STOCK MARKET SEASONALITY AND END OF THE TAX YEAR EFFECT

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I. Introduction

This paper examines stock market seasonality in major industrialized countries and the tax loss selling hypothesis as a possible cause for this phenomenon.

Recently there has been a revival of interest in examining the anomalies in the stock market returns in the U.S. Banz (1981) and Reinganum (1981) pointed out abnormally high returns on small firm stocks. Keim (1982) has most recently shown that small firms, on average, have higher risk adjusted returns than larger firms, and a significant portion of the average magnitude of the size effect over the period 1963-1979 is due to anomalous January excess returns. Daily excess return distributions in January, Keim found, have extremely large means relative to the remaining eleven months. This phenomenon is more pronounced for small firms even in years when, on average, large firms earn higher risk adjusted returns than small firms. Furthermore, a large portion of these anomalous January returns takes place in the first week of trading.

Roll (1982) conjectures that this "January effect" is due to the tax loss sellings at the end of the tax year. The tax loss selling hypothesis is not new. It was first suggested by Wachtel (1942) and more recently by Branch (1977) and Dyl (1977). The hypothesis argues that there is a downward pressure on prices of stocks which have declined during the year, because investors sell these to realize capital losses against their taxable income. After the tax year end, this price pressure disappears and prices reach equilibrium level. In the process there are large returns on these stocks during the first few trading days.

Branch found that tax loss selling has little or no effect on the general level of stock prices in an average year, while depressed issues do seem to be

under particular selling pressure at the end of the tax year and generally rise thereafter. Roll (1982) provides some evidence that the size effect and the end of the tax year effect are closely related.

We also find strong seasonalities and abnormally large mean returns in the first month of the tax year in countries where capital gains are taxed and losses from selling stocks are credited toward taxable income. In countries where there is no capital gains tax, there is still some evidence of seasonality and larger than average returns in some months. These months, however, do not coincide with the beginning of the tax year.

1.1 Outline of the Paper

We present the stock market return data and its statistical properties for individual countries in section 2. We explain our hypotheses related to abnormal mean returns and the empirical tests in section 3, and summarize our conclusions in section 4.

2. Data and Its Statistical Properties

2.1 Data

Stock market returns are obtained from two sources. International Financial Statistics (IFS), published by the International Monetary Fund, reports stock market indices for a number of countries since January 1947. These indices represent at least 60% of the market value of all shares traded in the most active stock exchange in each country. The IFS indices report averages of daily or weekly closing prices for most countries. If IFS reports more than one index for a country, we use only the industrial share price index in return calculations.

The second source of data is Capital International Perspective (CIP). This investment services firm, based in Geneva, Switzerland, provides stock

market indices based on 1100 share prices listed on the stock exchanges of 18 countries. CIP indices represent approximately 60 percent of the total market value of all shares traded in these countries. The fraction of total share value represented by the index for each country ranges from 47% for Singapore to 80% for Norway. CIP indices report month-end closing prices in local currencies. This data series covers the period 12/1958-1/1979.

Indices in both sources are value weighted indices without dividend yields. We compute the monthly stock market returns by taking the first log differences of price indices.

2.2 Statistical Properties of the Data

Tables 1a and 1b present summary statistics and estimates of the first twelve autocorrelations for stock market returns for both CIP and IFS indices.

IFS stock returns have unusually high first order autocorrelations. Stock returns for 16 out of 22 countries have positive first order autocorrelation. Most higher order autocorrelations, however, are not significantly different from zero. High positive first order autocorrelations are most likely caused by using daily or weekly average closing prices in the IFS indices. Even though daily and weekly returns are not serially correlated, averaging creates spurious autocorrelations. This is well documented by Working (1960).[1]

Autocorrelations are much lower for the CIP return series. Only Austria, Denmark and Norway have serially correlated stock returns. The values of skewness and studentized ranges for both stock return series are consistent with normal distribution.

While return series from CIP indices exhibit better statistical properties in terms of the lack of autocorrelations, IFS indices are available

for longer time periods. We, therefore, use both return series in our analysis.

3. Stock Market Return Seasonality

There has been a great deal of research investigating the seasonality in stock market returns in the U.S. and in other countries. The primary motivation for this research was to test the proposition that stock markets are efficient. Fama (1965, 1970) has argued that in an efficient market common stock prices follow a multiplicative random walk. Thus, Fama and others have shown that the return on an individual stock or a portfolio of stocks conforms to the following process:

$$(3.1) \qquad \tilde{R}_t = \mu + \tilde{e}_t$$

where $\tilde{R}_t$ is the random portfolio return, $\mu = E(\tilde{R}_t | \phi_{t-1})$, ϕ_{t-1} is the information set available at $t - 1$ and $\tilde{e}_t$ is a random variable with zero mean, independently and identically distributed through time. A good summary of empirical work using the model (3.1) can be found in Rozeff and Kinney (1976) for the U.S.; Kendall (1953) for the U.K.; Officier (1975) for Australia, and Richards (1979) for a number of European countries.

Even though the random walk model implies stock market returns are time invariant, recent empirical evidence by Rozeff and Kinney (1976), Keim (1982) and Roll (1982) indicates that stock market return distributions are not time invariant in the U.S., and January returns are disproportionately larger than the returns in the remaining eleven months. Roll, following Branch (1977), claims that anomalous returns are due to the tax loss selling which has a disproportionate effect on small firms for reasons yet to be explained. Rozeff and Kinney and Keim also recognize this among other explanations for the abnormally high returns in January.

We can test the tax loss selling hypothesis directly by comparing month-to-month returns in other countries. If we observe unusually large returns for the months following the end of the tax year, this evidence should provide direct support for the tax loss hypothesis. Furthermore, the stock market returns data in this study are calculated from value-weighted stock market indices. If the evidence is consistent with the tax loss selling hypothesis, then tax selling depresses the market as a whole as opposed to a disproportionate effect on small firms as observed in the U.S.

Existence of seasonality due to the possible differences in month-to-month stock returns implies the following process for stock returns:

$$(3.2) \qquad \tilde{R}_{tm} = \mu + \tau_m + \tilde{e}_{tm}$$

where m denotes the month of the year and $\tilde{e}_t$ is idd with zero mean. Assuming that the model (3.1) is the true model, we can test whether expected rates of return conditional on the month of the year are equal by the following null hypothesis.

$$(3.3) \qquad \text{Ho:} \quad \tau_1 = \tau_2 = \ldots \tau_{12}$$

Rejection of the null hypothesis in (3.4) implies that stock market return distributions are not time invariant. Furthermore, the tax loss selling hypothesis can be directly tested by comparing the mean returns in the first month of the tax year with mean returns in the remaining eleven months. Formally the null hypothesis is:

$$(3.4) \qquad \text{Ho:} \quad \tau_1 > \tau_i \qquad i = 2, 3 \ldots 12$$

where τ_1 designates the first month of the tax year.

Tables 2 and 2a present month-to-month mean returns on CIP and IFS indices. Panel A in each table presents arithmetic means of stock returns for each month over the period 1/1959-12/1979. (For example, January mean return for a given country is a simple arithmetic average of returns realized in every January starting in January 1959.) There are 21 observations per month for countries in the CIP sample. The number of observations is 33 per month for the IFS data for most countries. Panel B presents the standard deviations for month-to-month mean returns, in Tables 2 and 2a. The most striking feature of the month-to-month mean returns is the predominantly large values for certain months, particularly in January.[2]

Another observation is the higher standard deviations associated with larger absolute values for mean returns. This is partly due to outliers in monthly returns in some countries. For example, the return for January 1974 was 53% in the UK. This is the maximum value of the UK sample. Likewise the return for the month of January 1975 is 47.6% for Singapore. Again, this is the maximum return for Singapore.

The tax loss selling hypothesis, of course, is valid for countries with similar tax codes as in the U.S. Particularly if capital gains from shareholding are not taxed, the tax loss selling hypothesis does not make any sense.

Information on tax years and tax rules for income from common stocks is presented in Table 3. It is prepared from Price Waterhouse Information Guides about doing business in various countries, or from interviews with Price Waterhouse officials.[3] Rules in Table 3 are applicable to a resident investor and a corporation. Different rules apply to taxation of non-resident investors and corporations.

In order to test the equality of expected mean returns for each month of the year, we use the following regression model:

$$(3.5) \qquad \tilde{R}_t = a_1 + a_2 D_{2t} + a_3 D_{3t} + \ldots a_{12} D_{12t} + \tilde{e}_t$$

where $\tilde{R}_t$ is the monthly stock return for month t and the dummy variables indicate the month of the tax year in which the return is observed. Months in our convention are indexed to the beginning of the tax year as opposed to the calendar year. For example, the first month is January if the tax year-end is December 31st for a particular country. On the other hand, the first month of the tax year for the UK is April since the tax year ends on April 5th in this country. Similarly, for Australia the first month of the tax year is July.

Using the above convention, the mean return for the first month of the tax year is measured by a_1, while a_2 through a_{12} represent the differences between the returns for the first month of the tax year and the return for the remaining eleven months. If the expected rate of returns is time invariant, the estimates of a_2 through a_{12} should be indistinguishable from zero, and the F-statistic measuring the joint significance of the dummy variables should be statistically insignificant.

Equation (3.5) is estimated by OLS for individual countries and also for the pooled sample of all countries. The results are given in Tables 4 and 4a for the CIP and IFS data respectively. Regression estimates of the pooled samples are shown in the last lines of Tables 4 and 4a. Two interesting results emerge from the pooled regressions. First, there is a strong seasonality in the stock returns. Mean returns are not time invariant for the whole sample. The F-statistics for both regressions reject the equality of the regression coefficients a_2 through a_{12} at any conventional significance level. Second, the mean return in the first month of the fiscal year are

disproportionately large relative to the remaining eleven months for the whole sample.

