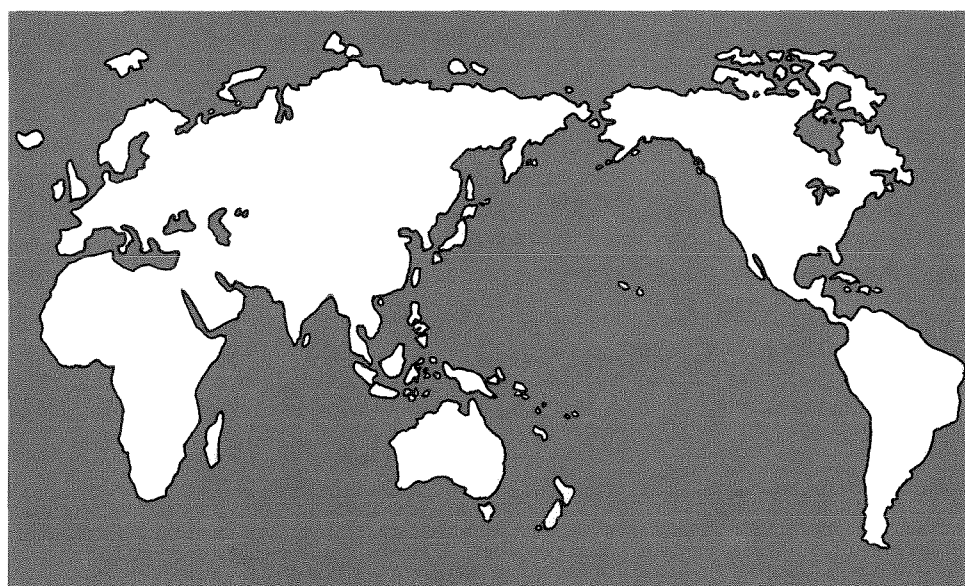


FEDERAL RESERVE BANK
OF SAN FRANCISCO

ECONOMIC REVIEW



FALL 1977

Flexible Exchange Rates, Multinational Corporations, and Accounting Standards

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In October 1975, the Financial Accounting Standards Board (FASB) issued a statement (Statement No. 8) designed to standardize procedures for reporting foreign-currency positions of U.S. multinationals. FASB-8 prompted a storm of protest from many of these firms, which argued that it would result in violent swings in reported earnings not related to the fundamental economic condition of a firm. Any such volatility of earnings would, in the view of a widely accepted body of financial theory, penalize share prices of multinationals and thereby increase their costs of raising capital. In opposition, some analysts argue that investors can be expected to "see through" reported earnings figures to distinguish between fluctuations due to "fundamentals" and those due to accounting standards which don't reflect such "fundamentals."

Despite the obvious inconsistency between these polar views, no systematic statistical test has been made to date of FASB-8's effect upon share prices of multinationals. This reflects the fact that the new standards have only been in effect since January 1976, and that few companies had previously followed the accounting procedures mandated by FASB-8. Sufficient data are now available to test for the effects of FASB-8 upon the costs of capital for multinationals. The results of such tests are reported in this study.

Any such study must recognize that FASB-8 standards were super-imposed upon a system of quasi-floating exchange rates which permitted various degrees of exchange-rate flexibility, selectively since August 1971 and more widely

I. Floating: A New Era for Multinationals

Multinational corporations attract a great deal of attention because of the public's fascination with their size and power.¹ It is useful to con-

sider how multinationals are different from other firms, and in particular, which differences are essential for measuring corporate performance. since March 1973. For multinationals, such flexibility meant increased variability of the dollar value of foreign-currency items on balance sheets and income statements, with possibly increased variability of net earnings. This fact should have been fully appreciated by investors well before FASB-8 went into effect in January 1976. Therefore we need to look for possible effects of floating *per se* on costs of equity capital for multinationals, and then see if any additional effects can be attributed to FASB-8.

At the outset, it is important to limit the questions we shall try to address. No attempt will be made here to argue either for or against any of the specific provisions of FASB-8. Rather, we take its existence as given, and simply ask: what impact has FASB-8 had upon share prices of multinationals over and above the impact of the recent regime of quasi-floating exchange rates? In short, has FASB-8 provided investors with any "new" information on the asset properties of claims on multinationals? The answer given here will be a qualified "yes."

We first describe briefly in Section 1 the nature of the accounting changes mandated by FASB-8. In Section 2, we consider the impact which FASB-8 might produce on share prices of multinationals, over and above the impact resulting from the increased flexibility of exchange rates. Section 3 introduces the methodology used to test for this impact; Section 4 presents the findings of our empirical tests; and Section 5 discusses the implications of these findings.

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Multinationals are corporations which find it advantageous to locate their sales, manufacturing, marketing or financial activities in a number of different countries. Their major advantages include economies of scale from intensive employment of indivisible and highly specialized managerial functions, preferential location vis-à-vis major markets or suppliers of inputs, perhaps some ability to avoid governmental restrictions on operations and, more generally, various benefits flowing from a widely diversified set of operations.

Multinational organizations do, however, face unique costs. Basic problems arise from attempting to manage a far-flung organization whose lines of communication are frequently stretched to the point of extreme frailty. In terms of our main concern, a multinational presence implies a considerable increase in the complexity of financial statements. On the balance sheet, those items dealing with debt, inventories and physical plant—many of which are measured in different currencies—must all be converted back into the base currency employed by the firm for accounting purposes. The same is true of all the flow items in the income account, some of which must reflect changes in the value of balance-sheet items, measured in terms of some base currency.

