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DERIVATIVES**

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Financial Reporting for Foreign Exchange Derivatives

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FINANCIAL REPORTING FOR FOREIGN EXCHANGE DERIVATIVES

SYNOPSIS: A major objective of the FASB's financial instruments project, inclusive of SFAS 105, SFAS 107 and SFAS 119, is to provide information useful to investors in assessing the credit and market risk associated with the use of off-balance-sheet financial instruments. We survey 1992 SFAS 105 and SFAS 107 disclosures on Foreign Exchange Derivatives (FXD) to: (1) benchmark current practice by summarizing quantitative and qualitative disclosures of FXD, and (2) examine the usefulness of current disclosures in assessing market and credit risk related to FXD. In achieving these objectives, we provide insight into how leading U.S. multinationals operationalize accounting standards related to off-balance-sheet financial instruments and identify disclosure attributes of footnotes unarticulated to the financial statements.

We conclude from our survey that (1) some firms make extensive use of FXD, (2) there is substantial compliance with SFAS 105 and SFAS 107 requirements, (3) large dealers comply with the FASB's credit risk disclosure requirements, (4) book and fair values of FXD are small relative to contract and notional amounts and (5) disclosures providing information on market risk are deficient due to lack of both specificity and quantification.

Data Availability: Data used for this study are publicly available.

Introduction

The growth of off-balance-sheet financial instruments (i.e., derivatives), the dynamic state of financial markets, the complexity of financial engineering and the potential impact of derivatives on profitability and risk, led the Financial Accounting Standards Board (FASB) to

establish a financial instruments project in 1986. As a first step, the FASB issued an exposure draft (ED) *Disclosures about Financial Instruments* (1987) and then two statements requiring less disclosure than the ED. *SFAS 105, Disclosure of Information about Financial Instruments with Off-Balance-Sheet Risk and Financial Instruments with Concentrations of Credit Risk* (FASB 1990), requires disclosure of the contract amount of financial instruments with off-balance sheet (OBS) risk of loss. *SFAS 107, Disclosures about Fair Value of Financial Instruments* (FASB 1991), requires disclosure of the fair value of all financial instruments. More recently, *SFAS 119, Disclosure about Derivative Financial Instruments and Fair Value of Financial Instruments* (FASB 1994) requires disclosure of average fair value of and net trading gains and losses for derivatives held for trading purposes. For derivatives held for purposes other than trading, it requires disclosure about purposes, how the instruments are reported in the financial statements and additional information for hedges of anticipated transactions.

SFAS 105 and SFAS 107 disclosures provide a mandated source of information about financial instruments. SFAS 119 disclosures are not available at this writing. Footnotes appearing in 1992 annual reports reveal how firms deal with both the expanded content and the unstructured format of the new disclosures which extend the scope of financial reporting to unarticulated positions rather than just providing details of existing account balances.

The disclosures provide some details of these previously unreported instruments used extensively by financial companies to service customers and generate income and by both financial and nonfinancial companies to manage foreign currency exposure. The six banks which dominate U.S. markets held contract values of foreign exchange derivatives totaling

\$3.2 (\$4.2) trillion dollars. This is 4.2 (4.7) times total assets, at December 31, 1992 (1993). In contrast, multinational manufacturers in our sample held foreign exchange derivatives with contract value equal to 10.3% of their total assets at December 31, 1992.

Derivatives, if naked, increase the leverage and risk of the firm. The same level of derivatives, if covered, reduces the risk of the firm. Under present reporting, neither quantification of exposure nor consistent disclosure of firms' approach to risk management is provided. Moreover, interrelated transactions (the hedged transaction and the hedging instrument) appear separately in financial statements. Lack of quantification and failure to separate the hedge instrument from the hedged item make it difficult for the reader to measure the firm's exposure to exchange rate changes and determine to what extent FXD increase or decrease exposure.

The next section discusses the general nature of disclosures. The third section reviews extant and developing GAAP related to foreign exchange derivatives (FXD). The fourth section provides analysis of existing disclosures by firms in our sample. The final section presents our conclusions.

The Nature of Disclosures

GAAP-required footnote disclosures differ in the degree to which they are quantifiable and testable. A disclosure asserting a firm "never speculates" is different from one that asserts "the foreign currency position value at risk has not exceeded \$xxx at a 99% confidence level in 1993." The latter statement, in turn, is less quantified than one providing maximum, minimum, and average foreign currency values at risk at some confidence level for

a specific period.

GAAP-required footnote disclosures also differ in that they may or may not provide the constituents of a control account articulated into the income statement and balance sheet. An articulating footnote "deepens" an existing line item disclosure. By contrast, a footnote may "broaden" disclosure by introducing data points not constituents of an account articulated into the general ledger. Requiring a footnote that extends the architecture of financial reporting "off-balance sheet" (OBS), as the slang goes, means the standard cannot presume that firms already have the model and the experience for reporting such data. If the respondent is given *carte blanche*, open-ended responses may not be commensurable or even yield summary statistics. Footnote disclosures of derivative fair values have the undifferentiated alternatives of duplicating, adjusting or augmenting booked accruals of gains or losses.