These two results for the whole sample appear to be consistent with the tax loss selling hypothesis. The tax year, however, is the same as the calendar year for the majority of the countries in our sample; 16 out of 21. It is possible to reject the null hypothesis in equation (3.3) for the whole sample even though there are some differences among several countries. Therefore, individual country regressions should provide more information.

Regression estimates and test statistics for individual countries are reported in Tables 4 and 4a and the results are further summarized in Table 5 in order to make the comparison of differences among countries easier. The first column indicates the month of the fiscal year in which the tax loss selling hypothesis predicts disproportionately higher rates of return in relation to the remaining eleven months. Blank entries in Column (1) indicate countries with no capital gains tax. The tax selling hypothesis should not predict large mean returns for any particular month.

The second and third columns show the months in which large mean returns are observed for the CIP and the IFS sample respectively.

In the CIP sample, findings are not consistent with the tax loss selling hypothesis for Austria, the UK and the U.S. We cannot reject the hypothesis about the equality of monthly mean returns for these countries. There is evidence for seasonality in the stock returns for Australia and France caused by the abnormally large mean returns in December and January, respectively. January coincides with the beginning of the French tax year, while December does not signify any tax related event in Austalia.

Results from the IFS sample also confirm the overall findings above with some additional interesting results. Contrary to the tax loss selling

hypothesis, we do not observe any seasonalities in the mean return distribution for Austria and the U.S. as in the CIP sample. Australia, France and South Africa all have abnormally large mean returns in January.

The UK result deserves special attention with IFS data. As explained earlier, the January 1974 return is 53% and is an outlier for the U.K. This outlier is largely responsible for the unusually large mean return for January in the CIP data. With a longer period in the IFS data, the April mean return at the 10% confidence level is the largest mean return in relation to the remaining eleven months. This is perhaps the most interesting piece of evidence in support of the tax loss selling hypothesis.

Another country which deserves special attention is the U.S. Unlike Rozeff and Kinney (1976), we do not find seasonality in the U.S. stock market. This is due to the differences in the construction of the stock market indices used in our study and theirs. Both CIP and IFS stock price indices are value-weighted portfolios. Rozeff and Kinney used the equally-weighted NYSE price index in their study.

In order to compare the results of Rozeff and Kinney with ours, we report the month-to-month mean and standard deviations of stock returns for equally- and value-weighted NYSE indices in Table 6 for various time periods including the time period Rozeff and Kinney investigated. Both indices are constructed by CRSP. The difference in the returns on the two indices is the largest in January in relation to other months. In order to test the hypothesis that mean returns are time invariant, we reestimated equation (3.5) for the equally- and value-weighted NYSE indices. Panel C of Table 6 presents these results. There is seasonality only in the returns on the equally-weighted index, and the January mean return is significantly the largest in relation to the remaining eleven months. This anomaly, also reported by previous

researchers, confirms Branch's (1977) hypothesis that tax loss selling might affect different segments of the market disproportionately, and particularly, that such selling activity might affect small firms more than large firms. As Keim reported, returns on small firms are extremely large in January, and this is the most likely reason for the abnormally high January mean return observed in the equally weighted index.

Results so far are interesting yet very puzzling. Like previous researchers in this area, we do not have any explanation why tax loss selling affects smaller firms in the U.S. Without an analysis with disaggregated data, we can only conjecture that these anomalies are most likely caused by tax loss selling in thin markets. Roll's most recent findings support this view for the U.S. data. He shows, although with a very small set of data, abnormally large daily returns in the U.S. a few days before and after the end of the tax year, belong to very small firms that are very infrequently traded and have very small share prices.

We do not have much information about the depth of capital markets in other countries. Both the IFS and CIP indices are value-weighted indices, therefore size effect cannot explain most of our results. Furthermore, most of the stocks in both indices are indeed the largest firms in those countries. For most countries the number of traded stocks is actually much smaller than the U.S. If the tax loss selling is the primary cause of selling and buying activity right before and after the end of the tax year, the end of the tax year effect might be an indication of the depth of capital markets in those countries.

Although we do not have a convincing explanation why tax selling affects stock returns, our findings above also have important implications for empirical work in capital markets. The results for the U.S. alone should

remind us of Roll's (1976) warning about the choice of the market index. Strong seasonality in stock returns may create serious econometric problems in measuring risk-return and pricing relations in other countries, as well as in the U.S.

3.1 Non-Parametric Tests

As indicated earlier, there are a number of outliers in the stock return data. Regression estimates generally tend to be sensitive to outliers in small samples. In this section we use non-parametric methods developed by Friedman (1937) and Kruskal and Wallis (1952) to provide further tests of the existence of seasonality in international stock market return distribution. These tests require no distributional assumptions. Furthermore, since they use the rankings of the observations they are not as sensitive to outliers in small samples as regression analysis.

We use Friedman's (1937) test to investigate the seasonality in the stock markets for the whole sample. Friedman's test assumes that common stock returns are generated by the following model:

$$(3.7) \qquad \tilde{R}_{jm} = \mu + \beta_j + \tau_m + \tilde{e}_{jm}$$

where μ is the unknown mean, β_j is the effect associated with the j^{th} country, τ_m is the month effect, $\tilde{e}_{jm}$ is the disturbance term such that e's are mutually independent and each e comes from the same population. This test is explained in detail in Hollander and Wolfe (1973). The time invariance of the mean returns implies the following null hypothesis:

$$(3.8) \qquad Ho: \ \tau_1 = \tau_2 = \ldots \tau_{12}$$

The test statistic is approximately distributed as chi-square with 11 degrees of freedom. Month index m designates months with respect to the tax year

instead of the calendar year as before. The test statistics are 91.28 and 82.34 for the CIP and IFS data respectively, we, therefore, reject the null hypothesis at any conventional confidence level. Confirming our previous findings, there is a strong seasonality in international capital markets and this seasonality is associated with the beginning of the tax year for the whole sample.

We use the Kruskal-Wallis test to analyze the seasonality of stock market returns for individual countries. The Kruskal-Wallis test assumes that stock market returns are generated by the same model described in equation (3.2), and it is used to test the same null hypothesis shown in equation (3.4) which states that twelve months have all identical mean returns. Like the Friedman test, this test does not require any distributional assumptions. It only assumes that the disturbance term e's in equation (3.2) are mutually independent and each e comes from the same continuous population. The test statistic is also approximately distributed as chi-square with 11 degrees of freedom. Tables 7 and 7a present the Kruskal-Wallis test results for the CIP and IFS samples respectively. Panel A in these tables indicates the test statistic and the probability level at which the null hypothesis is accepted.

Panel B shows the month with the highest mean return in relation to the remaining eleven months. We use a treatment versus control procedure developed by Miller (1916) to test whether a mean return in a particular month is greater than the remaining months. This procedure compares each month with a control month. We choose the first month of the tax year as the control month for countries with capital gains taxes and the month with the highest mean return for countries without capital gains tax. Hollander and Wolfe (1973) present a comprehensive explanation for this procedure.

Panel C shows the months for which the tax loss selling hypothesis predicts the highest mean returns.

Kruskal-Wallis test statistics provide strong evidence of seasonality in 12 out of 17 countries in the CIP sample and 17 out of 20 in the IFS sample. There is no evidence of seasonality for Austria, France, Italy, Singapore and the U.S. in the CIP sample and for Israel, New Zealand and the U.S. in the IFS sample.

The most striking feature of the results is again the occurrence of disproportionately larger mean returns in the first month of the tax year as predicted by the tax loss selling hypothesis. Austria, Italy and the U.S. are the three exceptions in the CIP sample. The results from the IFS sample produce much stronger evidence for the tax loss selling hypothesis. The U.S. is the only result inconsistent with it. We further repeated the Kruskal-Wallis test for the U.S. using the value- and equally-weighted NYSE indices.* As in the regression results, seasonality is present only in the equally-weighted NYSE index caused by disproportionately large mean returns in January. This result suggests that tax loss selling at least affects smaller firms in the US.

Results, particularly from the IFS sample, provide strong evidence for the tax loss selling hypothesis. There are, however, some peculiarities in month-to-month stock return distribution in a number of countries for which we have no explanation. First, as can be seen in Panel B of Tables 7 and 7a, there are at least one or two more months besides the first month of the tax year that have unusually large mean returns. February is a month with a high mean return for some countries. August also is another month with large mean returns in several countries. Another peculiarity is the existence of

seasonality in countries without capital gains tax. Australia and South Africa both have unusually large mean returns around January.

Rozeff and Kinney and Keim review several hyupotheses regarding the January seasonal in raw stock returns in the U.S. One of them is the information hypothesis. Rozeff and Kinney (1976) suggest "January marks the beginning and ending of several potentially important financial and informational events . . . January is the start of the tax year for investors, and the beginning of the tax and accounting years for most firms, and the preliminary announcements of the previous calendar year's accounting earning are made." According to Rozeff and Kinney, therefore, the beginning of the tax year is partly due to the new information provided by the firms at the end of the fiscal year.

While it is not possible to distinguish the tax loss selling hypothesis from the information hypothesis in those countries with a capital gains tax, results are not consistent with the information hypothesis in those countries with no capital gains tax. If the information hypothesis above explains the high mean returns in the first month of the tax year, we should observe high mean returns in the first month of the tax year in every country. Evidence from those countries with no capital gains tax should therefore be particularly important for the information hypothesis.