The problems involved in producing informative financial statements for multinationals become more complicated under flexible exchange rates. The large adjustments of exchange rates after August 1971 and the openly-acknowledged continuous adjustments since March 1973 have made this fact amply clear to financial managers and investors. FASB-8 represents an attempt to replace those accounting standards that had been designed for a regime of fixed-exchange rates with standards more appropriate to a regime of flexible-exchange rates, and moreover, to standardize the diversity of accounting practices followed by multinationals in this period of adaptation to flexible rates.

FASB-8 requires quarterly income statements to report changes in the local-currency value of balance-sheet items, some of which may repre-

sent unrealized gains or losses.² It also standardizes the treatment of a number of major balance-sheet items. For example, all “nonmonetary” items, such as depreciation and cost of goods sold (including inventories), are translated into dollars at “historical” exchange rates; i.e., those prevailing when inventory was acquired or when a plant was built. In contrast, all “monetary” items, such as long-term debt denominated in foreign currencies, are translated into dollars at “current” rates. As a result, quarterly income figures become highly vulnerable to changes in the dollar value of large stock items such as inventories and debt. For example, for goods priced in foreign currencies, a strengthening of the U.S. dollar could lower the dollar value of current receipts relative to the dollar cost of goods sold, and thus could reduce measured net dollar earnings. Alternatively, the same stronger dollar could reduce the value of long-term debt denominated in foreign currency, and thus could lead to higher net dollar earnings. In sum, the effects of FASB-8 can be large and unpredictable. An assessment of their effects on future earnings reports requires detailed information about corporate balance sheets and income statements, as well as forecasts of exchange rates.

Prior to the enactment of FASB-8, accounting practices of U.S. multinationals varied considerably, particularly regarding translation rates (current vs. historical) for inventory and long-term debt.³ More important, most companies employed “reserve accounts” to absorb the impact of changes in the dollar value of balance-sheet items due to exchange-rate changes, thereby preventing such changes from appearing on quarterly income statements. The dollar value of these changes, plus or minus, could be accumulated over time and reported out on the income statement when the impact was as small as possible, thereby minimizing the impact of exchange-rate changes on reported net earnings. With many multinationals having become accustomed to using reserve accounts in this fashion to stabilize reported earnings, the storm of protest which greeted FASB-8 is not surprising.

II. FASB-8: Additional Problem for Multinationals?

The potential for increased earnings variability (measured in U.S. dollars) arises from the in-

creased flexibility of exchange rates, quite independently of a particular set of accounting stan-

dards. Investors are well aware of this fact, and also of the use of reserve accounts to smooth out the impact upon reported earnings of exchange-rate fluctuations. In this situation, does the enactment of FASB-8 place any added burden on multinationals over and above the burden implied by exchange-rate flexibility? Was the cry of protest over FASB-8 justified? Before considering this question, we should first consider what, if any, burden is implied for multinationals by a move toward exchange-rate flexibility *per se*.

Two assumptions are involved in the hypothesis that the increased earnings variability associated with a move toward floating exchange rates will raise capital costs for multinationals. First, we assume that an increase in the *permissible* flexibility of exchange rates implied by reduced official intervention in foreign-exchange markets—which defines our current system of quasi-floating—will result in an increase in the *actual* flexibility of exchange rates.⁴ Second, we assume that an increase in actual rate flexibility raises the variance of multinationals' profits measured in dollars.⁵ Neither proposition is necessarily true. The first depends on conditions affecting the private demand and supply of foreign exchange, as well as the level of central-bank intervention under our quasi-floating system. Even granting the first assumption, however, the variance of multinationals' net dollar profits can rise or fall depending upon the variability and covariability of dollar prices of currencies in which foreign-currency positions exist.⁶

III. Measuring the Impact of FASB-8

It is well known that movements in the overall stock market significantly affect returns on individual stocks. Thus, in testing for the effects of floating and FASB-8, it is necessary to adjust the returns of the companies being tested for movements in the overall market. This section briefly describes one widely-accepted method for taking account of market movements.

Modern financial theory, as developed by W. F. Sharpe and others, has shown the relationship between the rate of return on an individual security or portfolio and the overall "market return" in the following form:⁸

For purposes of exploring the impact of increased rate flexibility, however, we will take these two propositions to be empirically valid. Exchange rates in recent years have in fact fluctuated more, at least on a quarter-to-quarter basis, than during the pre-August 1971 era of "fixed" exchange rates. And although multinationals have the potential of minimizing the earnings impact of exchange-rate variability, they have made only limited progress in this direction.⁷

In this situation, would the application of FASB-8 tend to raise multinationals' capital costs further than would be expected on the basis of the increased flexibility of exchange rates? For comparisons of multinationals with purely domestic firms, the answer depends upon whether pre-FASB-8 accounting standards provide an accurate measure of earnings behavior over time, and whether more accurate measures can be devised. For comparisons among multinationals, the answer depends upon whether reported earnings figures can be standardized by adjusting for differences in accounting techniques and in the use of reserve accounts.

