U.S. Investment in Foreign Equity Markets

By Richard K Abrams and Donald V. Kimball

During the 1970s, transactions by U.S. investors in foreign stock markets have increased nearly ninefold, approaching a level of $18 billion in 1980. While this volume is less than one-twentieth of that in the New York Stock Exchange, foreign equity investments by U.S. citizens are expanding rapidly and gaining increased attention.

U.S. investors have diversified internationally for two reasons. Some have done so in an attempt to increase their returns —i.e., because they believed that specific foreign stocks, or even specific foreign markets, would yield higher returns than the investment alternatives available in domestic markets. Others have diversified in an attempt to reduce the overall riskiness of their portfolio. Since many foreign stock market price movements exhibit a low correlation with U.S. stock price movements, it has been possible for investors to reduce the expected price volatility of their overall portfolio by diversifying into foreign equities.

This paper provides an overview of investment in foreign equity markets from the perspective of the individual U.S. investor. Stock markets in six foreign countries—Australia, Canada, Japan, Switzerland, the United Kingdom, and West Germany—are examined. In 1980, these markets accounted for 80 per cent of the foreign stock transactions by U.S. investors.

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U.S. INVESTMENT IN FOREIGN STOCKS

U.S. investors sharply increased their buying and selling of foreign stocks in the 1970s. Gross transactions by U.S. investors in foreign equities rose from $2 billion in 1970 to $18 billion in 1980, with most of the expansion occurring since 1977 (Table 1). In 1980 alone, gross transactions rose about $8 billion, or almost 80 per cent.

The largest share of U.S. foreign equity transactions has been in Canadian stocks, with Japanese and British stocks the next most popular. During the 1970s, these three countries typically accounted for 60 to 75 per cent of all U.S. overseas activity in equities. The Swiss market accounted for 5 to 7 per cent of the total, and the West German share ranged from less than 1 per cent to over 5 per cent. Historically, U.S. investors have almost ignored the Australian market, but in 1980, U.S. activity in Australian equities increased nearly fourfold.

Along with the rise in gross transactions, U.S. investors increased their net holdings of foreign stocks in the 1970s. Net purchases totaled $2.7 billion during the decade, as net sales in the first part of the period were more

than offset by large acquisitions over the 1975-80 time span (Table 2). In 1980 alone, U.S. investors added $2.2 billion to their holdings of foreign stocks.

U.S. investor attitudes toward Canada, Japan, and the United Kingdom seemed to shift during the 1970s. Investors were net sellers of Canadian stocks during the 1970-74 period, but were net purchasers from 1975 through 1980. Japanese stocks were out of favor throughout the decade, except in 1980, when U.S. investors made large net purchases. From 1970 through 1977, U.S. investors generally accumulated British stocks, but have been net sellers since 1978. Australia was the only country in which U.S. investors increased their stock holdings throughout the 1970s, while West Germany was the only country in which U.S. investors almost continuously liquidated their positions. Investment in Switzerland showed no discernible time pattern, although on balance investors were net sellers of Swiss stocks.

FOREIGN STOCK EXCHANGES

Market Structure

The general structure of most national equity markets is similar to that of the United States.

Table 1
GROSS TRANSACTIONS ON FOREIGN EXCHANGES BY U.S. INVESTORS
(In millions of dollars)

	Australia	Canada	Japan	Switzer-land	U.K.	West Germany	Other	Total Foreign
1970	6	813	293	132	239	57	666	2,206
1975	4	768	653	202	587	140	915	3,269
1976	7	1,288	975	219	431	216	1,055	4,191
1977	11	1,225	1,349	216	993	87	1,038	4,919
1978	14	1,845	1,942	450	1,249	131	1,171	6,802
1979	40	4,510	1,404	613	1,443	173	1,833	10,016
1980	156	6,819	2,705	1,526	2,735	459	3,578	17,978

Table 2
NET PURCHASE OF STOCK ON FOREIGN EXCHANGES BY U.S. INVESTORS
(In millions of dollars)

	Australia	Canada	Japan	Switzer-land	U.K.	West Germany	Other	Total Foreign
1970-74	+ 5	− 549	−341	− 82	+582	−35	− 337	− 757
1975-80	+89	+2,150	+ 89	−126	+148	−36	+1,108	+3,422
1970-80	+94	+1,601	−252	−208	+730	−71	+ 771	+2,665
1975	0	+ 100	+ 9	− 50	+ 7	−30	+ 155	+ 191
1976	+ 5	+ 14	− 37	+ 41	+ 87	−18	+ 235	+ 327
1977	+ 1	+ 199	−309	+ 12	+303	− 1	+ 204	+ 409
1978	+ 2	+ 139	−376	− 92	− 61	−15	− 127	− 530
1979	+ 8	+ 912	− 24	− 63	−171	+23	+ 101	+ 786
1980	+73	+ 786	+826	+ 26	− 17	−22	+ 567	+2,239

Most countries have one dominant market that accounts for 50 to 80 per cent of the total transactions, plus four to seven secondary markets. The Canadian, Japanese, and Swiss markets are dominated by the Toronto, Tokyo, and Zurich exchanges, respectively. Frankfurt is by far the largest of the eight West German stock exchanges, and Sydney is the largest of Australia's six exchanges. The United Kingdom is an exception; in 1973, the London Stock Exchange—the nation's largest—joined with the six other exchanges in the British Isles to form The Stock Exchange.

