.0452	-0.50	-3.10
ltr Long Term Return	1926–1990	1.64	0.3183	0.61	0.3183	-25.73	-1.6935	-1.5734	-1.01	-4.46
tms Term Spread	1920–1990	1.14	0.2474	5.23	0.2474	1.02	0.4801	0.4070	0.53	1.36*
dfy Default Yield Spread	1919–1990	-1.41	0.0036	-3.15	0.0036	-6.35	-0.1615	-0.1666	-1.65	-0.53
dfr Default Return Spread	1926–1990	0.60	0.2164	1.16	0.2164	-1.13	0.2737	0.2341	0.48	0.78
infl Inflation	1919–1990	-1.16	0.0275	-4.74	0.0275	-5.43	-0.2781	-0.0963	-0.42	-0.31
i/k Invstmnt Capital Ratio	1947–1990	9.12**	0.9131	-4.13	0.9131	-0.95	-0.5538	0.2844	0.18	0.85*
cayp Cnsmptn, Wlth, Incme	1945–1990	13.25***	1.2294	17.79	1.2294	14.01	1.2128	1.4963	1.54***	5.50***
caya Cnsmptn, Wlth, Incme	1945–1990	—	—	—	—	-7.00	0.4944	-0.2209	-0.25	-0.69
all Kitchen Sink	1927–1990	16.85**	3.5656	-56.85	3.5656	-330.66	-6.6840	-7.8591	-2.32	-14.39
ms Model Selection	1927–1990	—	—	—	—	—	—	—	—	—

Panel C: Data begin in 1927, Forecasts begin in 1965

Variable	Data	In-Sample		In-Sample for OOS Period		Relative OOS Performance				
		$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	$\Delta RMSE$	$\overline{R^2}$	ΔMAE	$\Delta RMSE$	MSE-T	MSE-F
d/p Dividend Price Ratio	1927–1990	4.04*	0.5583	9.03	0.5583	11.02	0.5476	1.1990	1.81***	4.44***
d/y Dividend Yield	1927–1990	6.45**	0.7993	5.53	0.7993	9.08	0.4230	1.0409	0.76*	3.79***
e/p Earning Price Ratio	1927–1990	3.90*	0.5445	3.56	0.5445	-1.05	0.2312	0.2385	0.27	0.80*
d/e Dividend Payout Ratio	1927–1990	-1.59	0.0047	-4.20	0.0047	-14.82	-0.4559	-0.7897	-2.10	-2.41
svar Stock Variance	1927–1990	-1.62	0.0020	-3.85	0.0020	-5.45	-0.0994	-0.0974	-1.67	-0.32
b/m Book to Market	1927–1990	9.25***	1.0841	-1.14	1.0841	-10.13	0.1062	-0.4470	-0.36	-1.41
ntis Net Equity Expansion	1927–1990	10.43***	1.2057	9.00	1.2057	-6.32	0.9367	-0.1632	-0.18	-0.53
eqis Pct Equity Issuing	1927–1990	11.70***	1.3374	4.11	1.3374	3.81	0.0788	0.6185	0.53	2.16**
tbl T-Bill Rate	1927–1990	0.81	0.2388	-5.89	0.2388	-13.33	-1.7035	-0.6814	-0.32	-2.10
lty Long Term Yield	1927–1990	-0.84	0.0771	-8.53	0.0771	-24.17	-2.6765	-1.4532	-0.65	-4.19
ltr Long Term Return	1927–1990	1.46	0.3028	0.78	0.3028	-22.82	-1.4665	-1.3589	-0.94	-3.95
tms Term Spread	1927–1990	2.16	0.3719	5.28	0.3719	2.37	0.6359	0.5045	0.47	1.74**
dfy Default Yield Spread	1927–1990	-1.59	0.0048	-3.01	0.0048	-5.83	-0.1209	-0.1261	-1.51	-0.41
dfr Default Return Spread	1927–1990	0.45	0.2039	1.11	0.2039	-1.16	0.2308	0.2298	0.48	0.77
infl Inflation	1927–1990	-1.33	0.0298	-4.01	0.0298	-12.80	-0.0675	-0.6430	-1.37	-1.99
i/k Invstmnt Capital Ratio	1947–1990	9.12**	0.9131	-4.13	0.9131	-0.95	-0.5538	0.2844	0.18	0.85*
cayp Cnsmptn, Wlth, Incme	1945–1990	13.25***	1.2294	17.79	1.2294	14.01	1.2128	1.4963	1.54***	5.50***
caya Cnsmptn, Wlth, Incme	1945–1990	—	—	—	—	-7.00	0.4944	-0.2209	-0.25	-0.69
all Kitchen Sink	1927–1990	16.85**	3.5656	-56.85	3.5656	-330.66	-6.6840	-7.8591	-2.32	-14.39
ms Model Selection	1927–1990	—	—	—	—	—	—	—	—	—

Table 13: Encompassing Tests

This table presents statistics on encompassing tests for excess stock return forecasts at various frequencies. Variables are explained in Section 1. All numbers are in percent per frequency corresponding to the panel. λ gives the ex-post weight on the conditional forecast for the optimal forecast that minimizes the MSE. ENC is the test statistic proposed by Clark and McCracken (2001) for a test of forecast encompassing. One-sided critical values of ENC statistic are obtained from Clark and McCracken (2001) (critical values for **ms** model are not calculated). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively. ΔRMSE^* is the RMSE difference between the unconditional forecast and the optimal forecast for the same sample/forecast period. ΔRMSE^{*r} is the RMSE difference between the unconditional forecast and the optimal forecast for the same sample/forecast period using rolling estimates of λ .