Answers to these questions can be sought with the aid of a model which relates returns on securities both to a systematic (or overall) market component of risk and to an unsystematic (or nonmarket) component of risk. We seek to determine how these two risk components are affected by the increased flexibility of exchange rates, and subsequently by the impact of FASB-8 on corporate earnings reports.

$$(1) E[R_{jt}] = \alpha + \beta_j E[R_{mt}] + \epsilon_t \quad \text{where}$$

$E[R_{jt}]$ = the expected rate of return on security "j" or portfolio "j" at time "t"

$E[R_{mt}]$ = the expected rate of return on the market portfolio at time "t"

β_j = a parameter describing the sensitivity of $E[R_j]$ to changes in $E[R_m]$

α = a measure of the expected return to portfolio "j" in excess of or below the average market return re-

ϵ_t = required for the j th risk class
the impact of random or "outside"
disturbances on R_j at time " t "

Viewed in a straightforward manner, equation (1) says that changes in the expected return on a given asset or portfolio occur because of changes in the overall expected return on all risky assets, $E[R_m]$, and because of changes in "other" factors peculiar to such a given asset or portfolio which are captured in turn by a change in " α ", if they persist, or by ϵ_t if they are essentially random and do not persist. Portfolio risk or movement in $E[R_j]$ that is correlated with returns on risky assets for which the market portfolio is a surrogate is termed *systematic risk*, while that which is uncorrelated is termed *non-systematic risk*. Systematic risk is an unavoidable response of $E[R_j]$ to changes in the overall return on assets, while non-systematic risk ought, in theory, to be avoidable through portfolio diversification.

The relationship given by equation (1) is usually called the *security market line*. It is derived from a consideration of the choices made by investors of which assets to hold in their portfolios. Presumably, investors will demand a higher expected return from a portfolio which they perceive to be riskier (i.e., to have more variable returns). As each investor buys and sells securities in order to put together the portfolio which best satisfies his preferences for return vs. risk, the market prices of securities will adjust until equation (1) is satisfied.

The model just described can be employed to test for the impact of floating and FASB-8 upon costs of capital for multinationals, relative to other firms, by substituting actual measures of past returns for the expected values in equation (1).⁹ When this is done, the " α " and " β " terms retain the interpretation given them in equation (1), except for the substitution of "actual" where

"expected" had previously been employed.

Floating and/or FASB-8 may tend to cause changes in either " α " or " β ". Either event would be likely to affect overall market risk, in view of the heavy concentration of multinationals in the ranks of major U.S. firms. In such a case, some component of the overall movement in returns would reflect the impact of changes in foreign-exchange rates. Multinational firms would tend to be particularly sensitive to the (new) foreign-exchange component of market risk, and therefore returns to multinational equities would tend to respond more sharply to changes in market returns, at least to the extent that such changes reflect the foreign-exchange component of market risk. In short, " β " may rise either after floating or FASB-8.

Alternatively, if either floating or FASB-8 causes " α " to vary significantly from zero, then *ex post*, over the sample period in question, some persistent, exogenous "non-market" disturbance must be at work. Such a disturbance may or may not be associated with a change in " β ," depending upon whether or not it is associated with a change in perceived systematic ("market") risk. A negative value of " α " with no significant shift in " β " would suggest the existence of new information, causing a persistent reduction in the market's perceived value of multinational firms. Costs of raising a given amount of capital, which would now represent a larger share of such firms' discounted present value, would then rise.

In contrast, negative error terms at a particular point in time would suggest a one-time reduction in *ex post* returns on multinationals' shares as a result of floating or FASB-8. In any case, the results obtained by estimating equation (1) for various portfolios of multinationals, along with a control group of domestic firms, indicate the degree to which these events affected the multinationals' costs of capital.

IV. Empirical Tests of the Impact of FASB-8

Our empirical tests use Equation (1) to measure the performance of share prices of three groups of firms over five time periods. The firms investigated include a control group of non-multinational firms (trucking), a group of multinationals influenced to some extent by FASB-8 (chemicals, international oils and drugs), and a "sensitive" group selected specifically because of

the large FASB-8 impact upon their earnings. The five time periods investigated are the "fixed exchange-rate" period (January 7, 1970 through August 11, 1971), the "transition" period (August 25, 1971 through March 21, 1973), and three subsequent "floating" periods—the "floating without FASB-8" period (April 4, 1973 through October 15, 1975), the "floating with

FASB-8 expected" period (October 22, 1975 through March 31, 1976) and finally the "floating with FASB-8" period (April 7, 1976 through March 30, 1977).

The grouping of firms is designed to distinguish between the performance of multinationals and that of domestic firms, and to distinguish between the performance of "typical" multinationals and that of more "sensitive" firms. Since "floating" alone could adversely affect performance, we measure their actions during the fixed-rate period and again during each of the two periods of quasi-floating after August 15, 1971. Since FASB-8 was officially adopted on October 15, 1975 to apply effectively to first-quarter 1976 earnings reports, we consider also the period from October 22, 1975 through March 31, 1976, when FASB-8's existence was known but before the appearance of any first-quarter earnings figures. In effect, this period isolates any impact arising from the application of a known form of FASB-8. The final period from April 7, 1976 through the end of our sample, March 30, 1977, tests for the "new information," if any, that was contained in actual earnings reports under FASB-8 that were then beginning to appear.

The control group "trucking" is Standard and Poor's stock index of five trucking firms.¹⁰ Selection of this "non-multinational" control group required a careful search, because almost any grouping of major U.S.-based firms contains a significant multinational component, and multinational firms dominate the Fortune 500 list of major corporations.¹¹ However, the S & P "trucking" group is a readily available composite with virtually no multinational involvement.