A broadening type footnote containing information unarticulated to the financial statements cannot merely be a fishing expedition whose net benefit is a matter of chance, any more than scientific research can test without a model. A "disclosure" type SFAS differs methodologically from a Discussion Memorandum (DM) surveying the same issues. If a disclosure standard is to generate an inductive inference, then the design calls for respondents to answer the same questions and interpret them equivalently. The OBS disclosure of operating leases presents a successful analogy. The FASB hypothesis is that footnote disclosure of prospective uncapitalized, noncancellable commitments inhibits evasion of capitalization requirements and expands the empirical data for estimating leveraging risk. One purpose of our study is to determine what inferences can be drawn from the 1992 data

on FXD. Our survey leads us to conclude that the lack of clearly specified quantification of market risk has led to disclosures of limited benefit to investors.

FXD THEORY AND PRACTICE

Off-balance-sheet risk exists when a possible loss is not reflected on the balance sheet because a derivative contract is not allowed as an asset or liability. Since open foreign currency contracts are executory in nature, they are not booked (i.e., no asset or liability is recorded) and the notional or contract amount is not articulated on the balance sheet. Exposed derivatives may increase OBS risk whereas hedging derivatives decrease risk. Therefore, deciding whether FXD expose or cover risk is of substantial concern to investors and regulators. Accelerating use of FXD by financial institutions particularly, and by nonfinancial entities also, is a major motivation for the FASB undertaking their financial instruments projects.

SFAS 105 (FASB 1990) was the initial response to calls for expanded disclosure under the FASB's financial instruments project. It "applies to all financial instruments with off-balance-sheet risk of accounting loss and all financial instruments with concentrations of credit risk except those specifically excluded" Disclosures required by SFAS 105 consists of the following information about financial instruments with risk of accounting loss: (a) the face or contract amount (or notional principal amount), and (b) the nature and terms, including a discussion of (1) the credit and market risk of those instruments, (2) the cash requirements of those instruments, and (3) the related accounting policy. If the financial instrument has off-balance-sheet credit risk, two additional disclosures are required, (1) the

potential loss due to nonperformance by the counterparty, and (2) information about collateral. SFAS 105 was issued in March 1990 and is effective for fiscal years ending after June 15, 1990. This study addresses only foreign currency contracts with OBS risk (FXD) and not other financial instruments addressed by SFAS 105. Foreign exchange exposure for nonfinancial firms is generally managed at the transaction or account level. Therefore, corporate objectives are more easily defined and it is more feasible for firms to monitor usage of foreign exchange contracts as compared to interest rate contracts. FXD are usually "plain vanilla" forwards, options, or currency swaps in comparison to complex interest rate contracts. The use of interest rate contracts is analogous to capital structure decisions and is therefore more difficult to define and to monitor.

SFAS 107 (FASB 1991) "requires disclosures about fair value for all financial instruments, whether recognized or not recognized in the statement of financial position, except for those specifically listed...." Similar to SFAS 105, items covered by other SFAS such as pensions, insurance contracts, warranty obligations, lease contracts and investments accounted for under the equity method are excluded from the disclosure requirements.

Fair value is quoted market value where available. Otherwise, it is management's best estimate using the quoted market price of similar financial instruments, present value of estimated cash flows, option pricing models, or other pricing models. The FASB chose the term *fair value* as opposed to *market value* to avoid any misunderstanding that the statement applies both to actively traded financial instruments where a clear market price does exist and to those where no active market exists. Where it is not possible or practical (e.g., too costly) to determine market value, available information to proxy for market value should be

disclosed (carrying amount, interest rate, and maturity). The FASB valuation definition is flexible in that neither spot nor forward rates are specified. SFAS 107 is effective for fiscal years ending after December 15, 1992. For entities with total assets less than \$150 million, the standard is effective for fiscal years ending after December 15, 1995.

In October 1994, the FASB issued *SFAS 119, Disclosure about Derivative Financial Instruments and Fair Value of Financial Instruments*, as a response to criticism of derivatives disclosure. It requires a distinction be made between derivatives held for trading purposes and those held for purposes "other than trading." The FASB explains that this distinction is not one between speculation and hedging, which is what everyone recommends in theory but no one has operationalized in practice. Segregating trading and nontrading instruments (risk management or asset-liability management(ALM)) is what banks already do as a matter of business practice and nonbanks may choose to ignore.

Additional disclosures required for derivatives held for trading purposes are average and end-of-period fair values, and gains and losses on trading activities disaggregated into categories consistent with how the business is managed. The FASB dropped a requirement from the related disclosure draft to disclose minimum and maximum fair values, and gains and losses from derivatives shown separately from other financial instruments. Additional disclosures required for derivative financial instruments held for purposes other than trading consists of (a) a description of the objectives for holding the derivatives, (b) a description of how each class of derivatives is reported in the financial statements, and (c) for derivatives held and accounted for as hedges of anticipated transactions "(1) a description of the anticipated transactions whose risks are hedged, including the period of time until the

anticipated transactions are expected to occur, (2) a description of the classes of derivatives used to hedge the anticipated transactions, (3) the amount of hedging gains and losses explicitly deferred, and (4) a description of the transactions or other events that result in the recognition in earnings of gains or losses deferred by hedge accounting." The disclosures required under (c) are an attempt to clarify the gray area between derivatives used to hedge anticipated transactions and to speculate.