The stringency of reporting requirements varies markedly from country to country. While most countries have balance sheet reporting requirements which must be met before a stock is listed, nowhere are the requirements as rigorous as in the United States. In Canada and Japan, the requirements are thorough, and information on stocks in these markets is of high quality. Information on stocks listed on the United Kingdom's stock exchange is also considered to be good and improving. At the other extreme, information on the West German and Swiss exchanges is limited. Also, Germany permits trading on inside information prior to its announcement.

Countries also differ with regard to national regulations and attitudes toward foreign ownership. Of the six countries studied, only the United Kingdom and West Germany have no formal restrictions on foreign ownership of stocks. Swiss companies issue two types of shares—registered, which may be held only by Swiss citizens, and bearer shares, which are unrestricted. Australia requires formal approval by its Foreign Investment Review Board before a foreign resident may acquire over 15 per cent of a domestic corporation. Canada requires a similar approval before a foreign resident gains control of a domestic corporate entity. Japan has recently been dismantling its restrictions, but percentage ownership limitations continue to be placed on a number of corporations deemed important to national security.

Market Size and Activity

To better compare the various aspects of the six foreign stock markets with the U.S. market, comparable data were obtained from Capital International of Geneva, Switzerland.[1] The data indicate that while foreign stock markets have grown rapidly in the last decade, as shown in Table 3, they remain small relative to the New York Stock Exchange (NYSE). The Japanese stock market is the largest foreign market and also has expanded the most rapidly in recent years. The value of the Japanese market as a percentage of the NYSE increased from 7.5 per cent in 1970 to 28.6 per cent in 1979. The stock markets of the other countries are considerably smaller than Japan's and have grown much less rapidly. However, all markets have grown more rapidly than the U.S. market except for Australia.

Annual turnover—the gross value of sales and purchases of equities on an exchange—has followed a pattern similar to the growth of exchanges. Between 1970 and 1979, turnover on the Japanese exchange increased as a percentage of NYSE turnover, from 23.6 per cent in 1970 to 63.4 per cent in 1979. Other major foreign exchanges accounted for a smaller, but relatively stable, portion of stock transactions (Table 4).

The Japanese markets had the highest turnover rate of the seven markets studied. The high turnover occurred because institutions in Japan use the stock market as an instrument of

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1 The Tokyo Exchange, the Sydney Exchange, and the New York Stock Exchange—each carrying out over 80 per cent of their country's total stock transactions—represent the Japanese, Australian, and U.S. markets, respectively. Of the remaining foreign markets examined, coverage encompasses all the national exchanges.

cash management. In 1979, the turnover rate on the Tokyo Stock Exchange was 52 per cent, roughly twice as active as the NYSE. In 1979, the turnover rates on the other markets ranged from 22 per cent in Canada to 7 per cent in Australia.

Yields and Price/Earnings Ratios

The dividend yield—the ratio of dividends to stock prices—on the seven exchanges differed considerably during the 1970s, ranging, on average, from 2.7 per cent for the Japanese and Swiss exchanges to 5.2 per cent for the British market (Table 5). The variation in yields reflects differences in corporate dividend policies—as measured by the dividend/earnings (D/E) ratios—as well as differences in price/earnings (P/E) ratios. D/E ratios ranged from a low of 28 per cent in Switzerland to 50 per cent in the United Kingdom to 54 per cent in Australia. The P/E ratios on the exchanges varied within a range of 10 in Switzerland to 17 in Japan.

The dividend yields on most national equity markets increased over the last decade. On average, market yields rose from 3.6 per cent during the early 1970s to 4.2 per cent during the later years. Japan was the only country of the seven where dividend yields declined.

The general increase in dividend yields was

Table 3
VALUE OF EQUITIES
(In billions of U.S. dollars)

	Australia	Canada	Japan	Switzer-land	U.K.	West Germany	U.S.
1970	26	51	43	10	76	28	570
1975	23	50	135	19	78	52	684
1979	39	98	275	44	142	80	960
	(As a per cent of the New York Stock Exchange)						
1970	4.6	8.9	7.5	1.8	13.3	4.9	—
1975	3.4	7.3	19.7	2.8	11.4	7.6	—
1979	4.1	10.2	28.6	4.6	14.8	8.3	—

Table 4
ANNUAL TURNOVER
(As a per cent of the New York Stock Exchange)