Panel A: Monthly Data

		Estimation:	All Data					All Data				After 192701				
		OOS Forecast:	After 20 years					After 196501				After 196501				
		Data	$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$
d/p	Dividend Price Ratio	187102–200812	-0.05	-0.62	-1.88	0.0021	-0.0115	-2.25	-0.52	0.0049	-0.0145	0.05	0.46	1.17*	0.0023	-0.0139
d/y	Dividend Yield	187102–200812	-0.01	-0.95	-1.91	0.0033	-0.0122	-0.07	-0.06	0.0000	-0.0160	0.14	0.42	2.16**	0.0038	-0.0111
e/p	Earning Price Ratio	187102–200812	0.16*	0.55	1.75*	0.0017	-0.0056	0.45	0.95*	0.0018	-0.0178	0.45**	0.31	2.37**	0.0031	-0.0162
d/e	Dividend Payout Ratio	187112–200812	0.17*	0.18	1.81*	0.0006	-0.0085	-0.09	-0.28	0.0001	-0.0174	0.06	-0.76	-2.24	0.0072	-0.0073
svar	Stock Variance	188502–200812	0.06	-0.34	-3.08	0.0022	-0.2646	2.90	0.67	0.0081	-0.0774	0.07	2.68	0.76	0.0085	-0.0321
csp	Cross-Sectional Prem	193705–200212	0.66**	0.29	3.95**	0.0045	-0.0196	0.79	4.23***	0.0162	-0.0077	0.66**	0.79	4.23***	0.0162	-0.0077
b/m	Book to Market	192103–200812	0.25*	0.30	3.11**	0.0024	-0.0164	0.00	0.02	0.0000	-0.0267	0.28*	0.02	0.14	0.0000	-0.0241
ntis	Net Equity Expansion	192701–200812	0.17	0.10	0.70	0.0002	-0.0134	-0.05	-0.32	0.0001	-0.0240	0.17	-0.05	-0.32	0.0001	-0.0240
tbl	T-Bill Rate	192002–200812	0.07	0.49	4.51**	0.0057	-0.0451	0.48	4.12***	0.0082	-0.0228	0.03	0.45	3.26**	0.0061	-0.0332
lty	Long Term Yield	191901–200812	-0.01	0.30	3.98**	0.0031	-0.0435	0.34	4.16***	0.0060	-0.0226	-0.04	0.33	3.85***	0.0053	-0.0211
ltr	Long Term Return	192601–200812	0.07	-0.29	-1.66	0.0014	-0.0236	0.32	1.10*	0.0015	-0.0213	0.07	0.36	1.27*	0.0019	-0.0208
tms	Term Spread	192002–200812	0.02	0.56	2.22*	0.0032	-0.1098	0.57	2.17**	0.0051	-0.0286	-0.01	0.49	1.37*	0.0028	-0.0321
dfy	Default Yield Spread	191901–200812	-0.09	-3.29	-0.89	0.0076	-0.0251	-5.00	-0.24	0.0049	-0.0030	-0.10	-2.76	-0.15	0.0017	-0.0101
dfr	Default Return Spread	192601–200812	0.26*	0.60	0.81	0.0013	-0.0349	2.36	1.74**	0.0170	-0.0151	0.26*	2.44	1.70**	0.0172	-0.0155
infl	Inflation	191902–200812	-0.02	0.22	0.09	0.0000	-0.2351	1.40	0.41	0.0024	-0.0506	0.01	1.00	0.65	0.0027	-0.0478
all	Kitchen Sink	192701–200812	2.12***	0.09	7.67**	0.0022	-0.0138	0.23	9.97***	0.0100	-0.0221	2.12***	0.23	9.97***	0.0100	-0.0221

Panel B: Monthly Data with Total Returns

		OOS Forecast:	After 194701					After 196501				
		Data	$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	
d/p	Dividend Price Ratio	192701–200812	0.23*	0.62	5.00***	0.0087	-0.0102	0.65	3.47***	0.0093	-0.0067	
d/y	Dividend Yield	192701–200812	0.36**	0.50	7.71***	0.0108	-0.0080	0.55	5.00***	0.0114	-0.0038	
e/p	Earning Price Ratio	192701–200812	0.75***	0.43	11.28***	0.0136	-0.0085	0.44	4.95***	0.0090	-0.0109	
d/e	Dividend Payout Ratio	192701–200812	0.02	-0.00	-0.04	0.0000	-0.0139	-0.99	-2.82	0.0118	-0.0021	
svar	Stock Variance	192701–200812	0.04	1.77	0.48	0.0024	-0.0417	2.31	0.54	0.0052	-0.0433	
csp	Cross-Sectional Prem	193705–200212	0.92***	0.37	6.21***	0.0092	-0.0138	0.82	5.50***	0.0219	-0.0007	
b/m	Book to Market	192701–200812	0.54**	0.26	4.52**	0.0033	-0.0376	0.17	2.24**	0.0016	-0.0229	
ntis	Net Equity Expansion	192701–200812	0.19*	0.05	0.42	0.0001	-0.0134	-0.09	-0.61	0.0002	-0.0236	
tbl	T-Bill Rate	192701–200812	0.05	0.45	4.89***	0.0062	-0.0222	0.46	4.34***	0.0083	-0.0220	
lty	Long Term Yield	192701–200812	-0.02	0.35	7.34***	0.0072	-0.0082	0.34	5.29***	0.0076	-0.0153	
ltr	Long Term Return	192701–200812	0.07	-0.08	-0.44	0.0001	-0.0125	0.37	1.31*	0.0020	-0.0210	
tms	Term Spread	192701–200812	-0.01	0.47	1.78*	0.0024	-0.0323	0.51	1.70**	0.0036	-0.0548	
dfy	Default Yield Spread	192701–200812	-0.09	-1.76	-0.47	0.0023	-0.0054	0.24	0.02	0.0000	-0.0206	
dfr	Default Return Spread	192701–200812	0.25*	1.11	1.21	0.0038	-0.0183	2.71	1.74**	0.0196	-0.0147	
infl	Inflation	192701–200812	-0.01	0.84	0.62	0.0014	-0.0115	0.96	0.51	0.0020	-0.0515	
all	Kitchen Sink	192701–200812	2.47***	0.10	8.97**	0.0029	-0.0125	0.23	10.27***	0.0104	-0.0312	

Panel C: Quarterly Data

		Estimation:	All Data					All Data					After 19271				
		OOS Forecast:	After 20 years					After 19651					After 19651				
		Data	$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	
d/p	Dividend Price Ratio	18712–20084	-0.08	-1.39	-2.82	0.0414	-0.1057	-0.12	-0.08	0.0002	-0.0769	0.32	0.43	2.04**	0.0206	-0.0432	
d/y	Dividend Yield	18712–20084	-0.07	-1.45	-1.71	0.0258	-0.0330	-0.09	-0.06	0.0001	-0.1001	0.19	0.53	1.63*	0.0202	-0.0650	
e/p	Earning Price Ratio	18712–20084	0.60**	0.58	2.57*	0.0153	-0.0257	0.41	1.30**	0.0124	-0.0774	1.42**	0.30	2.86**	0.0207	-0.0685	
d/e	Dividend Payout Ratio	18712–20084	0.21	-0.05	-0.34	0.0002	-0.0616	-0.19	-0.38	0.0017	-0.0899	-0.02	-0.92	-1.91	0.0429	-0.0316	
svar	Stock Variance	18851–20084	-0.19	-4.80	-8.19	0.5094	-0.7498	-0.96	-0.03	0.0008	-0.6651	-0.30	-3.45	-0.11	0.0087	-0.0480	
b/m	Book to Market	19211–20084	1.38**	0.26	5.03***	0.0197	-0.0698	0.08	1.00*	0.0020	-0.1252	1.49**	0.08	1.18*	0.0023	-0.1036	
ntis	Net Equity Expansion	19271–20084	1.55**	0.04	0.53	0.0003	-0.0623	-0.03	-0.35	0.0003	-0.1332	1.55**	-0.03	-0.35	0.0003	-0.1332	
tbl	T-Bill Rate	19201–20084	0.03	0.42	3.26**	0.0194	-0.1533	0.39	2.74**	0.0256	-0.1545	-0.08	0.35	1.98**	0.0163	-0.2292	
lty	Long Term Yield	19191–20084	-0.16	0.22	2.42*	0.0078	-0.0900	0.26	2.38**	0.0147	-0.1588	-0.22	0.23	2.04**	0.0113	-0.1477	
ltr	Long Term Return	19261–20084	0.34	0.63	2.16*	0.0212	-0.1150	0.72	2.11**	0.0354	-0.4424	0.33	0.73	2.00**	0.0340	-0.4875	
tms	Term Spread	19201–20084	0.02	0.52	1.81*	0.0135	-0.1272	0.53	1.66**	0.0205	-0.1845	-0.08	0.43	0.96	0.0097	-0.2743	
dfy	Default Yield Spread	19191–20084	-0.22	-1.46	-1.67	0.0353	-0.1638	0.82	0.11	0.0020	-0.1784	-0.22	0.80	0.14	0.0026	-0.1532	
dfr	Default Return Spread	19261–20084	-0.21	-0.74	-4.38	0.0535	-0.0029	-1.24	-2.88	0.0885	-0.0207	-0.21	-1.25	-2.83	0.0872	-0.0196	
infl	Inflation	19192–20084	-0.16	0.74	0.12	0.0013	-0.1910	1.75	0.25	0.0101	-0.4786	-0.17	1.14	0.24	0.0064	-0.6805	
i/k	Invstmnt Capital Ratio	19471–20084	2.17**	0.55	3.83**	0.0524	-0.0602	0.55	3.83**	0.0524	-0.0602	2.17**	0.55	3.83**	0.0524	-0.0602	
cayp	Cnsmptn, Wlth, Incme	19521–20084	4.58***	0.66	10.80***	0.1979	0.0976	0.66	10.80***	0.1979	0.0976	4.58***	0.66	10.80***	0.1979	0.0976	
caya	Cnsmptn, Wlth, Incme	19521–20084	—	0.21	4.72***	0.0311	-0.3964	0.21	4.72***	0.0311	-0.3964	—	0.21	4.72***	0.0311	-0.3964	
all	Kitchen Sink	19271–20084	4.52***	-0.04	-2.72	0.0026	-0.0341	-0.05	-1.40	0.0019	-0.2516	4.52***	-0.05	-1.40	0.0019	-0.2516	