The "typical" multinational group was selected on the basis of substantial multinational involvement of the firms in certain S & P composites. Chemicals, drugs and international oil companies were most consistently represented in samples of major multinationals, as is evident from the listings in the Appendix. The "sensitive" group of multinationals was selected to represent those firms whose earnings reports during 1976 were most clearly affected by the application of

FASB-8 standards.¹² Those firms vary significantly in terms of size and industry grouping, and *ex post* their only common characteristic is a high level of sensitivity to FASB-8 standards.¹³ The "negative impact on earnings under FASB-8" (Table 1) measures the ratio of the change in earnings under FASB-8 to what total earnings would have been under previous accounting rules. For example, the 1976 per share earnings of American Brands were 28 percent less under FASB-8 than they would have been under previous accounting rules. In short, Table 1 suggests the degree to which FASB-8 affected the earnings of the "sensitive" group.

Application of FASB-8 standards apparently depressed earnings for most U.S. multinationals during 1976. This result reflected both the particular form of the standards and the behavior of the U.S. dollar during that period—and as most corporate reports carefully pointed out, the impact could subsequently be reversed given different exchange-rate behavior. Negative earnings effects under FASB-8 during 1976 possibly reflected the conjunction of a generally strengthening U.S. dollar and the multinationals' typically heavy investment abroad in inventories, plant and equipment. Circumstances of this type raise the cost of goods-sold relative to sales receipts when each is measured in U.S. dollars, and thereby lower corporate profit margins. Should the U.S. dollar weaken consistently during 1977, the losses recorded under FASB-8 in 1976 would become gains. The overall impact would be increased volatility of reported net earnings.

It should be emphasized that the earnings of firms in the "sensitive" group are generally expected to be *more variable* under FASB-8, and not necessarily higher or lower. While the FASB-8 impact was universally negative during 1976, *overall* earnings figures for the firms in Table 1 varied considerably during that year. Seven of the thirteen reported higher earnings in the first quarter of 1976 than in the comparable period of 1975. Earnings performance for the "sensitive" group as a whole, which had lagged behind the overall corporate average in earlier years, continued to do so in 1976 (Table 2).

"Relative earnings growth" remained rela-

tively stable over the 1975-76 period. Relative earnings growth is the difference between overall corporate earnings performance, as measured by the percentage change in current quarterly earnings over those for a year earlier, and that for the "sensitive" group, divided by overall earnings performance. (The one exception, in the third quarter of 1975, reflected the very small improvement in overall earnings in that quarter.) In contrast, the *absolute* difference in performance between overall earnings and sensitive-group earnings generally widened over the two-year period. However, the figure for first-quarter 1976—a crucial period for earnings variability under FASB-8—was less than a third of a standard deviation from the mean absolute difference for the 1975-76 period.¹⁴ In short, there was nothing particularly unusual in the first quarter of 1976 about the *level* of earnings performance of the "sensitive" group *relative* to the *level* of overall corporate-earnings performance.

Next, by considering movements within different time periods, we try to distinguish between the impact on share prices associated with float-

ing *per se* and the impact resulting from the expected or actual application of FASB-8. The two earlier ("fixed rate" and "transition") periods are rather clearly delineated. (See p. 47 above.) In contrast, it is difficult to identify a date when we might expect that FASB-8 would begin to affect the share prices of multinationals. The Financial Accounting Standards Board began preliminary consideration of new standards for multinationals in April 1973. There followed a series of exposure drafts, memos and public hearings, and FASB-8 was officially released on October 15, 1975. By the end of 1974 analysts generally expected that new regulations would be forthcoming, although a powerful negative reaction by multinationals to FASB's Exposure Draft of December 31, 1974 caused some to anticipate a fairly significant softening of the terms in that draft. Because of such continuing uncertainty, we would expect any possible effects of FASB-8 to surface only when the new standards had become "official"—hence our specific identification of the period from October 22, 1975 through March 31, 1976 as "floating with FASB-8 ex-

Table 1
The Effect of FASB-8 Accounting Standards on
1976 Reported Earnings of "Sensitive Firms"

	Impact (%) on 1976		Rank in Fortune 500	Assets (billions) ^d	Industry and SIC Code	
	Earnings Resulting from FASB-8 Standards*					
1. American Brands	28	(EPS) ^c	57	\$2.456	Tobacco	(21)
2. Armco Steel	12 ^a	(NI)	50	\$2.834	Primary metals	(33)
3. Bell & Howell	11 ^a	(EPS)	338	\$.408	Photographic	(38)
4. Celanese	13	(NI)	85	\$1.910	Chemicals	(28)
5. Chemetron	25	(NI)	336	\$.412	Chemicals	(28)
6. Chicago Pneumatic	39	(NI/EPS)	531	\$.255	Air Transport	(45)
7. Eastman Kodak	8.6	(EPS)	22	\$5.524	Photographic	(38)
8. Ferro	17	(NI)	445	\$.246	Chemicals	(28)
9. Gardner Denver	20 ^a	(EPS)	332	\$.416	Air Transport	(45)
10. Gillette	20	(NI)	170	\$1.071	Fabricated Metal Products	(34)
11. Hoover	59	(EPS)	341	\$.391	Electrical Equipment	(36)
12. Norton	13	(EPS/NI)	295	\$.483	Stone, Clay, Glass and Concrete	(32)
13. Sherwin Williams	15	(EPS)	266	\$.587	Petroleum Refining & Related Industries	(28)
Group Average	21.6		140 ^b	\$1.307		

a. First three quarters of 1976.

b. Rank of firm in Fortune 500 with comparable (1.307 b.) assets.

c. Percent reduction in earnings per share (EPS) or net income (NI) due specifically to the implementation of FASB-8 standards.

d. Source: Fortune 500 list of U.S. firms in 1976.