	Australia	Canada	Japan	Switzer-land	U.K.	West Germany	U.S.
1970	2.0	4.6	23.6	n.a.	10.3	3.2	—
1975	0.5	4.0	38.3	n.a.	14.6	8.3	—
1979	1.0	7.6	63.4	n.a.	10.2	5.8	—
	(As a per cent of value of equities)						
1970	7.5	9.2	54.9	n.a.	14.1	10.5	18.1
1975	3.2	10.5	38.2	n.a.	26.3	22.4	20.3
1979	7.0	21.6	52.1	n.a.	18.0	17.9	26.4

not the result of an increase in the D/E ratio, for only in Japan and Switzerland did this ratio increase during the period. The rise in yield actually was the result of a general decline in stock P/E ratios. In five of the seven countries, stock P/E ratios declined between the early and the later years. The overall average P/E ratio declined from 14.1 during the early 1970s to 11.2 during the later years.

HISTORICAL PERFORMANCE OF U.S. AND FOREIGN EQUITY MARKETS

This section analyzes the performance of the stock markets of the United States and the six foreign countries included in the study. For this purpose, a comparable set of national stock market indices created by Capital International of Geneva, Switzerland, has been used. Each national index measures the price behavior of a representative group of stocks listed on the major stock exchanges of the country.

Stock Prices

Each of the six national indices is compared with the U.S. index in Chart 1. The indices are shown in both adjusted and unadjusted forms. The adjusted indices are denominated in U.S. dollars and reflect the effects of changes in the exchange rate of the dollar. An exchange rate adjustment was made because foreign equities are denominated in the stock's home currency, but the U.S. investor is interested in the dollar-denominated return on the investment. Since exchange rates have been volatile in recent years, exchange rate movements have often been dominant factors in the returns on foreign investments. For example, between April 1973 and June 1980, the Swiss franc return on Swiss stocks was only 0.2 per cent annually. However, as a result of the Swiss franc's appreciation against the U.S. dollar, the total annual dollar return was 9.6 per cent.

Chart 1 shows that during the 1970s, there was a broad similarity among the countries in the dominant pattern of fluctuation in stock prices. For most countries, stocks rose in the first part of the decade and fell during the 1973-74 period. Then, after recovering from the 1973-74 decline, stock prices either stabilized or rose further during the 1975-80 period.

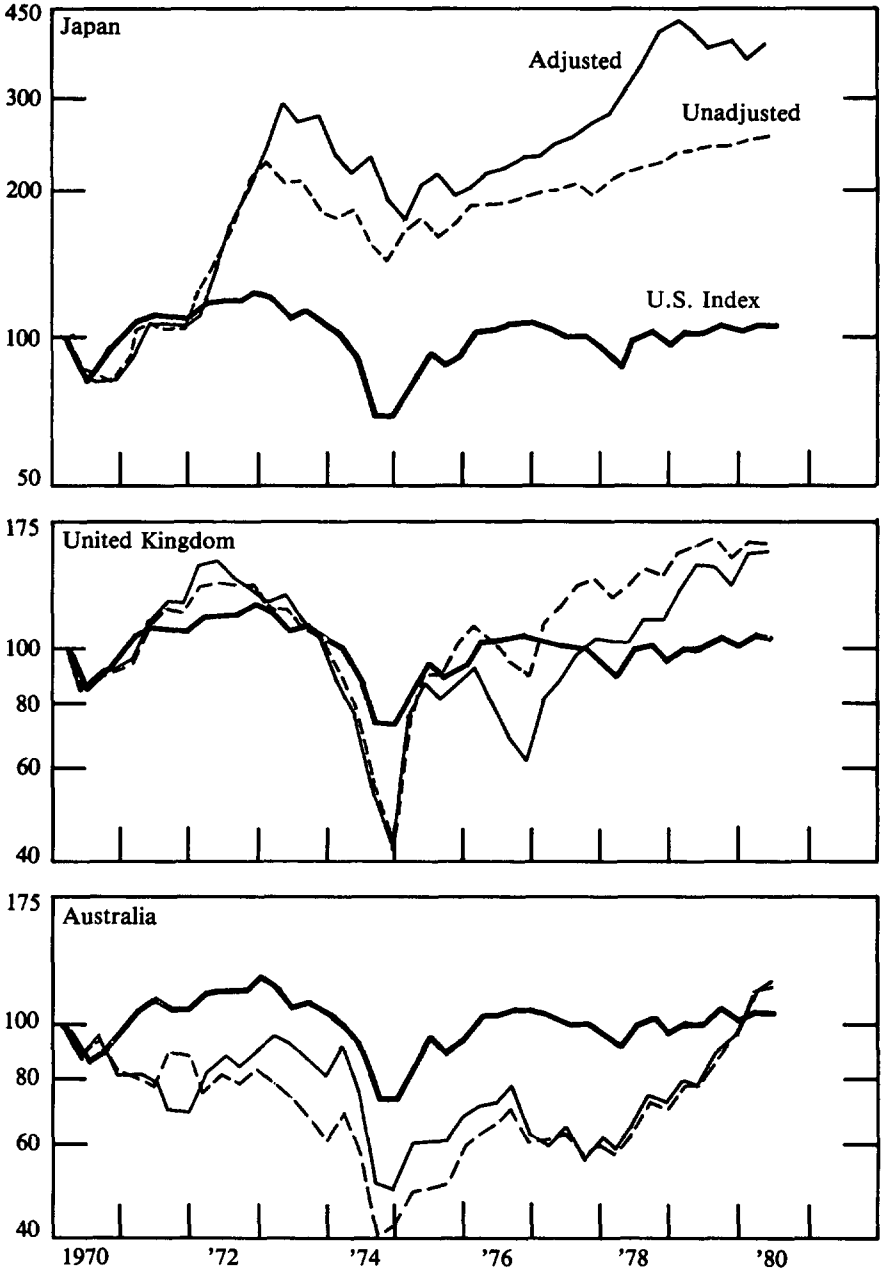
Table 5
GENERAL STOCK MARKET CHARACTERISTICS