Additional encouraged but not required disclosures include average fair values of other financial instruments or nonfinancial assets held for trading purposes, quantitative information about market risks of derivatives "that is consistent with the way in which the entity manages or adjusts those risks." Although this is the first time the FASB encouraged market risk disclosures, SFAS 119 requires neither quantification of exposure to market risk nor a discussion of management's controls on currency risk management. Dealer banks use value at risk for internal control, but typically have not reported it publicly. SFAS 119 is effective for fiscal years ending after December 15, 1994 (December 15, 1995 for entities with less than \$150 million in total assets).

Derivatives are subject to the same types of liquidity, market, credit and operational risks as other financial instruments (CITICORP 1994, 26). Market risk is the risk of loss due to unexpected changes in interest and exchange rates. Credit risk is the potential loss from counterparty nonperformance. Liquidity risk is related to market liquidity of instruments held and therefore, closely related to market risk. Operating risk is linked to inadequate controls that ensure following a properly defined corporate policy.

Whether companies are dealers or end-users, FXD manage and adjust market and

credit risks. Market risk on an exposed position can be eliminated (hedged) by FXD with the opposite exposure. In a pure sense, hedging is risk reduction without intent to profit. A speculative FXD, however, is one that does not hedge an identified exposure or perversely unhedges natural offsetting positions. A company's risk management policy determines the portfolio of exposures which they identify. For example, is every foreign-currency denominated receivable, payable, contractually committed future sale or purchase, and anticipated revenue or expenditure (for the next three months, one year, five years, etc.) identified as exposed to exchange rate changes? Or, is only some decentralized entity's net amount identifiable as exposed? Definition, measurement of market risk and determination of an acceptable level of exposure are complex issues about which treatment may differ by industry, geography, technical feasibility, and management policy.

FASB disclosure requirements address credit and market risks. Recent disclosures in the financial press (e.g., Procter & Gamble, Gibson Greeting's) suggest market risk is less understood and less controlled than credit risk but not necessarily less important. Long before 1994 revelations of derivative losses, the FASB issued the exposure draft *Disclosures about Financial Instruments* (1987). This proposal omitted notional and market values of derivative contracts and relied instead on quantification of cash flows and tableaux of position profiles over time. These numerical specifications at the enterprise level have been dropped from subsequent standards and proposals in favor of verbalized descriptions and nonstandardized views of historical data resulting in inconsistent content and formats.

Credit risk, which relates to the possibility of nonperformance by a counterparty, applies to FXD entered into by both dealers and end-users, and to those entered both for

hedging exposures and for speculating. The maximum potential accounting loss at a balance sheet date, SFAS 105's (FASB 1990) measure of credit risk, is the gross amount of contracts in a *gain* position (modified by losses that can be offset under a binding agreement). Credit risk, measured by observed gains on derivatives, is not a proxy measure of market risk, which is measured by potential, unobservable derivative *losses*. The FASB, regulators, and rating agencies set thresholds of credit risk because business practice deems it measurable and avoidable, whereas market risk is viewed as neither. Thus, outside regulators neither monitor nor restrict market risk-taking directly yet.

[Table 1]

The four cells of Table 1 relate to disclosure as follows. For credit risk (two bottom cells), SFAS 105 requires disclosure of the maximum potential accounting loss due to counterparty nonperformance and a discussion of the firm's credit controls. By contrast, FXD reduce net enterprise market risk exposure when other exposures are hedged (upper left cell). The major uncertainty, and therefore need for disclosure, is exposure to market risk of FXD held for speculation (upper right cell), whether intentional or not. The disclosure challenge is to distinguish between enterprise level exposures and hedges and then to measure the speculative value at risk. The FASB requires disclosure of FXD contractual amounts and fair values and a "discussion" of their market risk. The remainder of the paper shows that while the required disclosures are a step in the right direction, quantifying the exposure of unhedged derivatives to market risk is a necessary but missing component of FXD disclosure.

FXD DISCLOSURES

This study includes a descriptive analysis of the SFAS 105 and SFAS 107 disclosures of six large banks that dominate U.S. derivative markets and 98 large U.S. multinational manufacturing companies for fiscal years ending December 1992 through March 1993. To obtain a purposive sample of major FXD users, we selected (1) the 100 firms on Forbes' list of the largest U.S. Multinationals, (2) the firms on Fortune's list of the 50 largest U.S. exporters not included in Forbes' list, and (3) U.S. companies not yet included that are in the Standard & Poor 500 and classified as Banks, Chemicals, Computers, Electronic Components, Pharmaceuticals, and Oils. To focus the survey on large U.S. manufacturing multinationals, we excluded firms with ratios of foreign assets to total assets or foreign sales to total sales less than 10% (22 firms) and retailers (8 firms).

SFAS 105 and SFAS 107 disclosures by firms in our survey vary greatly in format and content. One area where companies showed inconsistency is in use of terminology. The primary example is the distinction between contract and fair value. Several companies used terminology treating contract values and fair values as equivalent (e.g., Intergraph, Cray). Contract (notional) value is the amount of currency to exchange at a defined time in the future. Fair value of a contract is determined by changes in exchange rates (and possibly by interest rates and other factors) applied to the notional base. Changes in a contract's fair value impacts income, if the contract is not construed as hedged. If there is no change in exchange rates since the inception of the contract, its fair value is within transactions costs of zero. Fair value disclosures are also frequently unclear about whether the amount is an asset or liability, a deficiency addressed in SFAS 119 (FASB 1994).