July and March are the beginning of the tax year in Australia and South Africa. Unusually high mean returns in January are observed. This is not consistent with the information hypothesis for these countries.[4] Observations for the countries of Israel, New Zealand, and Singapore also are not consistent with the information hypothesis. There is no evidence of seasonality in the mean stock returns for these countries. Evidence from France, on the other hand, is not conclusive. Even though there is evidence

for seasonality in the French stock market, unusually high mean returns are observed in August as well as in July and January. Altogether, the evidence does not seem to be supportive of the information hypothesis.

4. Conclusions

This paper empirically investigates the existence of seasonality in international capital markets and the end of the tax year selling pressure as a possible explanation for this phenomenon.

We found strong seasonality in the stock market returns in most of the countries. The seasonality seems to be caused by the disproportionately large mean returns in the first month of the tax year in countries where capital gains from security holdings are taxed. In countries where there are no capital gains, there is either no seasonality in stock returns or, if there is seasonality, large mean returns are not related to the beginning of the tax year.

Our findings support the tax loss selling hypothesis. This hypothesis predicts a downward pressure on prices of stocks which have declined during the year as investors sell them to realize capital losses. After the end of the tax year, the price pressure disappears and prices reach equilibrium level, causing disproportionately large returns during the first month of the tax year. While tax loss selling seems to affect smaller firms in the U.S., it appears to affect the whole market in other countries.

FOOTNOTES

[1]There is a significant volume of research focusing on the autocorrelation functions of the stock market returns. Most of these studies deal with the question of efficiency of the stock market, following Fama (1965, 1970), and investigate the seasonality in stock markets with the autocorrelation function. We test seasonality in terms of differences in the month-to-month mean stock returns. Therefore, high first order autocorrelations are not an important problem for our study.

[2]For the sake of brevity, we do not report other summary statistics for month-to-month mean returns as in Table 1. While summary statistics for monthly returns are consistent with normal distribution in Table 1, this is not the case for month-to-month mean returns for many countries in our sample.

[3]Table 3 provides very short summary information in order to facilitate the comparison of taxation of income from common stocks among countries. Tax rules in many countries are as complex and numerous as in the U.S., and in some cases, more complicated than the U.S. tax rules. Price Waterhouse should not be held responsible for any errors in Table 3. We might have made some errors while summarizing lengthy rules.

[4]Corporations can, however, choose accounting periods different than the usual fiscal year in these countries with the permission of the tax authorities. Rozeff and Kinney (1976) mention the existence of large returns in July for Australia for the 1959-1972 period. Praetz (1973) also reports peaks in January-February and July-August. We did find high mean returns for July for the 1959-1972 period. Mean returns are, however, much larger for December for the CIP data and January for the IFS data.

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TABLE 1: SUMMARY STATISTICS AND AUTOCORRELATIONS OF

MONTHLY STOCK RETURNS, 1/1959-12/1979: CIP INDICES

COUNTRY	ρ_1	ρ_2	ρ_3	ρ_4	ρ_5	ρ_6	ρ_7	ρ_8	ρ_9	ρ_{10}	ρ_{11}	ρ_{12}	MEAN	σ	Skew-ness	Kurto-sis	S.R.
Australia	.067	.062	.039	-.079	-.078	.017	.028	.036	.168*	.004	.050	.057	.7544	5.679	.432	3.010	7.905
Austria	.315*	.219*	.034	-.004	-.008	.160*	.081	.090	.061	.064	.095	.149*	.4586	3.177	2.303	11.713	10.065
Belgium	.090	-.052	.145*	-.053	-.109	.072	-.049	-.174*	.094	.036	-.052	.127*	.1557	3.332	-.001	1.261	7.347
Canada	.099	-.073	.115	.015	.045	.048	.094	-.099	.038	-.003	.030	.093	.7054	4.334	-.035	.909	6.413
Denmark	.291*	.183*	.139*	.147*	.123	.181*	.143*	.110	.050	-.116	-.045	.024	.2473	3.335	.734	4.076	8.901
France	.024	-.012	.039	-.013	-.049	.062	-.065	-.080	.139*	.061	-.029	.038	.4578	5.609	.482	.987	7.111
Germany	.169*	.016	-.018	.045	.036	.096	.027	-.031	.055	.086	.060	.049	.4281	5.051	.588	1.271	6.764
Italy	.121	-.099	-.120	.017	.124	.101	.039	-.045	.070	.148*	.087	.025	.2291	6.312	.388	.562	6.527
Japan	.048	.060	-.036	.018	.011	-.019	.028	-.003	-.027	.061	.072	-.042	.9924	4.967	.053	.891	6.120
Netherlands	.104	.002	.061	-.078	-.024	-.031	-.026	-.087	.123	.059	.079	.115	.2459	4.450	.190	1.666	7.515
Norway	.175*	-.022	.194*	.000	.026	.240*	.033	-.066	.190*	.077	-.084	.064	.6857	5.754	.732	2.603	7.690
Singapore[a]	.206*	-.065	-.102	.031	.031	.133	-.063	.079	.123	.075	.028	.076	1.5056	10.170	1.241	4.618	6.850
Spain	.040	-.041	.104	.059	.052	.175*	.037	.014	.050	.120	.088	.152*	.3183	4.203	-.049	.833	6.176
Sweden	.027	-.085	.111	.015	-.054	.093	.011	-.036	-.002	.103	-.102	.044	.4471	4.173	-.079	-.128	4.949
Switzerland	.060	-.128*	.107	.034	.042	.013	.033	.031	.124	.087	-.063	.060	.5518	5.289	.346	1.157	7.239
UK	.150	-.072	.139*	.018	-.185*	-.029	.045	-.009	.035	-.038	-.033	.084	.7433	6.543	2.107	16.421	11.173
USA	.035	-.046	.059	.064	.043	-.130*	-.101	-.022	.052	-.097	-.017	.112	.3320	4.016	.018	1.310	7.276

[a]Data available for the period of 1/1970-2/1980. *Sample autocorrelation is at least two standard deviations to the left or to the right of its expected value under the hypothesis that the true autocorrelation is zero. σ is standard deviation; S.R. is studentized range. Means and standard deviations are multiplied by 100.

TABLE 1a: SUMMARY STATISTICS AND AUTOCORRELATIONS OF

MONTHLY STOCK RETURNS, 1/1947-12/1979: IFS INDICES

COUNTRY	ρ_1	ρ_2	ρ_3	ρ_4	ρ_5	ρ_6	ρ_7	ρ_8	ρ_9	ρ_{10}	ρ_{11}	ρ_{12}	MEAN	σ	Skew-ness	Kurto-sis	S.R.
Australia	.356*	.089	.098	-.004	-.079	-.004	.067	.120	.052	.031	.038	.060	.4660	3.375	-.292	3.016	8.752
Austria	.305*	.193*	.078	.073	.121*	-.039	.045	.100	.069	.026	.140*	.151*	.5642	4.095	.915	8.425	11.175
Belgium	.049	-.037	-.057	-.050	-.037	-.036	-.015	-.053	-.033	-.010	.100	.121*	.1527	3.695	.299	1.287	7.719
Canada	.172*	-.007	.024	.024	.031	.018	-.088	-.039	-.039	-.013	.016	.118*	.6677	4.182	.133	6.041	11.703
Denmark	.293*	.221*	.171*	.134*	.034	.063	.118*	.145*	.094	-.054	-.054	-.035	.3763	3.012	.311	6.269	11.022
Finland	.282	.021	.000	.045	.087	.178*	.124*	.041	.036	.079	.056	.072	.7868	4.726	.715	3.483	9.187
France	-.054	-.015	.132*	-.082	.042	.057	-.087	-.009	.026	.017	-.019	.037	.7321	6.003	1.446	13.225	12.664
Germany[a]	.377*	.106	.067	.104	.130*	.072	.039	.045	.082	.152*	.116*	.090	.6581	4.248	1.150	5.467	9.261
Israel[b]	-.019	.152*	.030	.044	.141*	.019	.120	.096	.065	.012	.178*	-.029	1.5913	6.701	1.601	13.576	12.370
Italy	.244*	-.043	-.118*	.015	.002	-.105*	-.032	-.067	.039	.051	.137	.143	.5538	6.707	1.277	8.513	10.820
Japan	.243*	.022	-.065	.031	.064	-.005	-.054	-.116*	.137*	.117*	.072	.018	1.6066	7.051	.822	5.519	9.944
Netherlands	.268*	.105*	-.014	.000	-.045	-.041	-.061	.018	.071	.108*	.148*	.099	.3050	3.903	-.311	1.377	7.793
New Zealand	.250*	.179*	.102	.032	-.012	-.019	-.015	.052	.106	.100	.078	.012	.3781	2.847	-.212	3.524	9.709
Norway	.114*	.032	.020	.006	.050	.136*	.027	-.053	.064	.027	.032	.067	.3188	4.987	.348	4.253	8.154
South Africa	.404*	.075	.064	.028	-.021	.047	.115*	.123*	.128*	.082	.091	.112*	.4014	4.025	-.224	.769	6.486
Spain	.124*	-.063	.061	.041	.112*	.168*	.066	-.023	.026	.089	.046	.178*	-.1883	3.940	-.022	.416	6.079
Sweden	.092	-.061	.071	.032	-.043	.079	-.022	.007	-.019	.044	.030	.048	.5033	3.722	.578	4.296	9.564
Switzerland	.163*	-.130*	-.021	.157*	.100	-.004	.019	.079	.135*	.101	.037	.014	.3012	4.326	-.009	3.080	9.523
UK	.259*	.016	.010	.074	-.039	-.045	.030	.030	.022	.001	.021	.068	.5073	5.318	1.070	10.840	11.472
USA	.223*	-.017	.071	.077	.042	-.114	-.071	.063	-.020	-.037	.080	.036	.5907	3.347	-.439	.803	6.817

*Sample autocorrelation is at least two standard deviations to the left or to the right of its expected value under the hypothesis that the true autocorrelation is zero. σ is standardized deviation; S.R. is studentized range. Means and standard deviations are multiplied by 100. [a]Data covers the period 1/1952-12/1979. [b]Data covers the period 1/1956-12/1979.