	Australia	Canada	Japan	Switzer-land	U.K.	West Germany	U.S.	Average
Dividend Yield								
1970-80	4.3	4.0	2.8	2.7	5.2	4.3	4.2	3.9
1970-74	3.6	3.6	3.3	2.6	4.7	4.0	3.5	3.6
1975-80	5.0	4.4	2.3	2.9	5.8	4.5	4.8	4.2
Dividend/Earnings (D/E) Ratio × 100								
1970-80	53.8	45.0	44.6	27.9	49.8	48.0	48.4	45.4
1970-74	56.5	51.2	43.3	23.9	53.9	49.7	51.8	47.2
1975-80	51.3	39.3	45.7	31.6	46.2	46.5	45.3	43.7
Price/Earnings (P/E) Ratio								
1970-80	13.9	11.8	17.3	10.4	10.6	11.6	12.5	12.6
1970-74	17.8	14.8	14.9	9.6	13.2	12.8	15.6	14.1
1975-80	10.4	9.0	19.5	11.0	8.1	10.6	9.7	11.2

Chart 1

STOCK MARKET PRICE INDICES

Ratio Scale
January 1970 = 100



STOCK MARKET PRICE INDICES

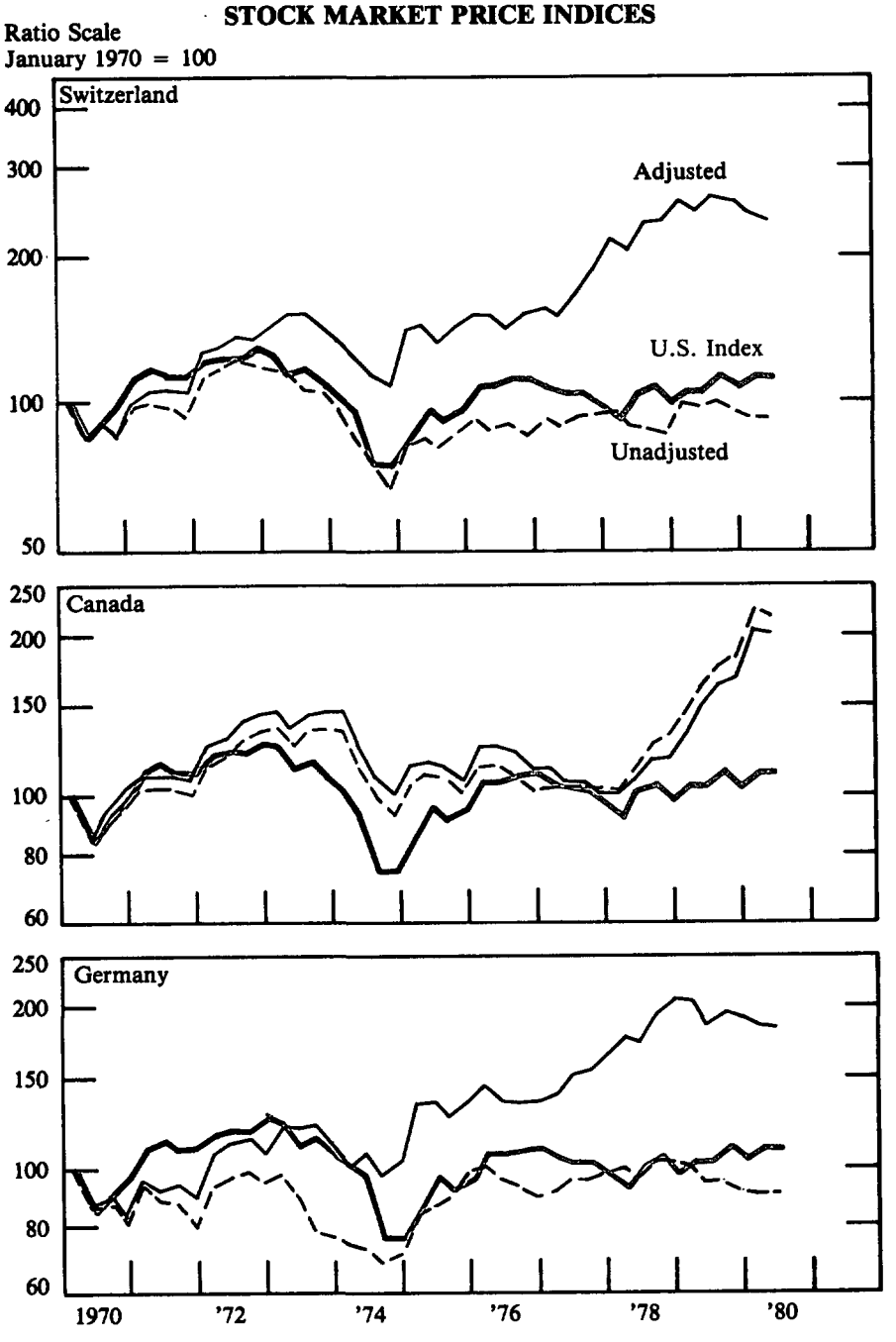


Table 6
EQUITY PRICE AND EXCHANGE RATE EFFECTS ON NATIONAL MARKET RETURNS

(Annual percentage rate)

	Fixed Rate Period (1970:1-1973:3)			Floating Rate Period (1973:4-1980:6)			Whole Period (1970:1-1980:6)		
	Unadjusted Yield	Exchange Rate Adjustment	Adjusted Yield	Unadjusted Yield	Exchange Rate Adjustment	Adjusted Yield	Unadjusted Yield	Exchange Rate Adjustment	Adjusted Yield
Australia	−6.1	7.5	1.4	12.3	−2.8	9.5	6.7	0.3	7.0
Canada	14.0	2.3	16.3	11.6	−2.0	9.6	12.3	−0.7	11.6
Japan	29.9	9.9	39.7	4.1	2.5	6.6	11.9	4.8	16.7
Switzerland	6.2	9.3	15.4	0.2	9.3	9.6	2.0	9.3	11.3
United Kingdom	9.4	0.9	10.3	10.4	−0.8	9.7	10.1	−0.3	9.8
West Germany	3.6	8.5	12.1	3.3	6.4	9.7	3.4	7.1	10.4
United States	10.1	—	10.1	3.9	—	3.9	5.8	—	5.8

performance of the U.S. market, before adjusting for exchange rates, ranked somewhat higher during the fixed rate period. After adjusting for exchange rates, the Australian market was the only one that the U.S. market outperformed in the fixed rate period. During the floating rate period, the annual average return on the U.S. market trailed all other markets after they were adjusted for exchange rates. In general, however, there was little correspondence between the relative performance of different stock markets in the two periods. In fact, for the seven markets, the correlation between the adjusted yields in the fixed and floating periods was a statistically insignificant −0.279. Moreover, there was no systematic correlation between adjusted yields in any given year and yields in the previous year. These yearly correlations had a median value of −0.110, and ranged from −0.730 for 1976 and 1975 to 0.655 for 1974 and 1973. While four of the yearly correlations were significant, the signs of these significant correlations varied.[4]