*Negative

pected." In other words, we would expect that the maximum impact from *anticipation* of FASB-8, as opposed to its actual application, would arise only after this "official" release, when the specific content of the regulations had been absorbed by analysts.

Two events distinguished the beginning of the "FASB-8" period. First was the appearance of the initial set of earnings reports prepared under FASB-8 standards. Second was the crucial FASB decision (April 29, 1976) not to re-consider the "controversial" standards contained in FASB-8. In reporting the decision, the *Wall Street Journal* observed:

The standard (FASB-8) has drawn more criticism than any other issued by the three-year-old standards board, the private sector's top authority on accounting rules. Business critics contend that the new rule introduces erratic and meaningless fluctuations in earnings that will only confuse investors. Some companies have protested to the Securities and Exchange Commission and a few have threatened to ignore the rule.¹⁵

Thus, until late April 1976, many firms and investors still had reason to believe that FASB-8 would be rescinded or altered. Again, many financial managers remained unconvinced that investors had already discounted into share prices (prior to FASB-8's enactment) all the information which its application might be expected to reveal.

The results obtained from estimating equation (1) over five time periods are reported in Table 3. R_{jt} , the return on portfolio j , is measured by the rate of change of the price of portfolio j at time t ; that is, $(P_{jt} - P_{jt-1})/P_{jt-1}$. R_{mt} is measured by the weekly rate of change of Standard and Poor's value-weighted composite index of 500 stocks.¹⁶ The prices of the non-multinational and "typical" multinational portfolios are taken from Standard & Poor's value-weighted indices, and the price of the "sensitive" portfolio is measured both as the average and the value-weighted average of the share prices of the 13 firms listed in Table 1.¹⁷

The results reported here suggest that the only significant and persistent impact upon multinational share prices occurred in the "sensitive" group, and then only during the "FASB-8" period (April 1976-March 1977). During that period, three factors were present together for the first time—the adoption of FASB-8, the availability of new earnings reports and the Accounting Board's reiteration of its intention to stand firm on the new standards. Our results for the "sensitive" group suggest a reduction in the *ex post* annual rate of return during the FASB-8 period of about one half of one percent below that for a typical portfolio with the same market risk (measured by " β ").¹⁸ This outcome is based upon the significant negative level for the estimated value of " α " for a weighted portfolio of "sensitive" firms in the "after FASB-8" time period—see column (5) in the "weighted-sensitive" group. Such a result implies that some force exogenous

Table 2
Earnings Performance of "Sensitive" Group Relative to Overall Performance of U.S. Corporations¹

Time Period	Relative Earnings Growth	Difference in Earnings Growth
	(Overall-Sensitive) Overall	(Overall-Sensitive)
1975 I	0.58	8.3%
II	1.98	12.5
III	22.60	11.3
IV	1.92	25.1
1976 I	0.64	31.0
II	1.79	65.4
III	2.20	34.1
IV	1.47	13.8

¹ Earnings performance is measured by the percentage change in quarterly earnings over the quarterly figure for a year earlier.

Sources: U.S. Department of Commerce, Commerce News, July 21, 1977 for overall corporate earnings and *Wall Street Journal*, various issues, for earnings of the sensitive group.

to overall market factors persistently depressed the performance of "sensitive" shares beginning in April, 1976. This result is also apparent from plots of indices of these share prices against the S&P 500 from January, 1975 through March, 1977 (Chart 1). Since the appearance of this depressive factor coincided with the appearance of the first set of earnings reports under FASB-8 and the FASB's reaffirmation of its new standards, we cannot reject the hypothesis that the share prices in this group were depressed by an increase in their perceived riskiness. Such firms would have to offer risk-averse investors subsequent issues of shares at a lower price, and would therefore experience a higher cost of raising capital.

Our conclusions are strengthened by two factors which reduce the probability that the observed behavior of the "sensitive" group was due to some phenomenon not related to the impact of foreign-exchange risk on expected variability of earnings. First, the diversity in size and industry-mix of the "sensitive" group sharply reduces the probability that some other unspecified event common to all companies could have depressed their expected rates of return after April 1976 (Table 1). Second, the fact that the earnings performance of the "sensitive" group, relative to that of all U.S. corporations, was fairly steady

over the period (Table 2), suggests that a rise in expected earnings variability—not a fall in the expected level of earnings—depressed the "sensitive" group's expected returns in the FASB-8 period. In short, an alternative explanation for the behavior of the firms in the "sensitive" group would have to include identification of some other event(s) which reduced their attractiveness after April 1976.

Despite the previous reference to rising values of " β " as a possible result of floating rates, that effect was not evident in the one-year post-FASB-8 period. " β " rose in various "floating" periods for the chemical and drug groupings, but it also rose for the control (trucking) group while failing to rise significantly for the rest of the multinationals. The impact of floating on market rates apparently was not powerful enough to affect the responsiveness of multinational shares to market volatility, to an extent that would dominate the usual instability of " β " values for industry aggregates over relatively short periods of time.