Panel D: Annual Data

		Estimation: OOS Forecast: Data	All Data After 20 years					All Data After 1965				After 1927 After 1965				
			\bar{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	\bar{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$
d/p	Dividend Price Ratio	1872–2008	1.27	0.41	0.96	0.0325	-0.2357	0.67	1.38**	0.1779	-0.3445	2.95*	0.73	2.73**	0.3796	-0.1481
d/y	Dividend Yield	1872–2008	1.83*	0.49	2.50*	0.1000	-0.5138	0.49	1.85**	0.1764	-0.3900	4.19**	0.52	3.85***	0.3955	-0.1082
e/p	Earning Price Ratio	1872–2008	1.74*	0.47	0.84	0.0322	-0.1994	1.01	1.62**	0.3062	-0.2706	4.36**	0.64	2.97**	0.3666	-0.1956
d/e	Dividend Payout Ratio	1872–2008	-0.74	-1.77	-1.44	0.2149	0.1023	-8.70	-0.43	0.7524	0.3296	-1.26	-4.62	-1.14	1.1307	0.7376
svar	Stock Variance	1885–2008	-0.73	-0.42	-4.60	0.2264	-0.6167	2.57	0.04	0.0182	-0.5050	-1.26	-16.81	-0.15	0.5089	0.3871
b/m	Book to Market	1921–2008	4.55**	0.61	4.82**	0.3586	0.0714	0.35	2.03**	0.1478	-0.5819	5.56**	0.29	2.44**	0.1509	-0.3251
ntis	Net Equity Expansion	1927–2008	2.57*	-0.25	-1.18	0.0448	-0.4657	-0.30	-1.19	0.0822	-1.0522	2.57*	-0.30	-1.19	0.0822	-1.0522
eqis	Pct Equity Issuing	1927–2008	5.66**	0.41	2.54**	0.1460	-0.2851	0.28	1.38*	0.0788	-0.8307	5.66**	0.28	1.38*	0.0788	-0.8307
tbl	T-Bill Rate	1920–2008	0.07	0.37	1.80*	0.0830	-1.1368	0.39	1.72**	0.1370	-1.1413	-0.11	0.31	2.23**	0.1468	-0.4948
lty	Long Term Yield	1919–2008	-0.74	0.28	2.33*	0.0829	-0.6403	0.28	1.98**	0.1165	-0.8122	-1.03	0.24	2.01**	0.1070	-0.4938
ltr	Long Term Return	1926–2008	0.47	0.30	3.86**	0.1683	-0.1407	0.22	1.94**	0.0936	-7.5134	0.41	0.23	1.92**	0.0968	-7.7897
tms	Term Spread	1920–2008	0.06	0.38	0.82	0.0383	-0.9338	0.46	0.89	0.0819	-0.7540	0.73	0.49	1.66*	0.1615	-0.4608
dfy	Default Yield Spread	1919–2008	-1.13	-2.59	-0.42	0.1330	-0.8847	-10.46	-0.25	0.5260	0.4137	-1.25	-11.81	-0.20	0.4763	0.3782
dfr	Default Return Spread	1926–2008	-1.02	-0.15	-0.27	0.0057	-0.4044	-0.22	-0.32	0.0142	-0.5116	-1.06	-0.24	-0.33	0.0161	-0.5197
infl	Inflation	1919–2008	-0.91	-2.31	-0.57	0.1619	-0.4283	-1.09	-0.09	0.0200	-13.7035	-1.04	-3.27	-0.77	0.5210	-0.3605
i/k	Invstmnt Capital Ratio	1947–2008	5.73**	0.55	2.65**	0.3088	-0.1450	0.55	2.65**	0.3088	-0.1450	5.73**	0.55	2.65**	0.3088	-0.1450
cayp	Cnsmptn, Wlth, Incme	1945–2008	9.68***	1.09	4.82***	0.9665	-0.2792	1.09	4.82***	0.9665	-0.2792	9.68***	1.09	4.82***	0.9665	-0.2792
caya	Cnsmptn, Wlth, Incme	1945–2008	—	0.32	2.03*	0.1375	-0.4190	0.32	2.03*	0.1375	-0.4190	—	0.32	2.03*	0.1375	-0.4190
all	Kitchen Sink	1927–2008	13.13**	0.12	4.39	0.1304	0.0002	-0.09	-1.38	0.0404	-0.3933	13.13**	-0.09	-1.38	0.0404	-0.3933