This absence of systematic correlation between the relative yields over time indicates that knowledge of the relative performance of a country's stock market during any particular time period would not be helpful in predicting that market's relative performance during other time periods.

In absolute terms, the performance of all the national stock markets was generally poorer in the floating rate period than in the fixed rate period, due in part to a worldwide rise in oil prices. With the exception of Australia and the United Kingdom for unadjusted yields, and with the exception of Australia for adjusted yields, the holding period yields of the seven stock markets were lower in the floating rate period than in the fixed rate period. Japan experienced the sharpest deterioration, with its unadjusted holding period yield declining from 29.9 per cent in the earlier period to 4.1 per cent in the floating rate period, and its adjusted yield showing an even sharper drop. In general, there was very little correspondence over time in the absolute performance of any particular market. The correlation, for any country,

[4] This result is reasonable because the high variance markets, by their nature, are more likely to be near the top or the bottom of the relative performance list one year to the next.

Table 7
STANDARD DEVIATION OF RETURNS ON NATIONAL EQUITY MARKETS

	Fixed Rate Period (1970:1-1973:3)	Floating Rate Period (1973:4-1980:6)	Whole Period (1970:1-1980:6)
Australia	70.0	91.6	85.4
Canada	52.8	73.3	67.6
Japan	69.4	61.7	65.6
Switzerland	57.5	84.8	77.4
United Kingdom	59.6	111.2	98.2
West Germany	61.5	60.6	60.7
United States	44.5	58.7	54.7

between the yield in any year and the yield in the previous year was statistically insignificant for each of the seven countries. This indicates that the absolute performance of a country's stock market during any particular period would not be helpful in predicting performance in any other period.[5]

Volatility of Holding Period Yields

While the returns on foreign equities during the 1970s were generally higher than on U.S. stocks, the risks faced by U.S. investors in acquiring foreign stocks were also greater. Throughout the period, the volatility of the return on equity investments—as measured by the standard deviation of the dollar value of the monthly returns on the stock market indices—was higher for each of the six foreign countries than for the United States (Table 7).[6] The volatility of foreign stock prices also increased in four of the six foreign markets between the fixed and the floating rate period. However, only in the case of the United Kingdom was this increase statistically significant.