Several other conclusions emerge from the results reported in Table 3. "Floating" rates *per se* apparently produced no significant and persistent negative pressure on share prices of any group of multinationals. In view of the considerable discretion which multinationals had avail-

Chart 1

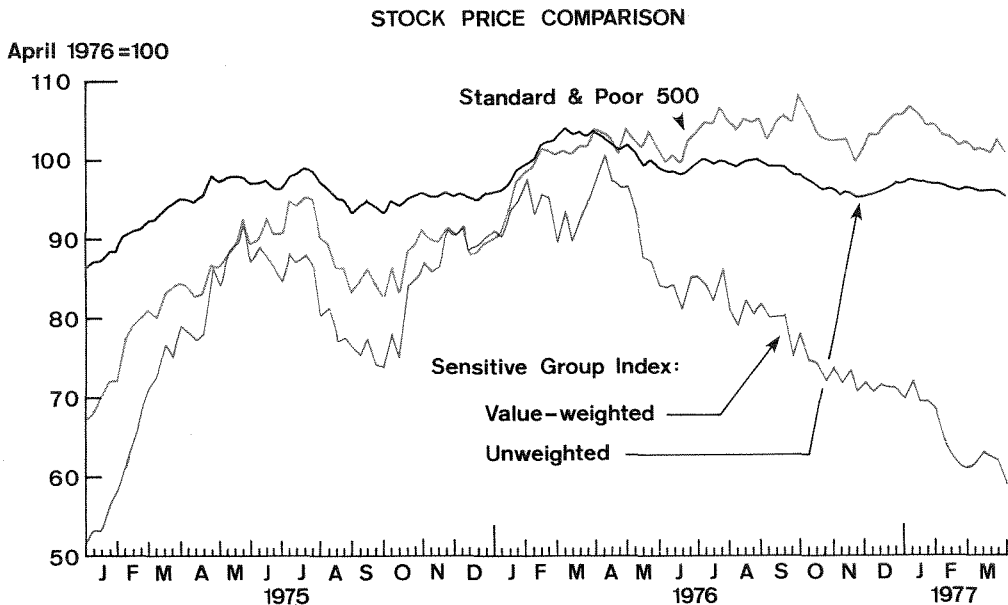


Table 3
Impact of "Floating" and FASB-8 on Security Prices
(Estimation of equation (1))

Portfolios	Time Periods					
	Fixed	Transition	Floating			Overall
			Pre-FASB-8	Expected FASB-8	After FASB-8	
1/70- 8/71	8/71- 3/73	3/73- 10/75	10/75- 3/76	3/76- 3/77	1/70- 3/77	
	(1)	(2)	(3)	(4)	(5)	(6)
Non-Multinationals						
(Truckers)						
$\hat{\alpha}$	.0059 (1.67)	.0028 (.96)	.0044 (1.28)	-.0024 (.35)	-.0030 (.75)	.0031 (1.84)
$\hat{\beta}$	.885 (5.32)	1.330 (7.37)	1.110 (9.37)	.858 (2.22)	.616 (2.39)	1.042 (13.83)
\bar{R}^2	.25	.39	.40	.15	.08	.34
DW	1.52	1.58	2.24	2.10	1.98	1.99
SEE	.0321	.0270	.0390	.0310	.0289	.0332
"Typical" Multinationals						
(Chemicals)						
$\hat{\alpha}$	.0026 (1.66)	.000 (.00)	.0029 (1.82)	.0015 (.46)	-.00335 (1.51)	.0012 (1.54)
$\hat{\beta}$	.809 (10.97)	1.090 (13.78)	1.080 (19.49)	1.200 (6.56)	1.077 (7.55)	1.033 (28.93)
\bar{R}^2	.59	.70	.74	.66	.52	.69
DW	1.94	1.70	1.54	1.77	1.50	1.61
SEE	.0142	.0120	.0180	.0150	.0160	.0157
(Drugs)						
$\hat{\alpha}$	.0002 (.17)	.0033 (2.43)	-.0004 (.22)	-.0042 (.73)	-.0035 (1.82)	-.0002 (.27)
$\hat{\beta}$	.891 (14.81)	.956 (11.55)	1.11 (18.37)	.845 (2.67)	1.290 (10.47)	1.055 (28.06)
\bar{R}^2	.73	.62	.72	.22	.68	.68
DW	1.34	1.40	1.50	1.50	1.46	1.47
SEE	.0116	.0120	.0200	.0250	.0140	.0166
(International Oils)						
$\hat{\alpha}$	.0012 (.45)	.0014 (.73)	.0003 (.14)	-.0015 (.46)	.0026 (1.39)	.0007 (.71)
$\hat{\beta}$	.900 (6.95)	.789 (6.96)	.876 (13.56)	.884 (4.77)	.929 (7.64)	.854 (18.54)
\bar{R}^2	.37	.37	.58	.50	.53	.48
RW	2.24	2.13	1.98	1.16	1.68	2.05
SEE	.0250	.0170	.0210	.0150	.0140	.0203
"Sensitive" Multinationals						
(weighted)						
$\hat{\alpha}$	.0009 (.32)	.005 (1.89)	-.0001 (.09)	.0004 (.09)	-.00975 (3.35)	-.0004 (.29)
$\hat{\beta}$	1.02 (8.23)	1.12 (7.24)	1.21 (14.61)	1.15 (4.19)	1.18 (6.36)	1.18 (20.77)
\bar{R}^2	.45	.39	.62	.42	.44	.53
DW	2.55	1.96	2.31	2.26	2.23	2.21
SEE	.0230	.0230	.0280	.0220	.0200	.0250
(unweighted)						
$\hat{\alpha}$	.00 (.00)	-.0013 (1.23)	-.0003 (.23)	.0019 (.83)	-.0034 (2.43)	-.0005 (.83)
$\hat{\beta}$	.938 (17.48)	.981 (14.62)	.851 (20.06)	1.04 (7.94)	.808 (8.95)	.900 (32.83)
\bar{R}^2	.79	.72	.76	.73	.61	.74
DW	2.01	1.98	1.93	1.14	1.90	1.94
SEE	.0100	.0099	.0140	.0107	.0101	.0120

