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Diverse Types of Foreign Exchange Exposure and Hedging Techniques of Multinational Enterprises: A Survey Revisited

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Abstract:

Purpose: *This study examines the fundamental concepts underlying the three major types of foreign exchange exposure faced by multinational enterprises. It explains the nature of each exposure type and outlines the management techniques available to address them. Particular emphasis is placed on identifying effective hedging strategies as well as circumstances in which hedging may be unnecessary or inappropriate. In addition, the study reviews prior empirical research on corporate responses to foreign exchange exposure and synthesizes the key findings.*

Design/Methodology/Approach: *Translation exposure refers to the impact of exchange rate fluctuations on a firm's consolidated financial statements. Transaction exposure measures the effect of exchange rate changes on contractual cash flows arising from assets or liabilities that are denominated in foreign currencies and will be settled in the future. Operating exposure, also known as economic exposure, captures the impact of unexpected exchange rate movements on a firm's expected future cash flows.*

Findings: *This study surveys the existing literature on translation, transaction, and operating exposure, discusses the hedging techniques most recommended for managing each type, and identifies conditions under which hedging methods are appropriate or inappropriate.*

Practical Implications: *Foreign exchange exposure reflects the degree to which a firm's profitability, net cash flows, and market value are sensitive to exchange rate movements. Effective measurement and management of this exposure are therefore essential for financial managers seeking to protect and enhance firm performance.*

Originality/Value: *The study provides an integrated review of the three primary channels through which exchange rate movements affect firms—translation exposure, transaction exposure, and operating exposure—and offers a structured framework for understanding their management.*

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1. Introduction

1.1 Translation Exposure

Translation exposure—also referred to as accounting exposure—arises from the requirement to consolidate global operations under established accounting standards. Consolidation must comply with rules set by authorities such as GAAP, the Financial Accounting Standards Board (FASB), or the parent company's governing bodies. Revenues, expenses, assets, liabilities, and equity originally recorded in foreign currencies must be translated into the parent company's reporting currency.

Translation gains or losses are governed by accounting regulations. In some cases, they may be recorded directly in shareholders' equity through a reserve account. In other cases, such gains or losses may be included in the parent company's income statement as additions to or deductions from net income.

Several translation methods exist, but U.S. multinational corporations primarily use two approaches: the current rate method and the monetary/nonmonetary (temporal) method.

1.2 The Current Rate Method

The current rate method is widely used worldwide, including in Africa, Asia, Europe, Latin America, and the United States. Under FASB Statement No. 52, U.S. firms translate assets and liabilities at the current exchange rate prevailing on the balance sheet date. Income statement items, including cost of goods sold and depreciation, are translated either at a weighted average exchange rate for the period or at the actual rate in effect when the transactions occurred. Equity accounts, such as paid-in capital and common stock, are translated at historical exchange rates.

Under this method, translation gains and losses do not affect net income. Instead, they are accumulated in a separate Cumulative Translation Adjustment (CTA) account. If the foreign subsidiary generating these gains or losses is later sold or liquidated, the CTA balance is closed and recognized as part of the gain or loss on disposal, thereby affecting net income in that period.

2. The Monetary/Nonmonetary (Temporal) Method

The monetary/nonmonetary approach was defined in the United States under FASB Statement No. 8 in 1975, although it was later replaced by FASB Statement No. 52 due to substantial controversy. Under this method, monetary assets (such as cash and receivables) and monetary liabilities (such as current liabilities and long-term debt) are translated at current exchange rates. Nonmonetary items—such as fixed assets and inventory—are translated at historical exchange rates.

Income statement items are generally translated at an average exchange rate for the period. However, expenses directly related to non-monetary assets or liabilities, such as depreciation and cost of goods sold, must be translated at historical rates. Any imbalance resulting from translation is recognized as a gain or loss in the income statement.

There are several ways to manage translation exposure. However, since accounting exposure does not generate actual cash flow losses, hedging techniques that involve cash flows may themselves induce cash flow losses. As will be shown, such hedging strategies may not be optimal for the firm.