Panel E: 3-year Data

		Estimation: OOS Forecast: Data	All Data After 20 years					All Data After 1965				After 1927 After 1965				
			$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$
d/p	Dividend Price Ratio	1872–2008	4.36**	0.46	4.91**	0.3084	-1.0005	0.33	3.10***	0.3414	-0.5976	10.24***	0.38	7.75***	1.0906	0.2018
d/y	Dividend Yield	1872–2008	3.22*	0.34	3.99**	0.1881	-0.2203	0.22	2.00**	0.1558	-0.5912	7.88**	0.30	6.20***	0.7478	0.0633
e/p	Earning Price Ratio	1872–2008	4.91**	0.62	4.25**	0.3516	-0.3036	0.47	3.18***	0.4698	-0.3633	8.44**	0.36	5.02***	0.6417	-0.2067
d/e	Dividend Payout Ratio	1872–2008	-0.69	-7.05	-2.25	2.3039	1.6657	-8.43	-1.00	2.9097	1.9791	-0.10	-1.69	-0.46	0.2551	-0.8639
svar	Stock Variance	1885–2008	-0.28	-0.56	-11.94	1.9359	-0.0634	0.67	0.09	0.0177	-1.1647	-0.92	0.51	0.05	0.0080	-1.4593
b/m	Book to Market	1921–2008	8.57*	0.33	6.89***	0.5349	-0.4827	0.01	0.14	0.0007	-1.2872	12.29**	0.02	0.34	0.0034	-0.7578
ntis	Net Equity Expansion	1927–2008	11.87***	0.12	0.97	0.0299	-0.3280	-0.00	-0.00	0.0000	-0.4729	11.87***	-0.00	-0.00	0.0000	-0.4729
eqis	Pct Equity Issuing	1927–2008	10.83	0.02	0.19	0.0011	-0.6516	-0.01	-0.10	0.0005	-0.8173	10.83	-0.01	-0.10	0.0005	-0.8173
tbl	T-Bill Rate	1920–2008	1.66*	0.38	5.90***	0.4877	-0.4434	0.46	6.36***	1.0154	-0.4533	1.54	0.29	7.62***	0.9773	0.5880
lty	Long Term Yield	1919–2008	-0.35	0.21	4.06**	0.2061	-0.8858	0.33	5.12***	0.6481	-2.1595	-0.93	0.30	7.59***	0.9750	0.3701
ltr	Long Term Return	1926–2008	-1.03	-2.51	-2.17	1.3695	1.1642	-1.92	-0.74	0.4811	-7.4101	-1.06	-1.52	-0.79	0.4101	-4.3366
tms	Term Spread	1920–2008	2.38*	0.09	0.75	0.0155	-0.6051	0.57	3.06**	0.5805	-0.2748	5.23**	0.43	5.30***	0.7746	0.4206
dfy	Default Yield Spread	1919–2008	0.26	-0.84	-3.45	0.7098	-0.4052	1.80	0.55	0.3217	-0.4438	-0.51	1.05	0.19	0.0634	-0.5259
dfr	Default Return Spread	1926–2008	-1.27	-1.95	-0.27	0.1199	-1.0926	-1.41	-0.19	0.0881	-3.1800	-1.29	-1.86	-0.21	0.1260	-3.8344
infl	Inflation	1919–2008	-1.16	-2.99	-1.29	0.8287	-0.0889	-10.05	-0.45	1.5939	0.2489	-0.89	-1.67	-1.04	0.6004	-0.8963
i/k	Invstmnt Capital Ratio	1947–2008	17.25***	1.02	6.25***	2.1542	-0.7525	1.02	6.25***	2.1542	-0.7525	17.25***	1.02	6.25***	2.1542	-0.7525
cayp	Cnsmptn, Wlth, Incme	1945–2008	39.52***	1.69	19.43***	8.0732	6.3756	1.69	19.43***	8.0732	6.3756	39.52***	1.69	19.43***	8.0732	6.3756
caya	Cnsmptn, Wlth, Incme	1945–2008	—	0.76	8.78***	2.1304	0.4368	0.76	8.78***	2.1304	0.4368	—	0.76	8.78***	2.1304	0.4368
all	Kitchen Sink	1927–2008	35.58***	-0.05	-1.68	0.0489	-0.8623	-0.18	-3.93	0.7707	-0.1125	35.58***	-0.18	-3.93	0.7707	-0.1125

Panel F: 5-year Data

		Estimation: OOS Forecast: Data	All Data After 20 years					All Data After 1965				After 1927 After 1965				
			$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	$\overline{R^2}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$
d/p	Dividend Price Ratio	1872–2008	9.78***	0.49	14.62***	1.2597	0.4787	0.34	7.94***	1.3799	0.2821	20.38***	0.45	17.03***	4.0339	3.1345
d/y	Dividend Yield	1872–2008	5.17**	0.37	6.45***	0.4331	-0.8525	0.34	5.70***	0.9231	-0.2848	12.89***	0.44	14.13***	3.2413	2.1989
e/p	Earning Price Ratio	1872–2008	5.65**	0.47	3.81**	0.3143	-0.5727	0.47	3.53***	0.6852	-0.2020	13.33***	0.38	6.87***	1.3335	0.3695
d/e	Dividend Payout Ratio	1872–2008	1.07	-0.05	-0.19	0.0019	-0.7575	1.15	1.06*	0.4833	-1.9391	2.53*	1.20	0.79	0.4202	-1.6436
svar	Stock Variance	1885–2008	0.40	0.14	8.22***	0.3996	-2.2508	0.77	0.21	0.0659	-1.0939	-0.73	-1.44	-0.15	0.1012	-2.4652
b/m	Book to Market	1921–2008	11.45**	0.38	8.43***	1.0202	-0.5651	0.12	1.73**	0.1319	-2.2885	14.36**	0.14	2.55**	0.2383	-1.4305
ntis	Net Equity Expansion	1927–2008	5.62**	0.30	1.20	0.1237	-1.3739	-0.16	-0.54	0.0445	-0.8353	5.62**	-0.16	-0.54	0.0445	-0.8353
eqis	Pct Equity Issuing	1927–2008	7.41*	0.28	1.38	0.1349	-2.2089	0.16	0.67	0.0512	-1.8681	7.41*	0.16	0.67	0.0512	-1.8681
tbl	T-Bill Rate	1920–2008	2.90*	0.32	8.06***	0.8481	-0.5124	0.29	5.73***	0.9791	-3.2171	3.85	0.29	10.23***	2.1857	0.7887
lty	Long Term Yield	1919–2008	-0.11	0.02	0.67	0.0072	-0.4758	0.16	3.82***	0.4771	-5.3573	-0.27	0.24	9.68***	2.2900	1.2924
ltr	Long Term Return	1926–2008	-1.31	0.11	0.42	0.0165	-4.9144	-0.55	-1.37	0.3826	-0.1357	-1.32	-0.63	-1.03	0.3232	-0.1809
tms	Term Spread	1920–2008	4.46*	0.02	0.37	0.0033	-0.8532	0.57	4.95***	1.2943	-1.3473	7.92**	0.54	8.30***	2.0247	0.3719
dfy	Default Yield Spread	1919–2008	3.70*	-0.41	-5.21	0.9158	-0.4141	2.31	2.05**	2.0777	1.0410	1.07	2.55	0.81	0.9075	-0.6169
dfr	Default Return Spread	1926–2008	-1.14	-2.60	-0.81	0.7368	-0.2123	-0.06	-0.01	0.0003	-2.2353	-1.10	0.05	0.01	0.0004	-1.9129
infl	Inflation	1919–2008	-1.18	-3.54	-2.44	2.6921	-3.7025	-13.51	-0.81	5.7487	2.7520	-1.10	-3.95	-1.55	3.1602	-0.2588
i/k	Invstmnt Capital Ratio	1947–2008	29.89***	0.79	7.49***	2.9599	-4.5631	0.79	7.49***	2.9599	-4.5631	29.89***	0.79	7.49***	2.9599	-4.5631
cayp	Cnsmptn, Wlth, Incme	1945–2008	35.35***	1.87	12.58***	9.5880	3.8322	1.87	12.58***	9.5880	3.8322	35.35***	1.87	12.58***	9.5880	3.8322
caya	Cnsmptn, Wlth, Incme	1945–2008	—	0.95	6.64***	2.9725	-0.0764	0.95	6.64***	2.9725	-0.0764	—	0.95	6.64***	2.9725	-0.0764
all	Kitchen Sink	1927–2008	40.22***	0.08	4.41	0.5493	0.2665	0.05	1.50	0.1148	-0.3821	40.22***	0.05	1.50	0.1148	-0.3821