able in the pre-FASB-8 period in the use of reserve accounts and in the application of historical or current exchange rates to balance-sheet valuations, analysts may have become persuaded that floating rates needn't increase profits variability for multicurrency firms. Alternatively, the effects of floating rates on multinational share prices may have been spread widely enough, over time and across firms, so that statistically significant shifts in performance would become difficult to detect at any single point in time. Inspection of the error terms in the regressions underlying Table 3 supports the latter hypothesis, since the standard error of the estimate tended to rise when moving from the "fixed" to the "early floating" and "general floating" periods.

The *expected* application of FASB-8 apparently had little impact in the fourth of the five time periods, although to some slight extent, investors may have anticipated a more harmful impact of FASB-8 on oil-company earnings during that period than was justified by the actual results which later appeared. The data strongly suggest, however, that the events surrounding the application of FASB-8 caused investors to downgrade multinationals in the "sensitive" group. In other words, FASB-8 strongly affected relative returns within the multinational group, although a broad aggregate index of multinationals would likely show little if any deterioration relative to domestics in this respect. These

results are reinforced by the sharp departure, in late April 1976, of share prices of the weighted and unweighted "sensitive" group from a path which had previously followed movements of the S & P 500 (Chart 1).

The more pronounced earnings response of the "weighted-sensitive" group suggests of course that the larger firms in the sample were more powerfully affected. This is confirmed by the estimation of equation (1) for each of the 13 companies in this group—especially Eastman Kodak, which performed very much like the value-weighted "sensitive" group as a whole.¹⁹ Why should shares of relatively large firms—which suffer a smaller impact in percentage terms—respond more sharply to an expected increase in earnings volatility reported under FASB-8? The proximate answer is that the results under the new standards were more of a "surprise" for relatively large firms than for smaller firms. Perhaps analysts anticipated more of a rise in the volatility of earnings for relatively small firms under FASB-8, while at the same time expecting no significant impact upon earnings volatility for larger firms. Further, the rise in expected volatility probably was *relatively* large for large firms when compared with past volatility. For smaller firms, the larger absolute effect under FASB-8 was more fully anticipated and relatively less significant when compared with past levels of earnings volatility.

V. Concluding Observations

The application of FASB-8-mandated accounting standards has apparently produced few unanticipated effects on earnings, and therefore on share prices, of typical multinational firms such as the oils, drugs and chemicals. The performance of such groupings is generally indistinguishable from that of a control group of domestic firms—whether in the face of "floating", anticipation of FASB-8, or actual application of that new standard. Our results suggest, however, that earnings reports which resulted from application of FASB-8 did provide new information which helped investors distinguish *between* multinational groupings regarding the impact of exchange-rate adjustments upon (actual and expected) volatility of reported net dollar earnings. The new standards are significant, then, not so

much because of their specific form but because they apply a single standard to all multinationals, and thereby enable the market to judge more accurately the relative performance of firms within the overall multinational grouping. Prior to the application of FASB-8 standards, cross comparisons between multinationals were very difficult, because of different conventions regarding the use of reserve accounts and the employment of historical or current exchange rates for translation of such balance-sheet items as long-term debt, inventories and physical plant.

Given the problems which some firms encounter under FASB-8, it can be argued that they should leave diversification of foreign-exchange risks to the investment community, which would choose among claims on a group of firms whose

fortunes are weakly correlated so as to cushion the impact of foreign-exchange gains and losses on portfolio values. This diversification argument presumes, however, that investors possess very detailed accounting information about multinationals, are able almost immediately to foresee accurately the impact of expected exchange-rate changes upon the value of a collection of their shares, and are able to act subsequently to bid multinational share prices to levels which fully reflect such information. Given the high cost of obtaining such information and given the considerable pressures from boards of directors, financial officers in multinational firms can probably be excused for taking little consolation in the investor-diversification argument. At the very least, some period of time may be required to gather the information necessary to make the new system operable. FASB-8 can have—and undoubtedly has had—powerful short-run implications for the cost of capital of certain individual multinational firms.²⁰

Finally, some consideration should be given to the implications of our findings for the manage-

rial behavior of multinational firms. Nothing in our findings specifically suggests that multinationals as a group should expend much effort to alter the specific form of accounting standards. The important thing is that the same standards be applied to all firms. Beyond that, accounting standards can do little to change the fact that multinationals' net cash flows (expressed in some numeraire currency) become subject to variation whenever exchange rates move up or down. Managers cannot escape the fact, for example, that if they have borrowed large amounts of deutschmarks but hold only dollar-denominated receivables and assets, an appreciation of deutschmarks against the dollar will force them to allocate more of their dollar receipts simply to pay off the deutschmark liability. Consideration of problems of this sort may suggest to managers of multinationals that, like it or not, they are in the foreign-exchange business. Consequently, they may find an attractive return at the margin if they utilize their resources to minimize the impact of exchange-rate fluctuations on net earnings expressed in local currencies.