TABLE 2: MONTH TO MONTH MEAN AND STANDARD DEVIATIONS OF STOCK RETURNS, 1/1959-12/1979: CIP INDICES

PANEL A: MEANS[a]

COUNTRY	January	February	March	April	May	June	July	August	September	October	November	December
Australia	2.649	-.581	.506	.841	.973	.428	.662	-.365	-2.387	2.130	-.848	3.993
Austria	.743	.890	.239	-.414	.067	.213	1.237	-.899	.021	-.224	.651	1.233
Belgium	3.215	1.085	.395	1.482	-1.355	-.840	1.441	-1.166	-1.866	-.688	.415	-.089
Canada	2.900	.068	.789	.408	-.963	-.300	.689	.600	-.061	-.820	1.435	2.611
Denmark	3.041	-.407	-1.191	.584	.448	.383	.506	-.138	-1.297	.264	-.900	2.037
France	3.722	-.176	1.983	.936	-.156	-1.902	1.529	1.028	-1.214	-.719	.433	.152
Germany	3.099	-.142	1.048	-.605	-.016	-.948	1.559	2.243	-1.681	-.936	1.356	.092
Italy	2.229	.865	.737	.723	-1.303	-.411	-.573	2.346	-.724	-1.292	-.255	-.171
Japan	3.529	1.128	1.877	.301	.975	2.059	-.321	-.829	-.133	-.976	1.646	1.798
Netherlands	3.762	-.474	1.298	1.387	-.982	-1.436	.492	-.283	-1.911	-.246	-.102	1.308
Norway	4.336	-1.176	-.627	2.363	.291	1.953	3.010	.366	-1.559	-.508	.419	-.320
Singapore[b]	10.591	-.418	2.093	-2.315	4.015	.307	-.487	-.375	-.954	2.350	-1.966	5.227
Spain	2.241	1.294	.321	1.588	-1.873	.062	.794	1.290	-1.641	.189	-.436	-.009
Sweden	3.996	.383	1.006	.879	-.795	-.246	2.409	-1.048	-1.335	-.673	-.173	.823
Switzerland	4.585	-.747	.395	.858	-1.267	-.020	.647	1.746	-1.536	-.194	.985	1.266
UK	3.406	.687	1.248	3.129	-1.212	-1.689	-1.112	1.883	-.239	.798	-.607	2.063
USA	1.041	-.410	1.266	.959	-1.384	-.560	.139	.338	-.795	.780	1.027	1.419

[a]Means and standard deviations are multiplied by 100. Number of observations is 21 for each month. [b]Data are available for the period 1/1970-12/1979.

TABLE 2: MONTH TO MONTH MEAN AND STANDARD DEVIATIONS OF

STOCK RETURNS, 1/1959-12/1979: CIP INDICES

PANEL B: STANDARD DEVIATIONS[a]

COUNTRY	January	February	March	April	May	June	July	August	September	October	November	December
Australia	5.755	4.801	3.055	6.243	5.528	4.429	5.935	4.555	6.975	6.957	4.215	5.451
Austria	2.398	2.204	1.761	1.844	3.076	5.604	5.645	2.289	2.205	2.096	3.270	2.515
Belgium	3.612	3.190	2.319	3.042	3.875	2.731	2.481	3.426	3.279	2.979	3.451	2.259
Canada	5.256	2.739	2.785	4.542	4.183	4.282	3.227	4.431	4.299	4.519	5.101	3.561
Denmark	3.050	2.457	3.118	2.798	3.340	2.873	2.696	2.576	2.825	4.731	4.019	2.832
France	7.303	4.397	7.243	4.316	4.822	5.235	5.680	5.212	7.132	4.721	5.355	3.453
Germany	4.713	4.027	2.742	4.298	7.854	6.067	4.940	5.764	3.467	4.760	5.793	3.131
Italy	5.908	4.883	6.106	4.898	6.751	7.261	6.486	7.326	8.448	5.979	5.531	5.502
Japan	3.003	3.702	5.198	4.683	5.385	3.714	4.675	5.705	5.028	4.337	6.769	5.677
Netherlands	5.620	3.495	3.673	3.293	4.735	4.153	3.826	5.194	4.522	3.670	5.421	3.170
Norway	6.296	4.153	4.840	7.326	6.076	6.080	2.801	5.550	6.613	6.537	5.417	4.013
Singapore[b]	15.013	9.972	8.462	8.947	8.939	5.980	7.722	8.585	7.289	5.564	14.259	13.742
Spain	5.019	3.409	4.526	4.509	3.113	3.260	4.876	3.454	4.665	2.973	4.930	4.014
Sweden	5.951	3.333	2.847	3.945	3.326	2.945	3.144	3.211	2.849	3.788	3.503	2.552
Switzerland	6.294	3.063	8.533	5.550	6.704	4.848	5.042	6.148	4.270	4.839	6.424	3.999
UK	12.447	6.782	6.615	5.782	4.884	4.451	4.758	6.243	5.106	5.930	5.785	5.092
USA	5.626	3.059	2.408	4.359	3.434	3.627	4.261	3.914	3.960	5.435	4.104	2.540

[a]Means and standard deviations are multiplied by 100. Number of observations is 21 for each month. [b]Data are available for the period 1/1970-12/1979.

TABLE 2a: MONTH TO MONTH MEAN AND STANDARD DEVIATIONS OF

STOCK RETURNS, 1/1947-12/1979: IFS INDICES

PANEL A: MEANS

UNTRY	January	February	March	April	May	June	July	August	September	October	November	December
stralia	2.818	.894	-.530	.037	.981	.018	1.006	.426	-.194	-.371	-.062	.640
stria	2.132	.445	-.883	-.631	-.763	.439	.312	.839	2.537	1.721	.824	-.145
lgium	3.271	.760	-.527	.750	-.918	-.553	1.346	.699	-1.592	-1.181	-1.008	.884
nada	3.185	.414	.632	1.428	.432	-.224	.413	.540	-.168	-1.083	1.542	.975
nmark	2.022	.696	.492	1.388	.839	.069	.335	-.011	-.585	-.381	-1.293	.994
nland	5.360	.592	1.589	.680	-.445	.185	2.211	1.550	-.193	-.739	-1.393	.145
ance	3.632	-.894	1.789	.716	.081	-.334	2.005	2.555	.425	-1.096	-.373	.358
rmany[a]	1.993	.937	.791	1.410	-.504	-.171	-.064	3.320	-.403	-1.069	.723	.828
rael[b]	1.477	1.579	2.496	1.717	1.136	2.411	1.572	1.881	3.862	1.333	.049	-.221
ly	2.614	1.116	1.379	.989	.884	-1.055	-.092	3.672	-.224	-1.079	-1.069	-.713
an	4.603	4.329	.685	.791	2.778	.737	1.613	.395	.497	-.340	.988	2.281
herlands	2.455	1.135	.499	1.843	-.009	-.458	-.077	.507	-.415	-1.320	-1.057	.639
Zealand	1.070	.230	.536	.782	1.118	.560	.171	-.187	-.101	-.476	-.262	.957
way	3.616	.947	-.857	.458	-.123	-.024	1.864	2.266	-.665	-1.535	-1.369	-.573
th Africa	2.559	1.029	-.012	.564	-.251	-1.561	-.433	1.027	.699	.714	-.055	.392
in	1.337	1.094	.158	.764	-1.921	-2.140	-1.047	2.284	-.396	-.583	-.561	-1.370
den	3.725	.170	.225	.688	.683	.008	2.246	-.516	-.683	-1.287	-.062	.823
tzerland	3.174	.449	-.095	.400	-.013	-1.522	.358	2.005	-.330	-1.227	-.330	.731
	1.377	.367	.688	3.115	.898	-1.636	-.427	.830	.539	.565	-1.184	.706
	1.682	.158	.861	1.315	.229	-.145	.693	.222	.191	-.073	.367	1.399

[a]a is available for the period 1/1952-12/1979. [b]Data is available for the period 1/1956-12/1979.