Panel G: Price Ratios Data forecasting monthly return

		OOS Forecast:	After 196501				
		Data	\bar{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{**}$
e/p	Earning(1Y) Price Ratio	192701–200812	0.75***	0.44	4.95***	0.0090	-0.0109
e/p	Earning(3Y) Price Ratio	192701–200812	0.24*	0.43	2.62**	0.0047	-0.0098
e/p	Earning(5Y) Price Ratio	192701–200812	0.35**	0.41	3.31**	0.0056	-0.0079
e/p	Earning(10Y) Price Ratio	192701–200812	0.56**	0.42	5.34***	0.0095	-0.0037
d/p	Dividend(1Y) Price Ratio	192701–200812	0.23*	0.65	3.47***	0.0093	-0.0067
d/p	Dividend(3Y) Price Ratio	192701–200812	0.32**	0.66	4.03***	0.0111	-0.0047
d/p	Dividend(5Y) Price Ratio	192701–200812	0.42**	0.61	4.89***	0.0124	-0.0025
d/p	Dividend(10Y) Price Ratio	192701–200812	0.37**	0.66	4.40***	0.0120	-0.0027
d/e	Dividend(1Y) Earning(1Y) Ratio	192701–200812	0.02	-0.99	-2.82	0.0118	-0.0021
d/e	Dividend(1Y) Earning(3Y) Ratio	192701–200812	-0.08	-1.33	-1.77	0.0099	-0.0197
d/e	Dividend(1Y) Earning(5Y) Ratio	192701–200812	-0.10	-1.39	-2.44	0.0143	-0.0090
d/e	Dividend(1Y) Earning(10Y) Ratio	192701–200812	-0.02	-1.13	-2.48	0.0118	-0.0219
d/e	Dividend(3Y) Earning(3Y) Ratio	192701–200812	0.02	2.20	0.40	0.0036	-0.0252
d/e	Dividend(5Y) Earning(5Y) Ratio	192701–200812	0.09	2.18	1.18*	0.0106	-0.0460

Panel H: Price Ratios Data forecasting 1-year return

		OOS Forecast: Data	After 1902					After 1965			
			\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{**}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{**}$
e/p	Earning(1Y) Price Ratio	1882–2008	1.94*	0.13	0.27	0.0033	-1.2468	1.00	1.70**	0.3194	-0.2888
e/p	Earning(3Y) Price Ratio	1882–2008	3.04**	0.57	2.91**	0.1494	-0.5088	0.59	2.25**	0.2555	-0.1279
e/p	Earning(5Y) Price Ratio	1882–2008	3.46**	0.62	3.43**	0.1911	-0.8007	0.53	2.33**	0.2388	-0.1143
e/p	Earning(10Y) Price Ratio	1882–2008	5.91***	0.71	7.98***	0.4988	-0.0209	0.43	3.63***	0.3151	-0.0180
d/p	Dividend(1Y) Price Ratio	1882–2008	2.27*	0.53	2.62*	0.1267	-0.9604	0.56	2.25**	0.2430	-0.2341
d/p	Dividend(3Y) Price Ratio	1882–2008	2.89**	0.54	3.71**	0.1839	-0.5026	0.52	2.61***	0.2621	-0.1988
d/p	Dividend(5Y) Price Ratio	1882–2008	3.64**	0.60	5.38**	0.2908	-0.3210	0.47	2.96***	0.2734	-0.1419
d/p	Dividend(10Y) Price Ratio	1882–2008	3.32**	0.57	5.12**	0.2651	-0.3078	0.48	2.79***	0.2646	-0.1000
d/e	Dividend(1Y) Earning(1Y) Ratio	1882–2008	-0.62	-0.56	-0.65	0.0340	-0.8312	-1.43	-0.18	0.0493	-5.9038
d/e	Dividend(1Y) Earning(3Y) Ratio	1882–2008	-0.76	-1.74	-1.51	0.2497	-0.2486	-1.84	-1.10	0.4224	-0.1171
d/e	Dividend(1Y) Earning(5Y) Ratio	1882–2008	-0.80	-0.76	-1.53	0.1114	-1.3716	-1.43	-1.47	0.4539	-0.3107
d/e	Dividend(1Y) Earning(10Y) Ratio	1882–2008	0.45	0.37	2.49*	0.0858	-1.5049	-0.79	-1.67	0.2933	-0.9811
d/e	Dividend(3Y) Earning(3Y) Ratio	1882–2008	-0.45	-5.48	-1.49	0.7829	0.2814	-6.76	-0.30	0.4032	0.1285
d/e	Dividend(5Y) Earning(5Y) Ratio	1882–2008	0.15	-0.64	-0.74	0.0447	-0.3566	0.91	0.26	0.0453	-2.6143

Panel I: Price Ratios Data forecasting 3-year return

		OOS Forecast: Data	After 1902					After 1965			
			\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{**}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{**}$
e/p	Earning(1Y) Price Ratio	1882–2008	6.18**	0.65	5.10**	0.4903	-0.0937	0.46	3.56***	0.5247	-0.3536
e/p	Earning(3Y) Price Ratio	1882–2008	7.13**	0.68	6.80***	0.6818	-0.1537	0.37	3.41***	0.4201	-0.3713
e/p	Earning(5Y) Price Ratio	1882–2008	9.88***	0.71	10.55***	1.0742	-0.0417	0.33	4.17***	0.4819	-0.2956
e/p	Earning(10Y) Price Ratio	1882–2008	12.93***	0.60	15.24***	1.3296	0.4151	0.32	6.01***	0.7185	-0.1247
d/p	Dividend(1Y) Price Ratio	1882–2008	6.52**	0.53	8.64***	0.6835	-0.2935	0.34	4.65***	0.5511	-0.4105
d/p	Dividend(3Y) Price Ratio	1882–2008	7.56**	0.53	10.38***	0.8272	0.0546	0.33	4.93***	0.5758	-0.3208
d/p	Dividend(5Y) Price Ratio	1882–2008	8.62***	0.52	11.97***	0.9337	0.2497	0.33	5.40***	0.6401	-0.1991
d/p	Dividend(10Y) Price Ratio	1882–2008	6.91**	0.40	8.89***	0.5612	-0.0566	0.32	4.34***	0.4907	-0.2181
d/e	Dividend(1Y) Earning(1Y) Ratio	1882–2008	-0.60	-2.55	-2.47	1.0169	0.6411	-10.80	-0.81	2.9880	2.2761
d/e	Dividend(1Y) Earning(3Y) Ratio	1882–2008	-0.50	-0.62	-2.91	0.3006	0.2352	-5.52	-1.53	3.0212	2.3738
d/e	Dividend(1Y) Earning(5Y) Ratio	1882–2008	-0.78	-0.20	-0.86	0.0278	-1.2015	-1.68	-3.19	2.1597	1.1347
d/e	Dividend(1Y) Earning(10Y) Ratio	1882–2008	0.60	0.25	2.85**	0.1119	-2.7034	-0.98	-2.45	0.9211	-0.9302
d/e	Dividend(3Y) Earning(3Y) Ratio	1882–2008	0.13	-0.66	-2.50	0.2703	0.1544	0.38	0.11	0.0130	-8.0188
d/e	Dividend(5Y) Earning(5Y) Ratio	1882–2008	-0.03	-0.45	-1.36	0.0965	-0.0232	-0.47	-0.12	0.0171	-0.8825