Dealer Banks

The total notional value of foreign exchange contracts of the six dominant U.S. banks is \$3.2 (\$4.2) trillion or 4.2 (4.7) times total assets at December 31, 1992 (1993). Foreign exchange trading income totaled \$2.7 (2.3) billion, which was 30.3% (17.4%) of pretax income in 1992 (1993). Table 2 summarizes reported FXD for 1992 and 1993 for comparison.

[Table 2]

Banks foreign exchange dealings are exposed to market (or price), liquidity, operational, and credit risks. Banks apply similar credit procedures to customers with whom they enter into forward contracts as with loan agreements. In terms of amount at risk in case of default, it is approximately equal to the unexpected change in the exchange rate since the contract was signed times the notional amount for all contracts in a gain position. The maximum exposure to credit loss reported by the six banks is \$80.4 (\$54.0) billion in 1992 (1993) or 2.5% (1.3%) of notional value and 10.5% (6.1%) of total assets. Nonfinancial companies entering into FXD generally do so with financial institutions, so that their credit risk is the risk of insolvency of the financial institution. The "too big to fail" rule may protect banks' customers, but not U.S. taxpayers.

Dealer banks, as well as end-users, failed in their 1993 disclosures to address vital issues surfacing in 1994 related to market risk and liquidity risk. Disclosures do not provide (a) amounts exposed to market risk, (b) the effect of FXD on exposure to market risk, and (c) any information, qualitative or quantitative, on liquidity risk.

CITICORP (10-Q for quarter ended June 30, 1994) provides the first reported

quantification of market risk.

Earnings at risk measures the potential impact on the nontrading portfolios of a specified movement in interest rates for a given period. The earnings at risk for each currency is calculated by multiplying the gap between interest sensitive items by the specified rate movement, and then taking into account the impact of options, both explicit and embedded. The specific rate movements are statistically derived from a two standard deviation rate movement...

...The price risk of the trading portfolios is measured using the potential loss amount method, which estimates the sensitivity of the value of the trading positions to changes in the various market factors, such as interest and foreign exchange rates, over the period necessary to close the position (generally one day). The method considers the probability of movements of these market factors (as derived from a two standard deviation movement), adjusted for correlation among them. (CITICORP 1994, 24)

Reported amounts calculated for market risk are small relative to credit risk.

Disclosed earnings at risk from changes in market rates for the *nontrading* portfolio ranges from a high of \$90 million to a low of \$10 million dollars in the first half of the year. This market risk range is from 4.24% to .47% of the first six months pretax income and .58% to .06% of stockholders' equity. The potential loss to the *trading* portfolio ranges from \$90 million to \$50 million (4.24% to 2.36% and .58% to .32%). CITICORP's maximum exposure to credit loss (i.e., gross unrealized gains net of netting agreement offsets) on FXD was \$32.0 billion or 205% of Stockholders' equity at June 30, 1994 (1509% of pretax income).

Industry practice is for banks to accrue unrealized gains and losses on foreign exchange contracts, interest rate swaps, and interest rate protection contracts, offset on a net basis through 1993. Beginning in 1994, FASB *Interpretation 39, Offsetting of Amounts Related to Certain Contracts* (FASB 1992), requires banks to report separately their unrealized gains as assets and unrealized losses as liabilities. Unrealized gains and losses on multiple contracts may continue to be shown on a net basis only when the contracts are

executed with the same counterparty and a legally enforceable master netting agreement is in place and where the intent to settle net exists. Federal Reserve and Group-of-30 (1993) surveys document banks are planning to substantially increase the use of master netting agreements. While application of FASB Interpretation 39 does not affect net income or net assets, it does increase total assets and liabilities. This disaggregation enables analysts to better discern the scale of hedging and speculation.

CITICORP's (1994) second quarter, 1994 10-Q provides insight into the effect of *Interpretation 39* on the balance sheet. At June 30, 1994 Trading Account Assets (\$52 Billion) and Total Assets (\$254 Billion) are \$30 billion higher than previously reported because gross unrealized gains of \$32 billion (asset) and gross unrealized losses of \$30 billion (liability) were separately reported. The result is to reduce the ratio of Stockholders Equity to Total Assets from 6.9% under previous GAAP to 6.1% under current GAAP. Similarly, the ratio of Net Income to Total Assets falls from .64% to .56%.

Since banks mark-to-market their *trading* portfolios of foreign exchange contracts, there are no reported differences between book value and fair value, except for their Asset Liability Management (ALM) *end-user* positions. The SFAS 105 disclosures provide new information on the open interest of OBS instruments. By the nature of their usage, bank foreign exchange contracts substantially offset, reduce the bank's exposure or "gap," and thus reduce the risk premium to recover from customers. Where end-user companies use foreign exchange contracts to hedge operating exposure however, SFAS 105 tabulations do not display their offset against foreign currency assets and liabilities on the balance sheet. The result is either of limited value or misleading.

End-User Manufacturing Companies

End-user firms in the manufacturing sector provide a rigorous test of FASB derivative disclosure standards in that these firms have limited experience with disclosures or footnotes related to foreign exchange risk. To develop a more relevant survey, we restrict the sample to companies which are multinational and therefore more likely to use FXD to manage risk. Identical to the SFAS 14 requirement for providing geographic disclosures, we define companies as multinational if foreign revenue is 10% or more of consolidated revenue or identifiable foreign assets are 10% or more of consolidated total assets. The sample analyzed in this section consists of 98 U.S. multinational manufacturing firms.