TABLE 2a: MONTH TO MONTH MEAN AND STANDARD DEVIATIONS OF

STOCK RETURNS, 1/1947-12/1979: IFS INDICES

PANEL B: STANDARD DEVIATIONS

UNTRY	January	February	March	April	May	June	July	August	September	October	November	December
tralia	2.565	3.539	2.853	2.638	3.451	3.595	2.684	3.831	4.096	3.068	3.590	3.368
tria	3.223	3.413	4.474	2.383	3.985	4.760	5.514	2.843	3.830	5.588	3.773	2.923
gium	4.003	3.583	2.998	3.326	3.852	3.719	3.413	3.760	3.890	2.745	2.491	3.935
ada	5.256	2.739	2.785	4.542	4.183	4.282	3.227	4.431	4.299	4.519	5.101	3.560
mark	2.498	2.006	2.830	2.566	2.569	2.091	2.408	2.348	2.682	3.969	4.924	2.902
land	5.825	4.168	5.027	5.945	4.457	3.283	4.448	3.835	3.938	4.264	4.508	3.376
nce	11.061	6.635	6.461	4.247	4.934	5.396	5.490	4.220	5.595	4.594	5.019	4.221
many	3.018	3.041	2.557	3.092	4.726	5.103	4.883	6.357	3.234	4.278	4.291	3.634
ael	6.106	5.523	5.640	6.134	6.164	5.213	5.364	7.307	11.219	4.863	6.976	7.919
y	6.626	5.009	7.888	10.745	4.986	6.537	5.664	5.641	6.231	6.369	5.967	6.030
n	10.583	6.603	7.921	7.397	6.521	5.724	6.178	6.909	4.590	6.392	6.538	7.200
erlands	3.652	3.543	2.174	3.557	3.856	4.180	3.155	3.650	3.804	3.972	4.978	4.534
Zealand	2.699	2.203	2.319	2.502	3.303	4.101	2.867	2.306	2.115	2.829	3.028	3.131
ay	6.392	3.777	2.529	4.715	5.165	4.945	3.389	4.933	5.614	5.371	5.409	3.014
h Africa	3.743	3.873	3.321	4.384	3.978	4.160	3.071	4.003	4.536	3.521	4.175	4.411
n	4.191	3.198	4.839	4.182	3.329	3.420	3.535	3.660	4.221	3.242	4.245	2.788
en	5.951	3.333	2.847	3.945	3.326	2.945	3.144	3.211	2.849	3.788	3.503	2.552
zerland	3.284	3.590	2.964	3.687	4.868	5.234	4.036	4.745	5.048	4.019	4.834	3.514
	6.072	8.899	4.283	4.054	5.238	3.833	3.869	5.962	4.407	4.771	4.854	4.869
	3.149	3.524	2.457	3.042	3.770	3.407	3.229	3.895	3.513	3.027	3.455	3.380

TABLE 3: TAXATION OF DIVIDENDS AND CAPITAL GAINS IN VARIOUS COUNTRIES

PANEL A: INDIVIDUALS
Page One

COUNTRY	End of Tax Year	Dividends	Capital Gains
Australia	June 30	Taxable as personal income.	Not taxable.
Austria	December 31	20% withholding tax.	Not taxable if an asset held more than a year; otherwise, above AS6,000 is taxed as ordinary income.
Belgium	December 31	Subject to 20% withholding tax plus a fraction is taxed at personal rate; net effect is 24% tax rate on dividends for an individual at 50% tax bracket.	Not taxable unless an individual owns 25% or more of a company's shares.
Canada	December 31[a]	Canada uses an imputation system under which shareholder receives credit against his personal income for a portion of the tax paid by the corporation; net effect is 25% rate or less for a shareholder at the top 50% tax bracket.	Since 1/1/1972, 50% of gains are taxed at ordinary income rate.
Denmark	December 31	30% withholding tax.	If held less than two years, taxed at ordinary income rate; otherwise, 50% flat tax on capital gains.
Finland	December 31	30% withholding tax at the source; dividends of FIM 1500 are free from income tax.	Taxable if held less than five years.
France	December 31	Dividends paid by French companies entitle the shareholders to a tax credit of 50%; this represents a reimbursement of half of the corporate income tax paid by the company distributing the dividend; effectively dividends are taxed at 50% of personal income tax rate.	Taxable since 1/1/1979; habitual traders are taxed at 30% and others are taxed at 15% flat rate.
Germany	December 31	Shareholders are required to include in taxable income the gross dividends received; this comprises the net cash payment received, the withholding tax deducted at source, and 36% imputation tax credit paid; these taxes may be offset against the shareholder's tax liability.	Not taxable if shares are held more than 6 months; substantial holdings are taxed at special rates; speculative gains (shares held less than 6 months) are taxed as personal income.
Israel	March 31	Taxable as ordinary gains.	Not taxable except traders.
Italy	December 31	Dividends are subject to 10 or 30% withholding tax at the option of the shareholder; if 10% is chosen, shareholder must declare the dividend, which is subject to personal income tax; recipient is entitled to a tax credit of one-third of the amount of dividends; credit is added to taxable income and deducted from the relative tax due.	Not taxable.
Japan	December 31[a]	Not taxable unless nonsalary income is more than 250,000 yen; individuals with income less than 10 million yen do not file returns; taxes are withheld at the corporate level.	Not taxable.

TABLE 3: TAXATION OF DIVIDENDS AND CAPITAL GAINS IN VARIOUS COUNTRIES

PANEL A: INDIVIDUALS
Page Two

UNTRY	End of Tax Year	Dividends	Capital Gains
therlands	December 31	Taxed at the individual income tax rate; corporations must withhold 25% from dividends at the source; shareholders may offset this deduction against overall income tax liability.	Capital gains not arising from the exercise of a business or a profession are not taxable, except if seller has held a substantial interest in the preceding 5 years.
w Zealand	March 31	Taxable as personal income; $NZ200 is tax exempt.	Not taxable.
rway	December 31	Dividends are subject to state income tax only.	50% flat rate if shares are held less than five years; no tax on gains if shares are held more than five years; short term losses can be used to offset against income, but long term losses cannot be used.
ngapore	December 31	Taxable as ordinary income; dividends have tax at the company rate withheld; this tax is credited against any tax due at personal rates when individual shareholders are assessed on the gross dividend income.	No capital gains tax.
uth Africa	February 28 or 29	Taxable as gross personal income; a percent deduction is made in determining taxable income.	Not taxable.
ain	December 31[a]	Dividends are subject to 15% withholding tax; dividends are included in the gross personal income; withholding tax is credited toward final tax liability.	Taxable as irregular income and can be spread over the years in which the income arose; losses are treated the same way, except final loss in a year can be carried forward to the five immediate successive tax periods.
eden	December 31[b]	Taxable as personal income.	Short term gains (shares held less than two years) are taxed as ordinary income; if shares are owned more than five years, there is no capital gains tax; if owned less than five years, a portion of capital gain is included as capital gain.
tzerland	December 31	Taxable as personal income; dividends are subject to 35% withholding tax; shareholders can recover the tax withheld provided the gross dividend and the value of the investment are subject to tax.	Not subject to tax in most contons or under federal income tax.
	April 5	A tax credit attaches to dividends received by a shareholder and in the case of an individual, covers his liability to income tax at the basic rate; tax at the higher rates and the investment income surcharge are imposed on the aggregate amount of the dividend and the related basic tax credit.	Capital gains tax applies to gains and losses since April 6, 1965; assessments are made for each fiscal year on the total amount of taxable gains arising in the year, after deducting allowable losses arising in the year and any unrelieved losses of earlier years.
	December 31	Dividends received by shareholders are includible in gross income; a deduction for dividends received or a dividend exclusion may be available.	Although capital gains are includible in gross income, a special deduction with respect to net long-term gains from the sale of assets (generally held more than a year) results in a maximum of 28% tax; this special deduction is equal to 60% of the excess of net long-term capital gain over net short-term capital loss; net capital losses are deductable only to the extent of $3,000.

e tax year of a corporation can be the fiscal period which it has adopted for accounting purposes. [b]The tax year-end for a company or an individual rrying on business may be fixed at any of the following dates: April 30, June 30, August 30, and December 30.

TABLE 3: TAXATION OF DIVIDENDS AND CAPITAL GAINS IN VARIOUS COUNTRIES

PANEL B: CORPORATIONS
Page One

COUNTRY	End of Tax Year	Dividends	Capital Gains
Australia	June 30	Dividends are included in assessable income; a full rebate of tax is allowed for resident corporations, which effectively frees the dividend from tax.	Not taxable.
Austria	December 31	Taxed at $\frac{1}{2}$ rate; not taxable if receiving company held 25% of paying company's share capital continuously for at least 12 months prior to the end of its accounting period.	Taxable as ordinary operating profit.
Belgium	December 31	95% of dividend income is tax exempt for permanent participants; for non-permanent participants, similar to individual shareholders; effective rate is 21% at 48% corporate tax rate.	Taxable as ordinary income.
Canada	December 31[a]	Generally not taxable; dividends received by a private corporation may be subject to a special refundable tax.	Effective 1/1/1972, 50% of realized gains is included in income subject to tax.
Denmark	December 31	30% tax on all dividends declared; no withholding tax on profits remitted by a branch or a subsidiary to its head office.	Not taxable if held more than two years; otherwise, taxed as ordinary profits.
Finland	December 31	Dividend income is tax exempt.	No capital gains tax.
France	December 31	Same as individuals.	Short term net capital gains (shares held less than two years) are taxed at 50% rate, or it can be spread over three years; net losses are fully deductable from operating profits; long term gains are taxed 15% or can be used to offset prior long term losses; long term losses are not deducted from operating income; it can be carried over 10 years to offset long term gains.
Germany	December 31	Dividends from a holding of less than 25% in the voting shares of another company are taxed at corporation profit tax rate; the recipient is obliged to include the total of the net cash receipt, the 36% imputed tax credit and the withholding tax (normally 25%) in its taxable income, but may offset the imputed tax credit and the withholding tax against its own tax liability.	Taxable as ordinary business income.
Israel	March 31	N/A	Not taxable.
Italy	December 31	Same as individual shareholders.	Capital gains are taxable as ordinary profits; gains may be exempt within certain limits if reinvested.
Japan	December 31[a]	Not taxable.	Taxable as ordinary income.
Netherlands	December 31	With the exception of certain intercompany dividends, dividends are taxable as ordinary income.	Taxable at normal corporate tax rate.