Even if returns in a market exhibit high volatility, the addition of assets from that market to an existing portfolio may, on average, reduce the volatility of the portfolio's returns if the returns on the two markets are not closely correlated. While the returns on the various markets were positively correlated during the 1970s, the correlation coefficients were considerably less than 1 (Table 8). Due to this low correlation, international diversification could have markedly reduced the volatility of a U.S. investor's return on his portfolio.[7] Diversifying by equity market share, or equally across markets, would have reduced the standard deviation of the investor's portfolio about 15 per cent below the standard deviation on the U.S. market index.[8]

[5] Tests were made to see if any market's own movements were correlated one month to the next over the period. Five of the seven monthly correlations across the whole period were insignificantly different from zero, while the two significant correlations were low, 0.187 for Japan and 0.214 for the United Kingdom. These results lend general support to the efficient-markets hypothesis.

[6] While the volatility of the dollar value of stock prices was estimated to be higher in all six foreign markets, the difference was statistically significant only for Australia, Switzerland, and the United Kingdom.

[7] Given the actual or expected returns on a group of assets and the actual or expected variances and covariances of those assets, it is possible to derive the minimum variance portfolio for a given desired rate of return. See W. F. Sharpe, *Portfolio Theory and Capital Markets,* New York: McGraw Hill Book Co., 1970, chapter 5.

[8] With a uniformly diversified portfolio, the standard deviation during the floating rate period would have been 52.2 and the annual yield 8.3 per cent, while with a

Table 8
CORRELATION OF MONTHLY RETURNS WITH MONTHLY U.S. RETURNS

	Country					
	Australia	Canada	Japan	Switzerland	United Kingdom	West Germany
Fixed Rate Period (1970:1-1973:3)	0.315*	0.794‡	0.292*	0.402‡	0.374†	0.192
Floating Rate Period (1973:4-1980:6)	0.535‡	0.707‡	0.399‡	0.450‡	0.520‡	0.424‡
Whole Period	0.488‡	0.724‡	0.366‡	0.442‡	0.493‡	0.364‡

*Significant at 90 per cent confidence level.
†Significant at 95 per cent confidence level.
‡Significant at 99 per cent confidence level.

RISKS AND PROBLEMS IN FOREIGN EQUITY INVESTMENTS

Although many investors foresee potentially profitable opportunities in foreign equity markets, they often forego these investments because there are a number of risks and problems which are not present in domestic corporations. The risks may result from exchange rate variation, exchange and capital controls, and country-specific problems (country risk). Problems may also arise because of the minimal reporting requirements on many foreign stock markets. Foreign dividends and capital gain are also subject to taxation by the host country.

As was shown in the previous section, exchange rate fluctuations may have an important impact on foreign investment returns and their variability. However, the risks do not end there. Holding foreign-denominated assets also exposes the investor to risks from the potential imposition of exchange and capital controls. The most damaging controls usually arise when a country's currency is weak but the government does not want to allow it to be devalued. When this situation occurs, restrictions may be placed on the convertibility of the currency which may inhibit the investor's ability to repatriate dividends or to liquidate investments.

Some governments also impose capital controls on national equity markets for reasons of national security, either restricting or prohibiting foreign ownership of domestic equities. The effects of these controls on domestic stock prices are indeterminate. Limiting the potential pool of investors will tend to depress prices in that market. On the other hand, if, at a given price, foreign demand for a restricted stock exceeds the available supply, a two-tiered market may develop. In this case, foreigners may buy shares only from other foreigners, and so the price for foreign-owned shares could exceed the price for

portfolio weighted by market share, the annual yield would have been 6.2 per cent and the standard deviation, 49.9

Furthermore, average correlations of foreign market returns with U.S. equity tend to be generally low and highly variable one year to the next. This result implies that the use of any market correlations should probably be based on observations over a period of years.

domestically owned shares.

Country-specific risks may also be important. Some countries are not as politically secure as the United States, and hostile actions may result in the destruction or expropriation of assets in a country. Further, the indirect threat of hostility, or even potential hostilities near a foreign country, may adversely affect the exchange rate or market prices. Revolutions, governmental collapses, and major shifts in a government's political stance may all endanger foreign assets.

Government attitudes toward foreign investment may also change. When this occurs, expropriation of foreign investments or the forced sale of foreign holdings in the domestic market may take place. Fortunately, this problem rarely arises with stable governments, and when it does, it is more likely to be directed at foreign direct investment than at foreign equity holdings.