FXD disclosures are located in a variety of footnotes including one or more covering accounting policies, foreign exchange, debt, financial instruments, commitments, contingencies, and geographic disclosures. Footnotes are frequently not cross-referenced making it difficult to know if all FXD disclosures have been identified.

We tabulated currency swap agreements when they were identifiable separately from interest rate swaps. Johnson & Johnson's annual report, for example, did not include currency swaps with OBS activity. Instead, ECU and Swiss Franc notes payable were listed under *borrowings* with a note indicating "These debt issues were converted to fixed or floating rate U.S. dollar liabilities via interest rate and currency swaps." This contract interdependence highlights the need to link disaggregated disclosure of OBS instruments in order to understand exposures. (SFAS 119 addresses this concern.) Some companies describe separately the type of foreign exchange contract and others combine amounts for different types of contracts.

[Table 3]

Table 3 shows the incidence of revelation (Panel A) and descriptive statistics for notional (Panel B), Book (Panel C), and Fair (Panel D) values for FXD user firms in the sample. Since SFAS 107 requires fair value disclosures, we assume that no disclosure of book and fair values implies book approximates fair value for firms disclosing notional amounts of FXD.

Panel A of Table 3 shows that 82 of the 98 U.S. companies disclosed the notional value of FXD. Only twenty-nine companies disclosed notional, book and fair values separately. Forty-two companies disclosed only notional value. Frequently book and fair values were not disclosed. In summary, notional values are generally reported, but the reporting of book and fair values is inconsistent. However, three companies reported no notional value but did report fair and/or book values. Since SFAS 105 requires disclosure of notional amounts of FXD, these three companies do not appear to be in compliance with GAAP.

The mean (median) notional amount of FXD for users in our sample was \$1.54 (\$.57) billion dollars (Table 3, Panel B). The mean (median) ratio of notional value of FXD to total assets is .103 (.068) for the 82 manufacturing firms that report usage of FXD. Of those firms reporting type of FXD, about two-thirds use OTC forward contracts and one-fourth are swaps. Since some companies did not identify currency and interest rate swap amounts separately, the incidence of FX swaps and total FXD is understated. This survey confirms that although FXD usage is frequently substantial, it is not systematically material across manufacturers.

Panels C and D of Table 3 show approximately 3% of the notional or contract amounts of FXD are reported on the balance sheet and replacement cost or fair value of FXD is 4% of the contract amount. Because of inconsistencies in reporting, only approximately one-third of sample firms report enough information to calculate these ratios. Whether these are debits (credit risk), credits, both, or net is rarely clear. Manufacturing firms generally do not report separate credit risk amounts as banks do. Some manufacturing firms do however, indicate risk of credit loss is remote since counterparties are large credit-worthy financial institutions.

The FASB's hypothesis that FXD credit risk is a major concern for users and therefore should be a major disclosure component is perhaps misguided because amounts at risk are small (for the manufacturing firms) and the counterparties are credit-worthy. If compliance costs are constrained, why should the FASB waste resources by requiring extensive disclosures of credit risk, when market risk and liquidity risk are the perils to end-user firms? Our conclusion is that dealer banks complied fully with SFAS 105 and SFAS 107 and could have provided a model for manufacturing firms whose compliance was spotty.

Appendix B of SFAS 105 provides an example of inconsistent financial reporting treatment by presenting a concept of credit risk contrary to bank practice, regulations, and the predecessor FASB ED. Setting aside any questions as to how "credit risk" is actually measured, the table on pages 22-23 of SFAS 105 shows no OBS credit risk for swaps and forwards, yet shows market risk for all derivatives. By contrast, banks report credit risk for all over-the-counter derivatives, except options. Recall that Interpretation 39 generally requires gross, not net, unrealized gains and losses be reported on the balance sheet and thus

unrealized gains (FASB's measure of maximum credit loss) are now on the balance sheet.

Thus, it is not until Interpretation 39 that financial reporting is consistent with the appendix to SFAS 105.

Liquidity risk, in the sense of market failure, is perhaps the greatest problem of all in reporting the fair value of derivative positions. While the ED preceding SFAS 105 identifies liquidity risk using a cashflow definition, SFAS 105 drops it from the appendix entirely. The market in 1994 however, has demonstrated that only plain vanilla derivatives can be resold without significant cost when the market begins to inflict losses. In summary, it appears the FASB hypothesizes that a measure of usage (i.e., notional amount) serves as a metric for market risk.

Appendix A to the ED preceding SFAS 107 enumerates prior FASB, AICPA and SEC precedents requiring disclosure of "fair value." Such an appendix of precedents is essential to any research process and reveals a persistent characteristic of FASB standard setting although the entire reference appendix is ultimately omitted in SFAS 107. Bank regulation and international precedents are persistently omitted from accounting standards. For example, the 1994 ED for a standard revising SFAS 105 and SFAS 107 does not refer to bank regulatory precedent (e.g. the Federal Deposit Insurance Corporation (FDIC) Call Report, Schedule RC-L, Off Balance Sheet Items, FFIEC 031, 032, 033, and 034, and Item no. 12, which defines determination of notional amounts of forward contracts for reporting purposes). This level of guidance is also omitted from FASB or EITF publications. Because of omitted relevant regulatory accounting principles (RAP), the FASB gives less guidance to itself and to "nonbanks," who need help the most, if only by analogy.