Techniques commonly discussed for addressing accounting exposure include:

- Acceleration or deceleration of payments
- Diversification of sourcing, production, and marketing
- Diversification of financing
- Currency swaps
- Balance sheet hedging
- Forward and futures hedging
- Money market hedging
- Options

Acceleration or deceleration of receipts and payments—collecting weaker currencies more quickly and paying stronger currencies more slowly—requires accurate exchange rate forecasting and therefore involves speculation. This strategy may backfire and result in cash flow losses.

Diversifying production, sourcing, and marketing is costly and may easily exceed the benefits it provides. Nonetheless, it may be an appropriate hedging technique for translation exposure. Diversification of financing can also help mitigate translation exposure, although its implementation is often complex.

Currency swaps are generally ineffective for managing translation exposure. Balance sheet hedging involves matching exposed foreign currency assets and liabilities so that net translation exposure equals zero. Under this approach, changes in exchange rates affect assets and liabilities equally but in opposite directions.

It is important to note that translation exposure is measured by currency, not by individual affiliates. Therefore, equality of exposed assets and liabilities is required on a worldwide basis rather than separately for each foreign affiliate.

Balance sheet hedging represents a compromise in which balance sheet denominations are altered—often at the expense of operating efficiency—to achieve foreign exchange protection. Such changes can have significant repercussions, particularly if cash balances are substantially affected, potentially leading to illiquidity or financial distress.

Moreover, equating assets and liabilities effectively eliminates equity under the current rate method, which is both impractical and conceptually unsound. Consequently, balance sheet hedging is feasible only under the temporal method and is inappropriate under the current rate method.

Other so-called "hedging" techniques—such as forwards, money market instruments, and options—have direct cash flow implications. In the absence of offsetting cash flows, their use for translation exposure is essentially speculative rather than hedging.

For example, when using a forward contract to hedge translation exposure, a firm sells the exposed currency forward, purchases the currency later in the spot market, and delivers it to meet the forward obligation. This strategy only offsets translation losses if future spot rates are forecast correctly. Any forecast error results in unexpected gains or losses.

Additionally, profits on forward contracts are taxable, whereas translation losses are not tax-deductible. Consequently, firms may prefer to execute forward contracts through affiliates located in low-tax jurisdictions. Nevertheless, attempting to hedge translation exposure through forwards remains conceptually unsound.

Money market hedges operate similarly by borrowing foreign currency, converting it into domestic currency, and investing the proceeds. To be effective, the maturity and amount of the loan must exactly match the translation exposure. If the domestic currency depreciates, cash flow losses will result.

Options have similar implications, with the difference that favorable exchange rate movements eliminate the need for exercise. In this case, the cost is limited to the option premium.

Due to these issues, many firms choose not to hedge translation exposure, particularly following the adoption of the current rate method. Evidence suggests that firms using the temporal method hedge more frequently than those using the current rate method. As discussed, hedging non-cash-flow exposure may introduce unnecessary cash flow risk.

3. Transaction Exposure

Transaction exposure refers to gains or losses arising from the settlement of transactions denominated in foreign currencies. It typically involves a short time horizon, usually less than one year.

Such transactions include borrowing or lending in foreign currencies, acquiring assets or incurring liabilities denominated in foreign currencies, purchasing or selling goods and services on credit at foreign currency prices, or entering into unperformed forward foreign exchange contracts.

A key difference between transaction exposure and translation exposure is that translation exposure is measured solely by currency and from the parent company's perspective, whereas transaction exposure is measured by both currency and individual affiliates.

For example, if a multinational firm has a foreign currency receivable or payable and expects a specific exchange rate on the settlement date, transaction exposure arises from the risk that the actual exchange rate will differ from expectations.

Transaction exposure generally arises from accounts receivable, other monetary receivables, and monetary debt. In addition, four off-balance-sheet items create transaction exposure:

Unfilled customer orders at fixed foreign currency prices: These represent unrecorded receivables that fix the amount of foreign currency to be received in the future.

Purchase commitments at fixed foreign currency prices: Obligations to purchase inputs or assets denominated in foreign currencies.

Contracts to buy foreign exchange forward: These create exposure similar to accounts receivable.

Contracts to sell foreign exchange forward: These create exposure similar to accounts payable.