Panel J: Price Ratios Data forecasting 5-year return

		OOS Forecast:	After 1902					After 1965			
		Data	\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$
e/p	Earning(1Y) Price Ratio	1882–2008	6.75**	0.68	5.37**	0.6945	-0.3390	0.46	3.91***	0.7631	-0.1348
e/p	Earning(3Y) Price Ratio	1882–2008	11.54***	0.67	10.43***	1.3067	0.1540	0.41	5.91***	1.0752	0.1091
e/p	Earning(5Y) Price Ratio	1882–2008	16.16***	0.63	15.65***	1.8440	0.3277	0.37	7.65***	1.3679	0.4316
e/p	Earning(10Y) Price Ratio	1882–2008	16.38***	0.47	14.79***	1.4051	0.1002	0.37	9.41***	1.7542	0.6627
d/p	Dividend(1Y) Price Ratio	1882–2008	11.69***	0.50	16.35***	1.6085	0.1196	0.35	9.29***	1.7045	0.6153
d/p	Dividend(3Y) Price Ratio	1882–2008	12.66***	0.48	15.90***	1.5260	0.2384	0.35	9.33***	1.7184	0.6548
d/p	Dividend(5Y) Price Ratio	1882–2008	13.39***	0.46	16.88***	1.5791	0.4847	0.34	9.11***	1.6594	0.6419
d/p	Dividend(10Y) Price Ratio	1882–2008	9.34***	0.28	8.78***	0.5582	-0.3643	0.35	6.86***	1.1704	0.2171
d/e	Dividend(1Y) Earning(1Y) Ratio	1882–2008	1.07	-0.50	-1.87	0.1968	-0.2216	1.32	1.02*	0.5427	-2.3837
d/e	Dividend(1Y) Earning(3Y) Ratio	1882–2008	-0.07	-0.35	-3.67	0.3035	0.1807	-5.83	-0.83	2.1605	1.2478
d/e	Dividend(1Y) Earning(5Y) Ratio	1882–2008	-0.83	-0.50	-1.93	0.2037	-0.3284	-1.75	-3.35	3.2083	2.1419
d/e	Dividend(1Y) Earning(10Y) Ratio	1882–2008	-0.75	-0.18	-1.28	0.0494	-10.3044	-2.08	-1.47	1.4102	0.3642
d/e	Dividend(3Y) Earning(3Y) Ratio	1882–2008	0.54	-0.52	-2.89	0.3278	-0.0843	0.91	0.49	0.1821	-5.5220
d/e	Dividend(5Y) Earning(5Y) Ratio	1882–2008	-0.23	-0.79	-3.25	0.5557	-5.9181	-5.79	-0.92	2.3834	1.3085

Panel K: Price Ratios Data forecasting 10-year return

		OOS Forecast:	After 1902					After 1965			
		Data	\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*r}$
e/p	Earning(1Y) Price Ratio	1882–2008	20.37***	0.39	15.35***	1.8759	1.6965	0.77	11.32***	4.9410	0.0632
e/p	Earning(3Y) Price Ratio	1882–2008	19.88***	0.32	5.85***	0.5607	-0.2560	0.77	12.31***	5.2960	3.9107
e/p	Earning(5Y) Price Ratio	1882–2008	18.08***	0.40	6.65***	0.7879	-0.8138	0.75	11.78***	5.0069	3.4154
e/p	Earning(10Y) Price Ratio	1882–2008	15.75***	0.51	8.26***	1.1958	-6.6187	0.69	11.67***	4.7089	2.5336
d/p	Dividend(1Y) Price Ratio	1882–2008	14.08***	0.51	9.84***	1.4137	-0.6050	0.51	10.77***	3.7317	1.4386
d/p	Dividend(3Y) Price Ratio	1882–2008	11.86***	0.49	7.86***	1.0910	-1.1386	0.51	8.37***	2.8755	0.5061
d/p	Dividend(5Y) Price Ratio	1882–2008	10.77**	0.50	7.79***	1.1077	-2.8873	0.48	7.14***	2.3690	-0.0110
d/p	Dividend(10Y) Price Ratio	1882–2008	9.43**	0.32	6.42***	0.6329	-1.2887	0.37	5.69***	1.5871	-0.5548
d/e	Dividend(1Y) Earning(1Y) Ratio	1882–2008	0.10	-1.55	-2.84	1.3615	1.0830	-2.19	-2.00	3.5008	0.4139
d/e	Dividend(1Y) Earning(3Y) Ratio	1882–2008	0.06	-0.44	-3.11	0.4504	-1.6446	-1.31	-2.74	3.1381	0.6062
d/e	Dividend(1Y) Earning(5Y) Ratio	1882–2008	-0.42	-0.42	-2.05	0.2699	-0.7912	-1.84	-1.95	2.8396	0.6122
d/e	Dividend(1Y) Earning(10Y) Ratio	1882–2008	-0.86	-0.19	-0.43	0.0233	-0.9622	-7.66	-0.33	1.7367	-0.3258
d/e	Dividend(3Y) Earning(3Y) Ratio	1882–2008	0.02	-0.80	-3.12	0.7942	-1.9521	-2.14	-2.30	4.0357	1.1486
d/e	Dividend(5Y) Earning(5Y) Ratio	1882–2008	-0.30	-2.05	-5.36	3.7028	3.2994	-3.42	-2.48	7.2293	5.7309