DISCLOSURE OF HEDGING POLICIES

Belk and Glaum (1990) provide evidence that balance sheet exposure is managed primarily by adjusting the currencies of lending and borrowing (i.e., hedging with "primitives") and that exposure on future purchases and sales transactions is primarily managed by hedging with derivatives (FXD). The implication for the present study is to remind us that FXD are likely to be a significant, but not necessarily the primary FX hedging and positioning strategy. To determine if positions are exposed or not, a firm would have to summarize balance sheet positions, off-balance-sheet positions (i.e., firm commitments), and anticipated transactions (i.e., operating transactions or exposure) before reporting complementary derivative positions.

SFAS 105 requires a discussion of the market risk of financial instruments with OBS risk of accounting loss. In response to this requirement, most firms briefly summarize how FXD are used to hedge foreign exchange risk. Table 4 summarizes these disclosures. There are 55 references to hedges of balance sheet exposures (41 balance sheet items plus 14 net investments in international operations). There are 23 indications of hedging commitments and 28 indications of hedging anticipated transactions, i.e., operating exposure. Our results are consistent with Rodriguez (1981) in that companies do not appear to be speculating, perhaps because of asymmetric rewards associated with negative derivatives performance. We classified a policy as one of hedging if a company used any wording implying such. Three companies clearly indicate that they do not speculate as a matter of policy.

[Table 4]

It is likely that companies take an active currency position in anticipation of rate changes and view this as hedging anticipated transactions. For example, Coca Cola "engages in hedging to enhance income and cash flows denominated in foreign currencies" and Halliburton enters into FXD "in its selective hedging of its exposure." This suggests that differences between selectively hedging future transactions and speculation, or "taking a view," may be in the eye of the beholder. The FASB, in SFAS 119, gives up on robust criteria for hedging and settles for euphemisms like "end-user risk management" or "nontrading activities."

Some companies disclose the maturity and currency of derivatives. Thirty-eight companies disclosed maximum maturities of open forwards. Seventeen reported maturities of less than one year. Twelve reported forwards maturing in one year. Nine reported maturities of greater than one year, with the latest maturity being 13 years. Multiple long-term forwards which hedge debt are equivalent to swaps designed for the same purpose.

Seven companies disclosed the maturities of currency options. Five matured within one year, the other two reported maximum maturities of 15 and 36 months. SFAS 119 encourages, but does not require, "gap" analysis for interest rate positions by duration and illustrates a format for a financial entity to report exposure by repricing intervals.

Information was provided on the currency of FXD by 19 companies. However, the level of detail varies from a description that FXD are "primarily European" to specification of amounts of currencies purchased or sold forward and amounts of currency for buy or sell options. Except for debt instruments, in no cases were the amounts of foreign currency exposed assets or liabilities identified. SFAS 119 illustrates an "encouraged" format that

provides limited information on currency-specific exposures.

The Group of Thirty (1993) estimates that from 1985 to 1989, the volume of international new issues that were swap-driven increased steadily, reaching 70% of international U.S. dollar new issue volume and 53% of total international new issue volume. Major borrowers monitor funding opportunities regularly by evaluating the relative pricing for new issues and swaps across markets worldwide. Commonly, currency swap agreements effectively establish U.S. dollar-denominated principal and interest obligations over the terms of foreign currency denominated debt. Swaps are entered simultaneously with debt transactions and are integral to the debt transaction. Reporting debt and swaps separately, as is done by many companies, confuses the investor as to the substance of debt transactions. One example of showing the economic substance of transactions, and not just legal form, is Procter & Gamble's long-term-debt summary table that describes each major issuance of debt with a description of the related swap in parentheses and the effective borrowing amount, currency, and interest rate. However, Procter & Gamble did not reveal the *market risk* of their derivative activities in 1992 or 1993 only to have that risk emerge in 1994 as a significant loss and negative publicity.

One argument against requiring quantitative market-risk disclosures such as reported by CITICORP (1994), is that some companies do not have the capacity to produce such information (SFAS 119, ¶72). Conventional business wisdom however, is not to sign contracts when management does not understand the risks involved. "Plain vanilla" derivatives, simple forwards, swaps, and options are relatively easy to value. If management chooses to enter complex derivative transactions, then it is incumbent upon them to acquire

the expertise and technology to undertake a sensitivity analysis of changes in value in response to changes in interest and exchange rates. The complaint filed in Gibson Greetings (GG) Vs. Bankers Trust (BT), et al. (1994) presents a clear admission of a company entering into transactions without adequately understanding the attendant risks. Allegedly, BT, as adviser and banker, sold GG complex derivatives and GG had "no capacity independently to evaluate the benefits or risks involved in derivative transactions or to value the transactions themselves." In short, at the time the complaint was filed GG had lost \$23 million and GG's liability was "potentially without limit, a situation which threatened the survival of the Company" (§ 27).