TABLE 3: TAXATION OF DIVIDENDS AND CAPITAL GAINS IN VARIOUS COUNTRIES

PANEL B: CORPORATIONS
Page Two

COUNTRY	End of Tax Year	Dividends	Capital Gains
New Zealand	March 31	Dividend income is tax exempt.	No capital gains tax.
Norway	December 31	Dividends are subject to state income tax only (current rate 27.8%); intercompany dividends are treated as ordinary dividends; a corporation is entitled to a deduction of the amount of profit distributed to the shareholders out of current year's income.	Profit exceeding N.Kr.500 on sale of shares and held for less than five years is subject to a special flat tax rate of 50%; losses on such sales may be offset against profits in the subsequent five years; for shares held more than five years, there is no capital gains tax and losses are not deductable.
Singapore	December 31	Same as individuals; dividends are included in taxable profits; tax withheld is credited against tax liability.	No capital gains tax.
South Africa	February 28 or 29	Not taxable.	No capital gains tax.
Spain	December 31[a]	Dividends must be included in gross for determining taxable income; a concomitant tax credit is then granted against the corporate tax liability equivalent to the tax withheld at the source; this is true for intercompany dividends.	Taxable as ordinary profit.
Sweden	December 31[b]	Dividends are taxed as income from capital; intercompany dividends are not taxable if (a) shareholding represents 25% or more of the total voting power or (b) shareholding has an operational or organizational origin.	If shares are held for less than two years, gains are included as ordinary profit; if held more than two years, 40% of the gains are included in taxable income; losses are treated the same way.
Switzerland	December 31	Taxable as ordinary income.	Taxed as ordinary profit.
UK	April 5	Dividends from the UK companies are tax exempt from corporation tax.	Capital gains tax is introduced as from April 6, 1975; gains less losses are included in the total corporation tax assessment on the company for each accounting period; by means of abatement, they are taxed at an effective rate of 30%.
USA	December 31	A corporation is entitled to certain special deductions; a deduction is generally allowed equal to 85% of dividends received from taxable domestic corporations; this 85% deduction cannot exceed 85% of the corporation's taxable income computed without deductions for net operating losses, capital loss carrybacks and dividends received; this limitation is not applicable if the corporation has a net operating loss.	The excess of the net gain from all sales or exchanges of capital assets held more than a year over any net loss from sales or exchanges of capital assets held one year or less, is termed net long-term capital gain and generally taxed at a flat rate of 28%, if such rate is preferable to the regular rates (net short term gain is taxed as ordinary income); a net loss is not deductable from ordinary income; such a loss is generally carried back three years and forward five years.

[a]The tax year of a corporation can be the fiscal period which it has adopted for accounting purposes. [b]The tax year-end for a company or an individual carrying on business may be fixed at any of the following dates: April 30, June 30, August 30, and December 30.

TABLE 4: TEST OF EQUALITY OF MONTHLY MEAN RETURNS

1/1959-12/1979: CIP INDICES

$$\tilde{R}_t = a_1 + \sum_{j=2}^{12} a_j D_{Jt} + \tilde{e}_t$$

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COUNTRY	a_1	a_2	a_3	a_4	a_5	a_6	a_7	a_8	a_9	a_{10}	a_{11}	a_{12}	R^2	F-statistic	Degrees of Freedom
Australia	.662 (.56)	-1.027 (-.61)	-3.049 (-1.82)	1.468 (.87)	-1.511 (-.90)	3.331 (1.98)	1.987 (1.18)	-1.243 (-.74)	-.156 (-.09)	.178 (.11)	.311 (.19)	-.234 (-.14)	.0854	2.04 (.0258)	11,240
Austria	.743 (1.06)	.147 (.15)	-.504 (-.51)	-1.157 (-1.17)	-.676 (-.68)	-.530 (.53)	.493 (.50)	.156 (.16)	-.722 (-.73)	-.968 (-.98)	-.093 (-.09)	.490 (.49)	.0279	.63 (.8075)	11,240
Belgium	3.215 (4.76)	-2.130 (-2.23)	-2.821 (-2.95)	-1.732 (-1.81)	-4.571 (-4.78)	-4.056 (-4.24)	-1.775 (-1.85)	-4.381 (-4.58)	-5.082 (-5.32)	-3.903 (-4.09)	-2.801 (-2.93)	-3.305 (-3.46)	.1777	4.72 (.0001)	11,240
Canada	2.900 (3.19)	-2.831 (-2.20)	-2.111 (-1.65)	-2.491 (-1.94)	-3.864 (-3.01)	-3.200 (-2.49)	-2.211 (-1.72)	-2.299 (-1.79)	-2.961 (-2.31)	-3.720 (-2.90)	-1.465 (-1.14)	-.288 (-.22)	.0755	1.78 (.0575)	11,240
Denmark	3.041 (4.39)	-3.448 (-3.52)	-4.231 (-4.32)	-2.456 (-2.50)	-2.592 (-2.64)	-2.657 (-2.71)	-2.534 (-2.59)	-3.179 (-3.25)	-4.338 (-4.43)	-2.776 (-2.84)	-3.941 (-4.02)	-1.003 (-1.02)	.1326	3.34 (.0003)	11,240
France	3.722 (3.08)	-3.898 (-2.28)	-1.739 (-1.02)	-2.785 (-1.63)	-4.378 (-2.56)	-5.624 (-3.29)	-2.192 (-1.28)	-2.694 (-1.58)	-4.936 (-2.88)	-4.441 (-2.60)	-3.288 (-1.92)	-3.570 (-2.09)	.0695	1.63 (.0905)	11,240
Germany	3.099 (2.84)	-3.242 (-2.10)	-2.050 (-1.33)	-3.705 (-2.40)	-3.116 (-2.02)	-4.048 (-2.63)	-1.540 (-1.00)	-.856 (-.55)	-4.781 (-3.10)	-4.036 (-2.62)	-1.744 (-1.13)	-3.008 (-1.95)	.0744	1.75 (.0625)	11,240
Italy	2.229 (1.61)	-1.364 (-.69)	-1.492 (-.76)	-1.506 (-.77)	-3.533 (-1.81)	-2.641 (-1.35)	-2.803 (-1.43)	.117 (.05)	-2.954 (-1.51)	-3.521 (-1.80)	-2.485 (-1.27)	-2.401 (-1.22)	.0345	.78 (.6621)	11,240
Japan	3.529 (3.28)	-2.401 (-1.58)	-1.652 (-1.09)	-3.228 (-2.12)	-2.553 (-1.68)	-1.470 (-.96)	-3.850 (-2.53)	-4.358 (-2.86)	-3.663 (-2.41)	-4.506 (-2.96)	-1.883 (-1.23)	-1.731 (-1.13)	.0675	1.58 (.1051)	11,240
Netherlands	3.761 (4.00)	-4.236 (-3.18)	-2.462 (-1.85)	-2.373 (-1.78)	-4.744 (-3.56)	-5.198 (-3.90)	-3.269 (-2.46)	-4.045 (-3.04)	-5.673 (-4.26)	-4.008 (-3.01)	-3.864 (-2.91)	-2.453 (-1.85)	.1096	2.69 (.0029)	11,240
Norway	4.335 (3.54)	-5.512 (-3.18)	-4.962 (-2.86)	-1.971 (-1.14)	-4.044 (-2.33)	-2.381 (-1.37)	-1.325 (-.76)	-3.969 (-2.29)	-5.895 (-3.40)	-4.844 (-2.79)	-3.916 (2.26)	-4.655 (-2.68)	.0911	2.19 (.0158)	11,240
Singapore	10.591 (3.34)	-11.009 (-2.46)	-8.497 (-1.89)	-12.906 (-2.88)	-6.576 (-1.46)	-10.283 (-2.29)	-11.078 (-2.47)	-10.966 (-2.45)	-11.545 (-2.58)	-8.240 (-1.84)	-12.557 (-2.81)	-5.364 (-1.19)	.1211	1.35 (.2052)	11,108
Spain	2.241 (2.48)	-.946 (-.74)	-1.919 (-1.51)	-.652 (-.51)	-4.114 (-3.23)	-2.178 (-1.70)	-1.446 (-1.13)	-.950 (-.74)	-3.882 (-3.04)	-2.051 (-1.61)	-2.677 (-2.10)	-2.249 (-1.76)	.0795	1.88 (.0419)	11,240
Sweden	3.996 (4.59)	-3.613 (-2.93)	-2.989 (-2.43)	-3.117 (-2.53)	-4.792 (-3.89)	-4.242 (-3.44)	-1.587 (-1.29)	-5.094 (-4.13)	-5.331 (-4.33)	-4.669 (-3.79)	-4.175 (-3.39)	-3.173 (-2.57)	.1263	3.16 (.0006)	11,240
Switzerland	4.585 (4.05)	-5.333 (-3.33)	-4.189 (-2.61)	-3.727 (-2.33)	-5.852 (-3.66)	-4.605 (-2.87)	-3.938 (-2.46)	-2.839 (-1.77)	-6.121 (-3.82)	-4.779 (-2.98)	-3.599 (-2.25)	-3.319 (-2.07)	.0855	2.04 (.0255)	11,240

TABLE 4: TEST OF EQUALITY OF MONTHLY MEAN RETURNS

1/1959-12/1979: CIP INDICES

$$\tilde{R}_t = a_1 + \sum_{j=2}^{12} a_j D_{Jt} + \tilde{e}_t$$

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COUNTRY	a_1	a_2	a_3	a_4	a_5	a_6	a_7	a_8	a_9	a_{10}	a_{11}	a_{12}	R^2	F-statistic	Degrees of Freedom
UK	3.129	-4.342	-4.818	-4.242	-1.246	-3.369	-2.331	-3.738	-1.066	.277	-2.442	-1.881	.0626	1.46	11,240
	(2.21)	(-2.17)	(-2.41)	(-2.12)	(-.62)	(-1.68)	(-1.17)	(-1.87)	(-.53)	(.14)	(-1.22)	(-.94)		(.1484)	
USA	1.041	-1.451	.224	-.081	-2.425	-1.601	-.901	-.703	-1.837	-.261	-.013	.378	.0479	1.10	11,240
	(1.19)	(-1.17)	(.18)	(-.06)	(-1.96)	(-1.29)	(-.72)	(-.56)	(-1.48)	(-.21)	(-.01)	(.30)		(.3637)	
Pooled Sample	3.112	-3.088	-2.720	-2.422	-3.469	-2.997	-2.094	-2.750	-3.939	-3.154	-2.674	-2.122	.0340	13.23	11,4140
	(11.55)	(-8.11)	(-7.14)	(-6.36)	(-9.11)	(-7.87)	(-5.50)	(-7.22)	(-10.34)	(-8.28)	(-7.02)	(-5.57)		(.0001)	

The dummy variables indicate in which month of the tax year each return is observed (D_{2t} = second month of the tax year, . . ., D_{12t} = last month of the tax year). The end of the tax year is shown in Table 2. Values in the parentheses are the t-statistics for the estimated regression coefficients. The F-statistic tests the null hypothesis that $a_2 = a_3 = \ldots a_{12} = 0$. The value in the parentheses under the F-statistics is the probability level at which the null hypothesis is accepted.