Many foreign stock markets also have less rigorous reporting requirements on listed companies than is present within the United States. Accounting standards and national attitudes toward profits also differ. The resulting lack of quality published information causes many foreign stocks to be out of conformance with state blue-sky laws within the United States. Blue-sky laws were enacted to prevent fraud in the sale and disposition of stocks, bonds, and other securities. These laws prohibit brokers from soliciting the sale of any security which is out of compliance with the state's blue-sky laws. An individual may, however, request the purchase of a nonconforming security.

Foreign equities also expose the investor to the tax laws of the foreign country. Tax laws vary markedly between countries. Most impose a withholding tax on dividends to foreigners. Capital gains may also be taxed, with the period necessary for long-term capital gains treatment generally varying from one year upward, while the tax rate on long-term capital gains generally ranges from zero to about one-half the foreign income tax rate. However, within limits, these expenses may be offset by the Foreign Tax Credit.

ALTERNATIVES TO DIRECT INVESTMENT IN FOREIGN EQUITY MARKETS

An investor desiring to invest in business activities abroad, but wary of direct participation in foreign markets, has two alternatives. He may buy shares in a domestic multinational firm (MNF), or he may purchase shares in a foreign corporation whose stock is listed on a domestic stock exchange. A key question, however, is whether these types of investments provide a degree of diversification approaching that which could be achieved by purchasing the shares on foreign stock exchanges.

Domestic MNF's may allow the investor to avoid some of the problems of direct foreign equity investments. Domestically listed stocks are generally cheaper and easier to invest in than foreign stocks, and they avoid dealing directly in foreign currencies. The MNF's also handle foreign taxation internally, and they generally are in compliance with state blue-sky laws.

MNF's, however, have many of the same risks of foreign equities. First, capital controls may inhibit a company's ability to repatriate its foreign earnings. Second, the company's foreign holdings may be subject to expropriation. In fact, direct foreign holdings are more likely to be seized than foreign equity holdings. Third, foreign-denominated transactions are subject to exchange risk. These risks affect the investor through the price of the company's shares.

The important question though is, does investing in U.S. MNF's allow an investor to reduce the variance of his portfolio by an amount approaching that which could be

achieved by direct foreign equity purchases? Unfortunately, the answer appears to be no.[9] While domestic MNF's do allow the investor international diversification into sales and cash flows, they do little to improve the portfolio's diversification in terms of reducing the expected variance.

Rather than investing directly in a foreign equity market, an investor may purchase the shares of foreign firms listed on stock exchanges within the United States. These stocks may be listed in two ways. First, shares may be listed directly, following the same procedures as a U.S. corporation. This is usually done by Canadian companies. Secondly, a stock already listed on a foreign exchange may also be traded on U.S. exchanges as an American Depository Receipt (ADR).[10] Before a stock's ADR's may be traded, the firm must agree to provide sufficient regular information to comply with the stock exchange's reporting requirements.

There are 80 foreign corporations listed on U.S. stock exchanges (Table 9). However, the number of national markets represented is limited. Over half the stocks are Canadian, and the stocks of many major countries, including West Germany, Switzerland, Australia, and France, are not represented. Most of the corporations are either large international conglomerates or are involved with energy- or natural resource-related activities. These stocks also have the same country and market-related risks of other shares in a foreign market.

Table 9
NATIONALITIES OF FOREIGN STOCK LISTED ON U.S. STOCK EXCHANGES

Country	Number of Companies Listed
Bahamas	3
Bermuda	3
Canada	43
Greece	1
Israel	3
Japan	6
Mexico	1
Netherlands	4
Panama	1
Philippines	5
Puerto Rico	3
South Africa	1
United Kingdom	5
Zambia	1
TOTAL	80

SOURCE: U.S. Securities and Exchange Commission, *SEC Corporation Index—Active Companies: As of April 30, 1980,* "Foreign Governments and Foreign Private Issuers," and *Fact Book 1980,* 25th edition, New York Stock Exchange.

Shares in these foreign corporations may allow some degree of international diversification without forcing the investor to endure many of the problems of foreign investment. Two sets of tests were made to see if these stocks behave more like other foreign stocks or more like U.S. equities. First, the prices of several of these stocks were correlated with the U.S. market index and their exchange rate adjusted national index. Second, changes in each stock's price were regressed against changes in both the U.S. and the national stock price indices. Eleven Canadian, British, and Japanese stocks were used.[11] The tests were made using monthly data across the floating

[9] A study by B. Jacquillat and B. Solnik found that by adding shares of domestic MNF's to a purely domestic portfolio, the standard deviation of an investor's portfolio could only be reduced by about 10 per cent. The reduction possible by moving to a truly international portfolio was estimated to be between 50 and 70 per cent. "Multinationals are Poor Tools for Diversification," *Journal of Portfolio Management,* Winter 1978, pp. 8-12.