CITICORP provides a quantification of market risk previously only described verbally and abstractly. The dollar numbers are remarkable because market risk is reported by the industry leader to be of low magnitude, especially compared to the credit risk numbers. However, there is a counterparty to each of CITICORP's positions, who may not be so consistently hedged or diversified. Interest rate and FX databases and software are available to facilitate quantification of exposure to market risk. (For example see an article regarding J.P.Morgan & Co. in the October 11, 1994 *Wall Street Journal*.) Since the need for quantification of market risk exposure has been identified and the technology exists for calculation, perhaps the time has come for the FASB or the SEC to require its disclosure.

CONCLUSIONS

Three factors likely reduce the willingness of management to support requirements for disclosure of exposure to currency risk and the effect of FXD on this exposure. First, is

concern that disclosures may convey strategic information to competitors. Second, and perhaps more specious, specific information on the use of derivatives increases management exposure to shareholder lawsuits alleging misuse of corporate resources. For example, shareholders sued Procter & Gamble following their disclosure of \$102 million losses on interest rate swaps in the first quarter of 1994. Third, disclosures impose a level of costs which are not always commensurate with their materiality to nonfinancial entities.

Quantitative disclosures consist primarily of notional principal amounts of FXD outstanding at year-end. The Group of Thirty (1993) suggests that notional principal amounts of FXD measure activity level but do not measure risk exposure (either credit or market risk) for three main reasons. First, notional principal outstanding fails to account for offsetting exposures. Second, transactions of various maturities are simply added without accounting for the differing sensitivities of the values of the contracts to changes in the value of the underlying (e.g., the exchange rate risk of a one year option is not equal to that of a ten-year swap despite SFAS 105 treating the notional principal amounts the same). Finally, different types of derivatives (e.g., options versus swaps) have substantially different risk profiles.

SFAS 119 (FASB 1994) provides clarification and expansion of qualitative disclosures on derivatives and new quantitative information on average fair values of derivatives held for trading purposes. Other quantitative disclosures are either optional or have been withdrawn. A major concern to investors is quantifying market risk which has yet to be directly addressed. The result is that empirical research potential is limited and aggregation of derivative disclosures to test cross-sectional and time series variation for policy inferences is delayed.

Large corporate losses reported in 1994 (e.g., Procter & Gamble and Gibson Greeting's, *Derivatives Strategy* 1994) resulted from rapid market movements (market risk) and from management not properly controlling exposure to market risk (i.e., operating risk) of complex derivative contracts in which they had entered. The analysis of our survey, leads to several conclusions. First, all major dealers and some users report the quantified credit risk information required by the FASB. Considering the lack of reported problems to date and the magnitudes disclosed by manufacturers, credit risk does not appear to be a primary disclosure issue. Second, market risk disclosure is deficient because of inadequate quantification of some measure of value-at-risk in view of the reporting of large derivatives losses. Third, revelations by some managements that they were unaware of and were not controlling risks involved in derivative contracts undertaken (see the press release of Procter & Gamble and the law suit of Gibson Greetings against Bankers Trust) suggest operating risk is an area of concern. Arguably, operating risk relates to corporate controls and therefore is not directly within the FASB 's jurisdiction. However, requiring quantification of market risk (as well as credit risk) would encourage greater consideration of value at risk in decision making, thus reducing operating risk and providing useful information to investors and management.

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Table 1
Summary of Exposure to Risks
From Foreign Exchange Derivatives (FXD)

Type of Risk	Is there exposure to the indicated risk for FXD used to:	
	Hedge	Speculate
Market Risk ⁺	No*	Yes***
Credit Risk ⁺⁺	Yes**	Yes**

⁺Market risk refers to the risk of loss of market price from unexpected changes in exchange or interest rates.

⁺⁺Credit risk is the potential loss resulting from counter-party non-performance.

*Net effect of hedge instrument and exposed position that is being hedged.

**From an historical cost perspective, there is credit risk exposure for unrealized gains on the FXD. If there is an unrealized loss, only the firm's counter-party is exposed to credit loss. Exceptions are futures and written options. Gains and losses on futures contracts traded on exchanges are settled in cash daily. Therefore, credit risk is minimal. The counterparty to a written option (i.e., the purchaser) has no performance obligations under the option.

***From an historical cost perspective, the maximum possible loss on purchased options are the premiums paid for the options.

Table 2
Summary of Foreign Exchange Derivative Disclosures: Six Major Dealer Banks

	1993		1992		Percent Change 1993/1992
	\$ million	% total assets	\$ million	% total assets	
Notional principal amount					
FX forwards, spots, futures	\$3,277,512	371.8 %	\$2,639,892	344.9 %	+24.2%
FX swaps	\$233,712	26.5 %	\$244,553	31.9 %	- 4.4 %
FX options	\$672,716	76.3 %	\$345,748	45.2 %	+ 94.6 %
Total FXD	\$4,183,940	474.7 %	\$3,230,193	422.1 %	+ 29.5 %
Total assets on balance sheet	\$881,468	100.0 %	\$765,313	100.0 %	+ 15.2 %
Maximum Exposure to Credit loss for FXD (Unrealized exchange gains)	\$53,998	6.1%	\$80,357	10.5%	-32.8%
% of Stockholders' equity	85.6%		149.1%		
% of notional prin. amount	1.3%		2.5%		
FX Trading Income	\$2,330	0.3%	\$2,701	0.4%	-13.7%
% of Income before taxes	17.4%		30.3%		

Includes Citicorp, J.P.Morgan, Chemical Bank, Bankers Trust, Chase Manhattan, and BankAmerica.