FOOTNOTES

1. See for example, *Global Reach: The Power of the Multinationals* by R. J. Barnett and R. E. Muller (Simon & Schuster, New York, 1975). For a somewhat more even-handed treatment, see R. Vernon, *Storm over the Multinationals: The Real Issues* (Harvard Univ. Press, Cambridge, 1977).

2. For a detailed description of the new standards see FASB's Statement of Finance Standards No. 8, October 1975, Financial Accounting Standards Board, Stamford, Connecticut. A useful discussion of the new standards and their background is given by Burns (1976).

3. For a survey of such practices see Rodriguez (1977).

4. It may be that the very existence of a higher level of permissible flexibility of exchange rates will cause investors, for a time at least, to expect more exchange rate variability and more earnings variability, thereby leading to a demand for high rates of return on shares of multinationals.

5. This argument about the "costs" of floating was advanced by Lanyi (1969).

6. See Makin (1977) for a proof and further discussion.

7. Of course firms hedge receivables or payables in forward markets and frequently borrow and lend to reduce exposure. But efforts have generally been confined to a currency-by-currency hedging strategy rather than moving to a comprehensive hedging strategy. For a discussion of such strategies see Makin (1976) (1977).

8. For a derivation of equation (1) and a fuller discussion of its meaning see Sharpe (1970). A good conceptual discussion appears in Sharpe (1972).

9. Expected rates of return represented in equation (1) will be measured, for use in empirical tests below, by actual rates of change of share prices. Dividends are not included in calculations of expected returns since we are interested in behavior of share

prices of multinationals relative to share prices in general and to a control group of non multi-nationals. There is no reason to expect a systematic difference in dividend policies between such broad aggregate firm groupings, and therefore consistent omission of dividend should not affect the relative rates of return on multinational shares. For the application of the market model to actual (ex post) data, see Jensen (1969).

10. All groups of firms are described in the Appendix.

11. See, for example, the list of 70 companies in the sample studies by Rodriguez (1977).

12. To discover this group I relied heavily on articles in various periodicals reporting upon the firms for which earnings were most sensitive to FASB-8 and exchange rate changes. Periodicals and dates of appearance of articles included, *Barrons* 12/6/76 and 8/8/77; *Business Week* 1/26/76, 9/6/76 and 6/20/77; *Chemical Week* 3/9/77; and the *Wall Street Journal* 3/13/75 and 12/8/76.

13. Enactment of FASB-8 required a major change in the accounting procedures for virtually all multinational firms examined, either in the form of termination of reserve accounts or a switch to historical/current translation rates for inventory/long term debt items on the balance sheet. A survey of such practices by Rodriguez (1977) showed that in 1975 only Pfizer (part of the chemicals group) had adopted standards generally in line with those required by FASB-8 in January, 1976.

14. The mean of the absolute differences between overall and "sensitive" earnings performance for the eight quarters of 1975-76 was 25.2 with a standard deviation of 18.8.

15. *The Wall Street Journal*, April 29, 1976, p. 12.

16. Weekly series of Wednesday closing prices were employed to calculate rates of change of share prices.

17. Wednesday closing prices for the "sensitive" group were taken from Standard and Poor's *Daily Stock Price Record*.

18. The figures reported in Table 3 refer to weekly returns which must be compounded over 52 weeks to be converted to annual rates.

19. This finding brings to mind the possible role played by foreign exchange problems in explaining the recent sharp deterioration in the value of Kodak's shares. **Business Week** ("The Market Manhandles a Blue Chip," June 20, 1977) reported on the situation at Kodak, indicating the view of Kodak's management that, "We don't think it is good management to try to protect against that (foreign exchange) loss by taking out large overseas borrowings, which is one of the devices used to try to offset that." (p. 37)

20. When interpreting the results reported here, it is important to remember that earnings reports measure net returns in terms of current dollars, and not necessarily in "real" terms. It is possible, although not necessarily true, that an earnings stream which is more volatile when measured in current-dollar terms is less volatile in terms of its real purchasing power over some multinational (or even national) basket of goods and services. In such a case, a rise in nominal variability may not mean any rise in real risk, and hence may not mean any rise in share prices. Of course, if the bulk of investors buying shares come from a single local-currency area and concentrate their purchases on local goods, there is greater likelihood of volatility in the real purchasing power as well as the local-currency value of the earnings stream.

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APPENDIX

A. Firms appearing in "domestic" and "typical multinationals" groupings:

Truckers

Consolidated Freightway
McLean Trucking
Overnite Transportation
Roadway Express
Yellow Freight Systems

Oil (Integrated International)

Exxon
Gulf Oil
Mobil Oil
Royal Dutch Petroleum
Standard Oil of California
Texaco

Drugs

Abbott Laboratories
American Home Products
Bristol-Meyers
Johnson & Johnson
Lilly (Eli) & Co.
Merck & Co.
Pfizer Inc.
Schering Plough Corp.
Searle (G.P.)
Sterling Drugs
Warner Lambert

Chemicals

Allied Chemical Corp.
American Cyanamid
Dow Chemical
duPont de Nemours
Hercules Inc.
Monsanto Chemical
Union Carbide

(All are from Standard and Poor's Stock Price Indexes.)