The techniques for managing transaction exposure are similar to those discussed earlier. Acceleration and deceleration of receipts and payments can be effective but may be constrained by legal restrictions in certain countries. Diversification of production, sourcing, marketing, and especially financing can also help mitigate transaction exposure.

However, these methods are often costly and indirect. Diversification of financing is generally the most practical among them.

The three most used methods to hedge transaction exposure are forward market hedging, money market hedging, and options market hedging.

A forward hedge is established when the transaction exposure arises and is considered "covered" when the future receivable or payable offsets the forward contract. This eliminates exchange rate risk for the transaction.

A money market hedge involves borrowing in one currency and converting the proceeds into another. The funds to repay the loan may come from operational cash flows, making the hedge "covered." The cost of a money market hedge depends on interest rate differentials, whereas the cost of a forward hedge depends on the forward rate.

Options for hedging allow firms to limit downside risk while retaining upside potential. Although options may have higher upfront costs, they provide flexibility. If a bid is rejected, losses are limited to the option premium.

Foreign currency options are particularly useful when transactions are contingent, such as in competitive bidding situations. In such cases, options represent the optimal hedge, whereas forwards and money market hedges are speculative.

Because transaction exposure can generate actual cash flow losses, firms generally hedge it. Empirical evidence indicates that most companies actively manage transaction exposure.

4. Operating Exposure

Operating exposure refers to the possibility that the present value of a firm's expected future cash flow will change due to unexpected exchange rate movements. These changes may be positive or negative.

Operating exposure depends on the impact of exchange rate changes on sales volumes, prices, and costs over time. From a long-term perspective, operating exposure is far more significant than translation or transaction exposure. However, its measurement is highly subjective because it requires estimating future cash flows over an uncertain horizon.

Operating exposure is economic rather than accounting-based and involves strategic decisions across sourcing, production, marketing, and finance.

Expected exchange rate changes are excluded from the definition of operating exposure because they are already incorporated into firm valuations by investors and management. Only unexpected changes affect firm value.

In efficient foreign exchange markets, expected changes are reflected in market prices. However, inefficiencies may exist in developing economies, where capital markets are less developed.

Unexpected exchange rate changes affect cash flows at four levels: short run, medium run (equilibrium), medium run (disequilibrium), and long run.

The short run typically corresponds to a firm's one-year operating cycle. Cash flow impacts depend on the currency denomination of existing commitments, which cannot be altered in the short term.

In the medium run under equilibrium conditions, firms can adjust prices and costs, resulting in zero operating exposure. Under disequilibrium conditions, such adjustments may not be feasible, leading to unexpected cash flow changes and shifts in firm value.

In the long run, cash flows are influenced by competitive responses across global markets. Firms exposed to international competition will experience operating exposure whenever exchange rates deviate from equilibrium.

Managing operating exposure requires anticipating and responding to exchange rate disequilibria. This is achieved through international diversification of financing and operations.

Diversifying financing involves sourcing funds across multiple currencies and capital markets. Diversifying operations allows firms to shift production, sourcing, and marketing in response to changes in relative costs and competitiveness.

Such diversification reduces cash flow variability, as gains in some markets offset losses in others. However, these strategies are expensive and typically feasible only for large multinational firms.

Contractual hedges are ineffective for long-term operating exposure, although they may provide short-term relief. Evidence suggests that firms partially hedge operating exposure using financial instruments.

5. Conclusion

This study surveys the principles of translation, transaction, and operating foreign exchange exposure and reviews empirical evidence on their management. Several conclusions emerge:

Many firms do not hedge foreign exchange exposure, particularly translation exposure, consistent with the view that hedging may increase risk rather than reduce it.

Firms hedge transaction exposure more frequently than translation exposure.

Evidence suggests that firms better understand transaction exposure than translation exposure and hedging of translation exposure has declined following the adoption of FASB Statement No. 52.

The most widely used hedging techniques are forward contracts and currency options. However, the use of forwards to hedge translation exposure represents speculation rather than true hedging.

These findings are broadly consistent with prior studies showing that forward foreign exchange contracts are the most used instruments for managing foreign exchange risk.

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