TABLE 4a: TEST OF EQUALITY OF MONTHLY MEAN RETURNS

1/1947-12/1979: IFS INDICES

$$\tilde{R}_t = a_1 + \sum_{j=2}^{12} a_{Jt} D_{Jt} + \tilde{e}_t$$

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OUNTRY	a_1	a_2	a_3	a_4	a_5	a_6	a_7	a_8	a_9	a_{10}	a_{11}	a_{12}	R^2	F-statistic	Degrees of Freedom
ustralia	1.007 (1.72)	-.581 (-.70)	-1.201 (-1.45)	-1.378 (-1.67)	-1.069 (-1.29)	-.366 (-.44)	1.812 (2.17)	-.112 (-.14)	-1.537 (-1.86)	-.970 (-1.17)	-.025 (-.03)	-.988 (-1.19)	.0657	2.37 (.0078)	11,371
ustria[a]	2.132 (2.95)	-1.687 (-1.67)	-3.016 (-2.98)	-2.763 (-2.73)	-2.896 (-2.86)	-1.693 (-1.67)	-1.820 (-1.80)	-1.293 (-1.28)	.406 (.40)	-.411 (-.41)	-1.307 (-1.29)	-2.278 (-2.25)	.0680	2.46 (.0057)	11,371
elgium	3.271 (5.27)	-2.510 (-2.88)	-3.798 (-4.37)	-2.521 (-2.89)	-4.189 (-4.81)	-3.825 (-4.39)	-1.925 (-2.21)	-2.572 (-2.96)	-4.864 (-5.58)	-4.452 (-5.11)	-4.279 (-4.91)	-2.386 (-2.74)	.1266	5.05 (.0001)	11,383
anada	3.184 (4.38)	-2.771 (-2.71)	-2.551 (-2.50)	-1.756 (-1.72)	-2.753 (-2.69)	-3.409 (-3.34)	-2.771 (-2.71)	-2.644 (-2.59)	-3.352 (-3.28)	-4.268 (-4.18)	-1.642 (-1.61)	-2.209 (-2.16)	.0591	2.19 (.0146)	11,383
enmark	2.022 (3.91)	-1.325 (-1.82)	-1.529 (-2.10)	-.633 (-.87)	-1.183 (-1.62)	-1.952 (-2.68)	-1.687 (-2.32)	-2.033 (-2.80)	-2.608 (-3.59)	-2.403 (-3.30)	-3.315 (-4.56)	-1.028 (-1.42)	.0821	3.11 (.0005)	11,383
inland	5.360 (6.75)	-4.768 (-4.28)	-3.771 (-3.38)	-4.679 (-4.20)	-5.805 (-5.21)	-5.174 (-4.64)	-3.148 (-2.82)	-3.810 (-3.41)	-5.553 (-4.98)	-6.099 (-5.47)	-6.753 (-6.06)	-5.215 (-4.68)	.1266	5.05 (.0001)	11,383
rance	3.631 (3.46)	-4.526 (-3.08)	-1.842 (-1.25)	-2.915 (-1.98)	-3.550 (-2.42)	-3.966 (-2.69)	-1.626 (-1.11)	-1.078 (-.73)	-3.206 (-2.18)	-4.728 (-3.22)	-4.006 (-2.73)	-3.272 (-2.21)	.0541	1.99 (.0286)	11,382
ermany[b]	1.994 (2.39)	-1.056 (-.89)	-1.202 (-1.02)	-.583 (-.49)	-2.498 (-2.12)	-2.164 (-1.83)	-2.057 (-1.74)	1.327 (1.13)	-2.396 (-2.05)	-3.062 (-2.63)	-1.271 (-1.09)	-1.165 (-.99)	.0759	2.19 (.0152)	11,293
srael[c]	1.717 (1.19)	-.581 (-.28)	.694 (.34)	-.145 (-.07)	.164 (.08)	2.145 (1.05)	-.385 (-.19)	-1.668 (-.82)	-1.939 (-.97)	-2.40 (-.12)	-.138 (-.07)	.779 (.38)	.0242	.57 (.8556)	11,251
aly	2.614 (2.19)	-1.498 (-.89)	-1.234 (-.73)	-1.625 (-.97)	-1.729 (-1.03)	-3.669 (-2.19)	-2.707 (-1.63)	1.058 (.63)	-2.838 (-1.70)	-3.693 (-2.21)	-3.683 (-2.20)	-3.327 (-1.98)	.0481	1.72 (.0676)	11,374
pan	4.603 (3.71)	-.274 (-.15)	-3.918 (-2.25)	-3.813 (-2.19)	-1.825 (-1.05)	-3.866 (-2.22)	-2.990 (-1.72)	-4.209 (-2.42)	-4.106 (-2.36)	-4.944 (-2.84)	-3.615 (-2.08)	-2.322 (-1.33)	.0454	1.66 (.0810)	11,383
therlands	2.455 (3.64)	-1.320 (-1.40)	-1.956 (-2.07)	-.612 (-.65)	-2.464 (-2.60)	-2.914 (-3.08)	-2.533 (-2.68)	-1.948 (-2.06)	-2.871 (-3.03)	-3.775 (-3.99)	-3.513 (-3.71)	-1.816 (-1.92)	.0744	2.80 (.0017)	11,383
rway	3.616 (4.32)	-2.669 (-2.27)	-4.473 (-3.81)	-3.157 (-2.68)	-3.739 (-3.18)	-3.640 (-3.09)	-1.752 (-1.49)	-1.349 (-1.15)	-4.281 (-3.64)	-5.151 (-4.39)	-4.985 (-4.25)	-4.189 (-3.57)	.0937	3.60 (.0001)	11,383
w Zealand	.782 (1.58)	.336 (.48)	-.221 (-.32)	-.611 (-.88)	-.970 (-1.39)	-.883 (-1.27)	-1.259 (-1.78)	-1.044 (-1.48)	.175 (.25)	.288 (.41)	-.551 (-.79)	-.246 (-.35)	.0342	1.23 (.2665)	11,381
uth Africa	-.012 (-.02)	.577 (.59)	-.239 (-.25)	1.549 (-1.59)	-.421 (-.43)	1.040 (1.07)	.712 (.73)	.727 (.75)	-.043 (-.04)	.405 (.42)	2.572 (2.62)	1.042 (1.07)	.0565	2.08 (.0207)	11,383

TABLE 4a: TEST OF EQUALITY OF MONTHLY MEAN RETURNS

1/1947-12/1979: IFS INDICES

$$\tilde{R}_t = a_1 + \sum_{j=2}^{12} a_{Jt} D_{Jt} + \tilde{e}_t$$

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COUNTRY	a_1	a_2	a_3	a_4	a_5	a_6	a_7	a_8	a_9	a_{10}	a_{11}	a_{12}	R^2	F-statistic	Degrees of Freedom
Spain	1.337	-.242	-1.178	-.572	-3.258	-3.477	-2.384	.947	-1.733	-1.920	-1.898	-2.708	.1089	4.01	11,361
	(1.93)	(-.25)	(-1.22)	(-.59)	(-3.33)	(-3.56)	(-2.44)	(.98)	(-1.80)	(-1.99)	(-1.97)	(-2.81)		(.0000)	
Sweden	3.725	-3.555	-3.499	-3.036	-3.042	-3.716	-1.479	-4.242	-4.408	-5.011	-3.787	-2.901	.1190	4.70	11,383
	(5.94)	(-4.04)	(-3.98)	(-3.45)	(-3.46)	(-4.22)	(-1.68)	(-4.82)	(-5.01)	(-5.70)	(-4.30)	(-3.30)		(.0001)	
Switzerland	3.174	-2.724	-3.269	-2.773	-3.187	-4.696	-2.815	-1.168	-3.504	-4.401	-3.504	-2.442	.0795	3.01	11,383
	(4.25)	(-2.60)	(-3.12)	(-2.64)	(-3.04)	(-4.48)	(-2.69)	(-1.11)	(-3.34)	(-4.20)	(-3.34)	(-2.33)		(.0008)	
UK	3.115	-2.217	-4.751	-3.542	-2.285	-2.575	-2.550	-4.300	-2.408	-1.738	-2.748	-2.427	.0480	1.75	11,383
	(3.40)	(-1.71)	(-3.67)	(-2.73)	(-1.76)	(-1.99)	(-1.97)	(-3.32)	(-1.86)	(-1.33)	(-2.12)	(-1.87)		(.0601)	
USA	1.682	-1.523	-.821	-.367	-1.452	-1.827	-.988	-1.459	-1.490	-1.755	-1.314	-.282	.0304	1.09	11,383
	(2.84)	(-1.84)	(-.99)	(-.44)	(-1.75)	(-2.20)	(-1.19)	(-1.76)	(-1.79)	(-2.11)	(-1.58)	(-.34)		(.3677)	
Pooled Sample	2.589	-1.771	-2.246	-1.994	-2.437	-2.603	-1.728	-1.570	-2.643	-2.969	-2.546	-2.019	.0250	17.75	11,7608
	(14.07)	(-6.85)	(-8.68)	(-7.71)	(-9.42)	(-10.06)	(-6.67)	(-6.07)	(-10.24)	(-11.47)	(-9.84)	(-7.80)		(.0001)	

The dummy variable indicates in which month of the fiscal year each return is observed (D_{2t} = second month of the tax year, . . . D_{12t} = last month of the tax year). The end of the tax year is shown in Table 2 for each country. Values in the parentheses are the t-statistics for the estimated regression coefficients. The F-statistics test the null hypothesis that $a_2 = a_3 = \ldots a_{12} = 0$. The value in the parentheses under the F-statistic is the probability level at which the null hypothesis is accepted.