[10] Once listed, the actual shares were warehoused in a bank, and ADR's representing those shares are traded. Each ADR constitutes a fraction, or multiple, of a share of the stock. International arbitrage acts to keep the prices of ADR's and shares on the foreign equity market in tight alignment.

exchange rate period, April 1973 through June 1980.

The correlations of the Canadian, British, and Japanese stocks with their domestic market indices were all at least 0.79, 0.84, and 0.86, respectively, while their correlations with the U.S. market index did not exceed 0.60, 0.51, and 0.56, respectively. In all cases the differences between the individual correlations were statistically significant at the 99 per cent confidence level. The regressions of percentage changes in the U.S. market price of the foreign stock against changes in both the U.S. and the home market all showed stock price changes to be positively and significantly correlated with their national indices. The coefficients on the U.S. index were insignificant, except for a British stock and a Canadian stock whose coefficients were negative. These results indicate that some of the effects of international diversification may be achieved by investing in the shares of foreign companies listed on U.S. stock exchanges.

CONCLUSION

During the 1970s, many U.S. investors began to consider investments in foreign equity markets. On average, investors who chose to diversify internationally did well. Not only did foreign stock markets yield higher returns throughout much of this period, but an internationally diversified portfolio was likely to have exhibited a lower overall price volatility than a similar portfolio of domestic stocks.

Internationally diversified investors, however, have had to accept many risks and problems not present when investing domestically. Foreign investment entails risks from exchange rate variations, and capital and exchange controls have on occasion caused difficulties. The possibility of foreign political or economic upheaval has made these assets riskier than domestic assets. Foreign taxation also has increased the complexity and at times the cost of foreign equity investments.

Different reporting and trading rules have also increased the risks the investor must face in certain markets. Moreover, some markets allow insiders to trade based on unpublished information. Besides increasing these risks, these problems may result in a corporations's noncompliance with state blue-sky laws.

Despite these problems, some investors view the high foreign returns in the past as an indication of higher returns in the future. This will not necessarily be the case. Furthermore, a large proportion of the returns on many foreign markets resulted from the depreciation of the exchange value of the dollar.

One set of relationships between markets seemed to hold throughout the 1970s; these were low but positive correlations between the national equity market returns. While these correlations varied markedly year to year, they seemed rather stable across longer periods. If these relationships continue in the future, an investor could exploit this information to lower the expected variance of his portfolio without reducing the expected yield of his overall portfolio.

Finally, while the stocks of U.S. multinational firms behave very much like other U.S. stocks, foreign stocks listed on U.S. exchanges moved closely with their home market indices. Although these stocks have many of the risks of equities on foreign markets, the companies provide good balance sheet information, and they allow the investor to avoid some of the problems of direct foreign exchange transactions.

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[11] Alcan Aluminum, Canadian Pacific Ltd., Carling O'Keefe Ltd., and Seagram Company were used for Canada; British Petroleum Company, Ltd., Plessey Company, Ltd., Shell Transport, and Unilever, Ltd., for the United Kingdom; and Hitachi, Honda Motor Company, Ltd., and Matsushita Electric Industrial Company for Japan.

Appendix

Market Indices of Capital International

The Capital International stock market indices are calculated as follows:

Base formula

$$I_{t+1/0} = 100 \frac{\sum_{i=1}^{n} P_{it+1} N_{jt}}{\sum_{i=1}^{n-1} P_{it-1} N_{i0} + P_{nt} N_{nt}} \div \frac{\sum_{i=1}^{n} P_{i0} N_{i0}}{\sum_{i=1}^{n-1} P_{it-1} N_{i0} + P_{nt-1} N_{n0}}$$

where

P_{it+1} = all share prices at calculation date $t+1$,

N_{it} = the total number of shares outstanding at the time of calculation corresponding to the number outstanding after the previous capital increase,

P_{i0} = all share prices at base date 0,

N_{i0} = the total number of shares outstanding at base date 0,

$\sum_{i=1}^{n-1} P_{it-1} N_{i0}$ = the market value of all companies (i) which do not require an adjustment for capital increase at date $t-1$ preceding the first adjustment,

$P_{nt-1} N_{n0}$ = the market value of company n which is being adjusted for an increase in capital immediately preceding the first adjustment,

$P_{nt} N_{nt}$ = the theoretical market capitalization of company n which is being adjusted for an increase in capital immediately after this adjustment, at time t.

The yield adjusted stock market indices used in this study are calculated as follows:

Base formula

$$AI_{jt} = AI_{jt-1} (I_{jt}/I_{jt-1}) (1 + T_{jt} D_{jt}/1200)$$

where AI_{jt} = stock index of country j adjusted for reinvestment of dividends at time t,

I_{jt} = Capital International stock market index of country j at time t,

(I_{jt}/I_{jt-1}) = the proportional change due to capital gain or loss,

$(1 + T_{jt} D_{jt}/1200)$ = appreciation of index due to reinvestment of dividends,

T_{jt} = dividend tax rate in country j at time t,

D_{jt} = annual dividend yield in country j at time t.