Table 3- Summary of FXD Disclosures
Panel A: Number of U.S. Manufacturing Firms in Sample Reporting
Notional Values (NV), Book Values (BV), and Fair Values (FV)

Number of Companies in Sample	Number of Companies Reporting Amounts							
	NV,BV,FV	NV, FV, Only	NV, BV Only	FV, BV Only	NV Only	FV Only	BV Only	No Disclosure
98	29	11	0	2	42	1	0	13
100%	30%	11%	0%	2%	43%	1%	0%	13%

Panel B: Notional Amount of Disclosed FXD

Category of FXD - % of Total Sample of 98	No. of Companies Reporting \$ Amounts	Notional Amount (\$000,000)		Ratio of Notional Value to Total Assets			
		Mean	Median	Mean	Median	Min	Max
Forwards - 65%	64	\$1261	\$340	.077	.048	0	.636
Swaps - 26%	26	\$351	\$161	.035	.011	.004	.120
Options - 12%	12	\$508	\$234	.038	.022	0	.137
Not disclosed separately - 21%	21	\$1497	\$701	.104	.072	.011	.443
Total Users - 84%	82	\$1554	\$569	.103	.068	0	.636

Out of the total sample of 98 U.S. companies 82 reported using FXD. FXD are foreign currency financial instruments with off-balance-sheet risk of accounting loss. NV, BV, and FV are notional, book and fair values, respectively.

Table 3, Panel C: Book Value of Disclosed FXD						
Category	Book Values of Reported FXD(\$000,000)			Ratio of Book to Notional Values		
	No. Reporting	Mean Amount	Median	No. Reporting	Mean Amount	Median
Forwards	16	\$37	\$4	12	.062	.008
Swaps	3	\$64	\$11	0	-	-
Options	4	\$30	\$38	0	-	-
Not Separated	8	\$32	\$6	6	.025	.009
Total	31	\$38	\$4	27	.029	.006

Panel D: Fair Value of Disclosed FXD						
Category	Fair Values of Reported FXD (\$000,000)			Ratio of Fair to Notional Values		
	No. Reporting	Mean Amount	Median	No. Reporting	Mean Amount	Median
Forwards	25	\$32	\$6	21	.108	\$.009
Swaps	6	\$35	\$6	0	-	-
Options	5	\$22	\$23	0	-	-
Not Separated	11	\$66	\$21	9	.043	\$.027
Total Reporting	43	\$43	\$8	38	.041	\$.018

Panels C and D present summary statistics on companies that disclosed both notional and book (C) or fair (D) values for the indicated category. Some companies reported different levels of detail of notional and fair values or amounts in non-matching categories. Therefore, Total Reporting the Ratio of Book (Fair) to Notional Values, 27 (38) companies exceeds the sum of the number of companies reporting individual ratio categories, 12+6 or 18 (21+9 or 30). Two companies reported \$0 for notional, book, and fair values. These two companies are considered as reporting amounts but are not included in the ratio statistics.

Table 4
Summary of Manufacturing Companies' Policy Statements on
Exposure to Currency Exchange-Rate Changes

Reported Description of What is Hedged (Alternative wording interpreted as equivalent)	No. of References
Balance Sheet Exposure	
Assets- Receivables	3
Inventories	2
Assets	1
Foreign currency investments (Foreign currency denominated securities)	3
Liabilities- Payables	1
Short term borrowings	1
Long term debt (Foreign currency bonds and warrants)	1
Liabilities (Debts)	9
To provide local currency debt to subs	1
Balance Sht- Net monetary assets (Receivables and payables, Receivables, payables and other commitments, Monetary assets and liabilities)	11
Balance Sheet (Assets and liabilities)	<u>8</u>
Total policy references to balance sheet items	
	41
Net investments in international operations	
	<u>14</u>
Total Balance Sheet	
	55

Table 4 (Continued) Summary of Manufacturing Companies' Policy Statements on Exposure to Currency Exchange-Rate Changes	
Reported Description of What is Hedged (Alternative wording interpreted as equivalent)	No. of References
Transactions with firm commitments:	
Firm commitments (Commitments)	15
Sales commitments (Export sales)	1
Inventory purchase commitments with specific supplier	1
Capital expenditures (Commitments for Property, Plant and Equipment)	1
Interco transactions (Interco payables and receivables)	2
Interco dividends and royalties (Dividends from sub)	2
Sale of German sub	1
Total commitments	23
"Does not hedge non-transaction exposure"	1
Total Balance Sheet (from page 1)	<u>55</u>
Total Accounting Exposure	79
Anticipated transactions (i.e., Operating exposure):	
Revenues (Anticipated sales commitments, probable anticipated sales, anticipated interco sales, future export commitments, future exports)	5
Expected inventory purchases	1
Income and cash flows (Transactions, anticipated transactions, cash flow transactions, operating activities, economic exposure, operational exposure, currency fluctuations on operations, operating income, sales and purchases)	<u>22</u>
Total anticipated transactions (i.e., Operating exposure)	28
General comments to reduce exposure with no specific comment:	<u>17</u>
Total References to Hedging Exposure	124
No statement on policy:	17
Specific statement indicating no speculation:	3
Reported statement indicating speculation:	1
Total References plus companies with no references	<u>145</u>

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