Panel L: Adjusted Betas

	Data	Forecast	Unadjusted betas					Stambaugh correction					Lewellen correction					
			\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*T}$	\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*T}$	\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*T}$	
d/p	Dividend Price Ratio	187102–200812	189102–	-0.05	-0.63	-1.90	0.0073	-0.0395	-0.09	-0.29	-2.26	0.0041	-0.0324	-0.38	-0.13	-2.60	0.0021	-0.0465
d/y	Dividend Yield	187102–200812	189102–	-0.01	-0.96	-1.93	0.0115	-0.0422	-0.01	-0.93	-2.19	0.0126	-0.0280	-0.02	-1.14	-2.02	0.0142	-0.0274
e/p	Earning Price Ratio	187102–200812	189102–	0.16*	0.55	1.74*	0.0058	-0.0193	0.15*	0.23	0.43	0.0006	-0.0250	0.03	-1.39	-3.23	0.0278	-0.0040
d/e	Dividend Payout Ratio	187112–200812	189112–	0.17*	0.17	1.77*	0.0019	-0.0289	0.17*	0.17	2.02*	0.0021	-0.0274	0.17*	0.19	2.03**	0.0024	-0.0290
svar	Stock Variance	188502–200812	190502–	0.06	-0.34	-3.07	0.0075	-0.7842	0.06	-0.32	-3.02	0.0070	-0.6791	-2.05	0.17	15.06***	0.0193	-0.0862
csp	Cross-Sectional Prem	193705–200212	195705–	0.66**	0.28	3.88**	0.0152	-0.0714	0.66**	0.29	3.80**	0.0151	-0.0714	0.66**	0.31	3.58**	0.0151	-0.0721
b/m	Book to Market	192103–200812	194103–	0.25*	0.30	3.14**	0.0085	-0.0587	0.21*	0.29	1.53*	0.0040	-0.0683	-0.26	-1.08	-0.98	0.0094	-0.0620
ntis	Net Equity Expansion	192701–200812	194701–	0.17	0.10	0.75	0.0007	-0.0472	0.17	0.10	0.75	0.0007	-0.0472	0.17	0.09	0.71	0.0006	-0.0482
tbl	T-Bill Rate	192002–200812	194002–	0.07	0.50	4.45**	0.0198	-0.1514	0.07	0.46	4.42**	0.0183	-0.1660	0.07	0.46	4.13**	0.0169	-0.1609
lty	Long Term Yield	191901–200812	193901–	-0.01	0.30	3.97**	0.0107	-0.1572	-0.02	0.27	4.79**	0.0117	-0.1588	-0.02	0.29	3.49**	0.0091	-0.1546
ltr	Long Term Return	192601–200812	194601–	0.07	-0.30	-1.67	0.0048	-0.0917	0.07	-0.29	-1.64	0.0046	-0.0920	-1.11	0.27	16.71***	0.0453	-0.1092
tms	Term Spread	192002–200812	194001–	0.02	0.57	2.33*	0.0119	-0.7148	0.02	0.55	2.23*	0.0109	-0.3203	0.02	0.53	2.23*	0.0106	-0.2912
dfy	Default Yield Spread	191901–200812	193901–	-0.09	-3.32	-0.89	0.0265	-0.0838	-0.09	-1.06	-0.37	0.0035	-0.1207	-0.15	0.35	0.66	0.0021	-0.1401
dfr	Default Return Spread	192601–200812	194601–	0.26*	0.59	0.80	0.0045	-0.1242	0.26*	0.59	0.80	0.0046	-0.1242	-1.79	0.28	8.12***	0.0223	-0.1252

Panel M: Adjusted Betas with Total Returns

	Data	Forecast	Unadjusted betas					Stambaugh correction					Lewellen correction					
			\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*T}$	\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*T}$	\overline{R}^2	λ	ENC	$\Delta RMSE^*$	$\Delta RMSE^{*T}$	
d/p	Dividend Price Ratio	192701–200812	196501–	0.23*	0.65	3.44***	0.0320	-0.0238	0.13	0.54	0.63	0.0048	-0.0847	-0.17	-1.25	-1.48	0.0267	-0.0037
d/y	Dividend Yield	192701–200812	196501–	0.36**	0.55	4.97***	0.0391	-0.0140	0.36**	0.56	4.73***	0.0380	-0.0156	0.36**	0.59	4.52***	0.0387	-0.0160
e/p	Earning Price Ratio	192701–200812	196501–	0.75***	0.44	4.93***	0.0310	-0.0389	0.70***	0.58	3.15**	0.0263	-0.0431	0.63***	3.36	1.03	0.0496	-0.0287
d/e	Dividend Payout Ratio	192701–200812	196501–	0.02	-0.98	-2.82	0.0405	-0.0082	0.02	-0.96	-2.94	0.0414	-0.0072	0.02	-0.97	-2.86	0.0405	-0.0079
svar	Stock Variance	192701–200812	196501–	0.04	2.25	0.53	0.0172	-0.1593	0.04	2.37	0.59	0.0201	-0.1383	-1.69	0.72	7.39***	0.0757	-0.2378
csp	Cross-Sectional Prem	193705–200212	196501–	0.92***	0.81	5.46***	0.0752	-0.0038	0.92***	0.82	5.38***	0.0750	-0.0050	0.91***	0.85	5.16***	0.0744	-0.0072
b/m	Book to Market	192701–200812	196501–	0.54**	0.17	2.22**	0.0056	-0.0803	0.51**	0.18	1.48*	0.0040	-0.0820	0.03	-1.80	-0.15	0.0040	-0.0841
ntis	Net Equity Expansion	192701–200812	196501–	0.19*	-0.09	-0.62	0.0008	-0.0827	0.19*	-0.09	-0.63	0.0008	-0.0828	0.19*	-0.09	-0.71	0.0010	-0.0833
tbl	T-Bill Rate	192701–200812	196501–	0.05	0.45	4.31***	0.0283	-0.0768	0.05	0.42	4.28***	0.0260	-0.0862	0.05	0.43	4.05***	0.0249	-0.0854
lty	Long Term Yield	192701–200812	196501–	-0.02	0.34	5.25***	0.0262	-0.0538	-0.03	0.30	5.72***	0.0252	-0.0558	-0.02	0.34	4.46***	0.0218	-0.0543
ltr	Long Term Return	192701–200812	196501–	0.07	0.36	1.30*	0.0068	-0.0762	0.07	0.37	1.32*	0.0070	-0.0763	-1.12	0.24	13.61***	0.0504	-0.0872
tms	Term Spread	192701–200812	196501–	-0.01	0.51	1.69*	0.0123	-0.1856	-0.01	0.49	1.65*	0.0116	-0.1343	-0.01	0.49	1.73**	0.0122	-0.1137
dfy	Default Yield Spread	192701–200812	196501–	-0.09	0.11	0.01	0.0000	-0.0690	-0.09	-5.75	-0.39	0.0324	0.0077	-0.15	-5.66	-1.01	0.0825	0.0604
dfr	Default Return Spread	192701–200812	196501–	0.25*	2.69	1.73**	0.0668	-0.0514	0.25*	2.69	1.73**	0.0668	-0.0513	-1.93	0.52	11.02***	0.0822	-0.0189

Table 14: Forecasts at Monthly Frequency using Campbell and Thompson (2008) procedure

This table presents statistics on forecast errors in-sample (IS) and out-of-sample (OOS) for excess stock return forecasts at the monthly frequency (both in the forecasting equation and forecast) using the procedure of Campbell and Thompson (2008) (henceforth, CT). Variables are explained in Section 1. Stock return is price changes, *including* dividends, of S&P500. Panel A uses the log returns (as in the rest of the tables) while Panel B uses simple returns (as in CT). The data period is December 1927 to December 2008, except for **csp** (May 1937 to December 2002) and **cay3** (March 1952 to December 2008). A star next to \bar{R}^2 (in percent) denotes significance of the in-sample regression. Variables are sorted in increasing order of in-sample significance. ΔRMSE is the RMSE (root mean square error) difference between the unconditional forecast and the conditional forecast for the same sample/forecast period (positive numbers signify superior out-of-sample conditional forecast). $\Delta U^{\gamma=3}$ is the utility difference for mean variance utility optimizer with risk aversion coefficient $\gamma = 3$ who trades based on unconditional forecast and conditional forecast. Portfolio weights are denoted by w (a cap $w_{\max} = 150\%$ is imposed on all portfolio weights). ΔRMSE and ΔU are in percent per month while w is in percent. Subscript U is for unconditional forecast, PN is for plain conditional forecast, and CT is the CT conditional forecast. The panel header gives the utility of investing based on unconditional forecast (U_0), buy-and hold market (U_{mkt}), and the riskfree asset (U_{rf}). The column titled $\Delta U_{\text{CT}}^{\gamma=x}$ gives the utility based on risk aversion coefficient $\gamma = x$, where x equalizes the U_{mkt} and U_{rf} . Critical values of all statistics are obtained from McCracken (2004). Significance levels at 90%, 95%, and 99% are denoted by one, two, and three stars, respectively.