TABLE 5: OBSERVED LARGE MONTHLY MEAN RETURNS AND PREDICTIONS BY THE TAX LOSS SELLING HYPOTHESIS

	Predictions by the Tax Loss Selling Hypothesis (1)	Observed Largest Mean Return CIP Data (2)	IFS Data (3)
Australia	---	December	January
Austria	January	---	---
Belgium	---	January	January
Canada	January	January	January
Denmark	January	January	January
Finland	January	N/A	January
France	---	January	January
Germany	January	January	January
Israel	---	N/A	---
Italy	January	---	January
Japan	January	---	January
Netherlands	January	January	January
Norway	January	January	January
New Zealand	---	---	---
Singapore	---	---	N/A
South Africa	---	N/A	January
Spain	January	January	January
Sweden	January	January	January
Switzerland	January	January	January
U.K.	April	---	April
U.S.A.	January	---	---

TABLE 6: COMPARISON OF RETURN DISTRIBUTIONS OF THE VALUE WEIGHTED (VW) AND THE EQUALLY WEIGHTED (EW) NYSE INDICES

Panel A: Means

	January	February	March	April	May	June	July	August	September	October	November	December
1/1926-12/1979												
VW	1.678	.437	.182	1.206	.053	1.276	2.139	1.688	-.878	-.082	1.441	1.578
EW	5.358	.895	.046	1.241	.339	1.135	2.733	2.154	-.579	-.463	1.564	1.039
1/1947-12/1979												
VW	1.317	.139	1.753	1.072	.048	.135	1.326	.565	-.219	.696	1.953	2.157
EW	4.449	.476	1.922	.523	-.297	-.421	1.766	.759	.083	-.156	2.065	2.075
1/1941-12/1974												
VW	1.071	.275	1.423	.692	.655	-.044	1.282	.483	-.195	1.267	1.389	2.321
EW	4.124	.646	1.498	.282	.282	-.526	1.665	.650	.135	.945	1.175	2.130

Panel B: Standard Deviations

	January	February	March	April	May	June	July	August	September	October	November	December
1/1926-12/1979												
VW	4.781	3.828	5.545	7.470	6.555	5.944	6.044	6.254	6.406	5.856	5.487	3.780
EW	7.701	4.843	6.931	9.686	10.772	7.778	8.299	9.931	8.958	6.880	6.761	5.528
1/1947-12/1979												
VW	5.013	2.802	2.787	4.242	3.575	3.701	4.053	3.758	3.934	4.668	4.557	2.911
EW	7.265	3.495	3.495	4.846	4.751	4.550	4.472	4.354	4.423	5.157	5.667	4.197
1/1941-1/1974												
VW	4.015	3.116	3.267	4.732	3.797	3.632	4.012	3.813	4.314	4.052	4.678	3.151
EW	5.484	4.319	3.875	5.103	4.805	4.636	5.062	4.254	5.124	4.259	5.911	4.595

TABLE 6: COMPARISON OF RETURN DISTRIBUTIONS OF THE VALUE WEIGHTED (VW) AND THE EQUALLY WEIGHTED (EW) NYSE INDICES

Panel C: $\tilde{R}_t = a_1 + \sum_{j=2}^{12} a_{Jt} D_{Jt} + \tilde{e}_t$

	a_1	a_2	a_3	a_4	a_5	a_6	a_7	a_8	a_9	a_{10}	a_{11}	a_{12}	R^2	F-statistic	Degrees of Freedom
1/1926-12/1979															
VW	1.678	-1.241	-1.495	.472	-1.625	-.402	.460	.009	-2.557	-1.761	-.237	-.100	.0230	1.39	11,648
	(2.14)	(-1.12)	(-1.35)	(-.43)	(-1.47)	(-.36)	(.41)	(.01)	(-2.31)	(-1.59)	(-.21)	(-.09)		(.1724)	
EW	5.358	-4.463	-5.312	-4.118	-5.019	-4.174	-2.625	-3.206	-5.939	-5.823	-3.795	-4.323	.0365	2.23	11,648
	(4.95)	(-2.91)	(-3.47)	(-2.69)	(-3.28)	(-2.72)	(-1.71)	(-2.09)	(-3.89)	(-3.80)	(-2.48)	(-2.82)		(.0119)	
1/1947-12/1979															
VW	1.316	-1.777	.437	-.245	-1.268	-1.181	.009	-.751	-1.536	-.621	.636	.840	.0428	1.56	11,384
	(1.72)	(-1.65)	(.31)	(-.24)	(-1.78)	(-1.37)	(.01)	(-1.24)	(-1.71)	(-.68)	(.04)	(.69)		(.1080)	
EW	4.449	-3.973	-2.526	-3.926	-4.746	-4.870	-2.683	-3.690	-4.366	-4.606	-2.383	-2.374	.0755	2.85	11,384
	(5.31)	(-3.35)	(-2.13)	(-3.31)	(-4.01)	(-4.11)	(-2.27)	(-3.12)	(-3.69)	(-3.89)	(-2.01)	(-2.01)		(.0014)	
1/1941-12/1974															
VW	1.071	-.846	.356	-.378	-.416	-1.115	.211	-.587	-1.266	.195	.317	1.249	.013	1.16	11,396
	(1.61)	(-.89)	(.38)	(-.40)	(-.44)	(-1.18)	(.22)	(-.62)	(-1.34)	(.21)	(.34)	(1.33)		(.3106)	
EW	4.123	-3.477	-2.625	-3.841	-3.841	-4.650	-2.458	-3.473	-3.989	-3.178	-2.949	-1.994	.0560	2.13	11,396
	(4.99)	(-2.96)	(-2.25)	(-3.29)	(-3.29)	(-3.98)	(-2.10)	(-2.97)	(-3.41)	(-2.72)	(-2.52)	(-1.71)		(.0174)	

TABLE 7: NON-PARAMETRIC TEST STATISTICS

FOR MONTH-TO-MONTH STOCK RETURNS

1/1959-12/1979: CIP INDICES

	Panel A: Kruskal-Wallis Test		Panel B: Comparison of Observed Mean Returns	Panel C: Predictions by the Tax Loss Selling Hypothesis
	Statistic	Probability		
Australia	20.18	.0430	December > All except January, May, October	—
Austria	12.95	.2965	—	January
Belgium	39.40	.0001	January > All	January
Canada	18.59	.0689	January > All except November, December	January
Denmark	35.53	.0002	January > All except December	January
France	15.10	.1779	—	—
Germany	24.27	.0116	January > All except August, July, March, November	January
Italy	9.90	.5398	—	January
Japan	20.30	.0414	January > All	January
Netherlands	27.50	.0039	January > All except April, March, December	January
Norway	29.51	.0019	January > All except July	January
Singapore	11.51	.4018	—	—
Spain	26.62	.0052	January > All except August, April, February, July	January
Sweden	31.46	.0009	January > All except July	January
Switzerland	17.60	.0914	January > All except August	January
UK	17.57	.0920	April > All except August, March, January	April
USA	12.99	.2941	—	January

TABLE 7a: NON-PARAMETRIC TEST STATISTICS

FOR MONTH-TO-MONTH STOCK RETURNS

1/1947-12/1979: IFS INDICES

	Panel A: Kruskal-Wallis Test Statistic	Probability	Panel B: Comparison of Observed Mean Returns	Panel C: Predictions by Tax Loss Hypothesis
Australia	30.81	.0012	January > All	None
Austria	35.27	.0002	January > All except September, August	January
Belgium	48.40	.0001	January > All	January
Canada	25.16	.0086	January > All	January
Denmark	41.59	.0001	January > All except April	January
Finland	51.85	.0001	January > All	January
France	19.65	.0503	August, January, July, March > All except October, February	None
Germany	23.71	.0140	January, August > All except February, March, April	January
Israel	5.86	.8826		None
Italy	21.67	.0270	January, August > All except February, March, April	January
Japan	24.34	.0114	January > All except February	January
Netherlands	30.41	.0014	January > All except April	January
Norway	39.26	.0001	January, July, August > All	January
New Zealand	10.16	.5162	—	None
South Africa	23.49	.0151	January > All except August, September	None
Spain	47.31	.0001	January, February, August > All except April	January
Sweden	43.03	.0001	January, July > All	January
Switzerland	33.79	.0004	January > All	January
UK	28.68	.0025	April > All	April
USA	11.57	.3968	None	January
VALUE AND EQUALLY WEIGHTED NYSE INDICES				
1926-1979				
VW	14.56	.2037		January
EW	27.45	.0039	January > All except July	January
1941-1974				
VW	13.01	.2925		January
EW	18.04	.0806	January > All	January
1947-1979				
VW	17.83	.0856		January
EW	22.52	.0207	January > All except December	January