Panel A: Log Return $U_U = 0.5506\%$, $U_{\text{mkt}} = 0.6039\%$, $U_{\text{rf}} = 0.3918\%$

Variable	IS		OOS				Frcst=		$w_{\text{CT}} = w_{\text{max}}$	$\Delta w_{\text{CT}} - \Delta w_U$
	\overline{R}^2	$\Delta U_{\text{PN}}^{\gamma=3}$	$\Delta \text{RMSE}_{\text{PN}}$	$\Delta \text{RMSE}_{\text{CT}}$	$\Delta U_{\text{CT}}^{\gamma=3}$	$\Delta U_{\text{CT}}^{\gamma=5.44}$	0	U		
csp Cross-Sectional Prem	0.92***	0.1871	-0.0163	0.0097**	0.0969	0.1016	51.3	0.0	9.1	4.0
e/p Earning Price Ratio	0.72***	0.1752	-0.0073	-0.0043	0.0714	0.0467	36.6	0.0	25.5	3.0
b/m Book to Market	0.59***	-0.0307	-0.0339	-0.0180	-0.0501	-0.0648	50.3	0.0	19.2	3.5
eqis Pct Equity Issuing	0.57***	0.1437	-0.0038	-0.0010	0.1500	0.0660	9.7	0.0	41.3	1.7
e/p Earning(10Y) Price Ratio	0.52***	0.0016	-0.0252	-0.0030	-0.0724	-0.0040	57.0	0.0	6.1	3.4
d/y Dividend Yield	0.33**	0.1255	-0.0034	0.0097**	0.0331	0.0923	55.1	0.0	9.0	2.8
ntis Net Equity Expansion	0.29*	0.0374	-0.0253	-0.0243	0.0153	-0.0275	4.5	0.0	43.2	5.0
dfr Default Return Spread	0.25*	-0.1555	0.0036*	-0.0015	0.0285	0.0314	1.4	3.0	23.1	21.2
d/p Dividend Price Ratio	0.20*	0.1177	0.0033*	0.0071**	0.0170	0.0640	22.5	0.0	4.0	2.5
ltr Long Term Return	0.07	0.1573	-0.0178	0.0050**	0.0494	0.0290	4.8	37.1	32.2	25.5
tbl T-Bill Rate	0.04	0.1311	-0.0068	-0.0007	0.0603	0.0196	25.4	0.0	6.5	2.5
svar Stock Variance	0.04	0.1383	0.0007	-0.0030	-0.0199	-0.0127	0.0	53.2	25.6	0.2
d/e Dividend Payout Ratio	0.03	-0.0352	-0.0207	-0.0206	0.0066	-0.0795	0.1	0.0	58.9	-0.2
tms Term Spread	0.02	0.1048	0.0002	-0.0002	0.0864	-0.0066	4.1	11.1	30.2	5.6
infl Inflation	-0.01	0.0506	0.0010	0.0020*	0.0300	0.0182	1.5	0.0	25.2	9.9
lty Long Term Yield	-0.04	0.0643	-0.0236	0.0039*	0.0657	0.0459	46.7	0.0	10.0	1.2
dfy Default Yield Spread	-0.08	-0.0017	-0.0054	-0.0042	-0.0330	-0.0354	3.0	21.8	24.0	0.7
cay3 Cnsmptn, Wlth, Incme	2.01***	0.5246	-0.0266	0.0107**	0.1918	0.1592	46.7	0.0	16.0	8.7

Panel B: Simple Return $U_U = 0.6750\%$, $U_{\text{mkt}} = 0.6961\%$, $U_{\text{rf}} = 0.3918\%$

Variable	IS		OOS				Frcst=		$w_{\text{CT}} = w_{\text{max}}$	$\Delta w_{\text{CT}} - \Delta w_U$
	\overline{R}^2	$\Delta U_{\text{PN}}^{\gamma=3}$	$\Delta \text{RMSE}_{\text{PN}}$	$\Delta \text{RMSE}_{\text{CT}}$	$\Delta U_{\text{CT}}^{\gamma=3}$	$\Delta U_{\text{CT}}^{\gamma=6.52}$	0	U		
csp Cross-Sectional Prem	0.99***	0.1629	-0.0164	0.0071**	0.0600	0.0858	44.7	0.0	13.5	4.7
b/m Book to Market	0.99***	-0.0807	-0.0523	-0.0326	-0.1070	-0.0798	45.4	0.0	29.7	3.3
e/p Earning(10Y) Price Ratio	0.94***	-0.1159	-0.0362	-0.0019	-0.0927	0.0052	53.3	0.0	14.7	4.8
e/p Earning Price Ratio	0.74***	0.1681	-0.0070	-0.0078	0.0670	0.0558	18.3	0.0	32.7	4.4
d/y Dividend Yield	0.60***	0.0359	-0.0123	0.0092**	-0.0578	0.0998	54.8	0.0	15.4	3.2
eqis Pct Equity Issuing	0.54**	0.1348	-0.0065	-0.0033	0.1314	0.0756	6.4	0.0	58.0	1.3
d/p Dividend Price Ratio	0.43**	0.0218	0.0021*	0.0116***	-0.0600	0.0932	30.7	0.0	15.3	3.9
ntis Net Equity Expansion	0.34**	0.0014	-0.0314	-0.0312	0.0232	-0.0376	0.4	0.0	59.2	4.2
dfy Default Yield Spread	0.20*	-0.0140	-0.0121	-0.0107	-0.0745	-0.0721	4.0	0.0	28.1	2.5
dfr Default Return Spread	0.14	0.0197	0.0026*	0.0017*	0.0566	0.0459	0.3	19.9	45.6	7.0
tbl T-Bill Rate	0.13	0.1289	-0.0024	0.0041**	0.0885	0.0594	22.1	0.0	18.1	3.0
infl Inflation	0.13	0.0506	0.0021*	0.0033*	0.0368	0.0383	1.2	0.0	44.3	12.2
ltr Long Term Return	0.10	0.1257	-0.0083	0.0063**	0.0759	0.0319	3.0	36.2	52.0	24.7
tms Term Spread	0.07	0.1202	0.0016*	0.0014*	0.1217	0.0394	3.5	0.0	58.3	4.5
lty Long Term Yield	0.01	0.0661	-0.0139	0.0071**	0.0583	0.0736	32.6	0.0	22.2	2.0
d/e Dividend Payout Ratio	-0.10	-0.0120	-0.0109	-0.0107	-0.0107	-0.0572	0.0	7.5	58.4	-0.1
svar Stock Variance	-0.10	0.0184	-0.0161	-0.0161	-0.0343	-0.0632	0.0	0.1	37.0	2.0
cay3 Cnsmptn, Wlth, Incme	2.03***	0.4554	-0.0275	0.0071*	0.1214	0.1234	42.2	0.0	19.3	8.6