

**Foreign-Exchange Exposure
(FXX)**

- The sensitivity of the value of a firm's assets, liabilities and cash flows to future changes in currency rates

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Foreign-Exchange Exposure (2)

- FX exposure is a necessary evil of engaging in international business.
- It can seldom be avoided.
- However, it can sometimes be *hedged* or otherwise managed.
- And, it can lead to gains as well as losses.

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Foreign-Exchange Exposure (3)

- *Exposed* liabilities are subtracted from *exposed* assets to yield either:
- *Net asset exposure* (NAE) (or)
- *Net liability exposure* (NLE)

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Foreign-Exchange Exposure (4)

- Exposure is *not* the amount of the possible loss or gain.

- It is how the NAE or NLE would be affected by the *percentage* change in the exchange rate or how the firm's future activities will be affected.

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Foreign-Exchange Exposure (5)

- It is the *net amount* of money which is subject to possible risk of loss (or gain) as a result of change in a currency's value.

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Foreign-Exchange Exposure (6)

- There three types of foreign-currency exposure:
 - *Economic exposure*

 - *Transaction exposure*

 - *Translation exposure*

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Economic Exposure

- The sensitivity of the firm's *future* operating cash flows (and, therefore, its profitability) to *unanticipated* future currency-value changes

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Transaction Exposure

- The sensitivity of *existing commitments* to currency-value changes
- Examples:
 - Receivables and payables,
 - Investments and loans
 - Bids and contracts

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Translation Exposure

- The sensitivity of *consolidated financial statements* to currency-value changes
- Based upon *existing* balance sheets and income statements of foreign *branches or subsidiaries*

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Some FXX is *Favorable*

Companies often benefit from FX exposure, for example the impact of a *devaluation* upon:

- *Debt* denominated in an FC [transaction exposure]
- An exporter's *future sales abroad* [economic exposure]

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Some FXX is *Unfavorable*

Companies often are hurt by from FX exposure, for example the impact of a *devaluation* upon:

- An account *receivable* denominated in an FC [transaction exposure]
- An exporter's *future expenses* [economic exposure]
- A company with a *foreign subsidiary* [translation exposure]

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Favorable or Unfavorable?

In a similar fashion, an appreciation or revaluation of a currency can be either beneficial or harmful.

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Realized Gains & Losses

- Some gains or losses from FX fluctuations will be *realized* in the foreseeable future --they will cause *real* financial gains or losses.
- Examples:
 - Transaction exposure
 - Economic exposure

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Realized FXX Gains & Losses

- Such realized FX gains are *taxable* and FX losses are *tax deductible*.
- Realized *transaction-exposure* effects occur quickly.
- Realized *economic-exposure* effects occur over many years.

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Unrealized Gains & Losses

- Some gains or losses from FX fluctuations are *unrealized*.
 - They are only "paper" results which do *not* cause real gains or losses.
- Example: translation exposure
- They generally have no tax effects.

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Transaction Exposure

- The sensitivity of *currently-existing commitments* to currency-value changes
- *Only* involves currently-existing commitments of the company.

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Transaction Exposure

Can affect:

- Parent company
- Each *foreign affiliate*

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Transaction Exposure

- Commitments that were made in the past.
- *Quotation exposure*
- *Backlog exposure*
- *Billing exposure*

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**On-Balance-Sheet
Transaction Exposure**

- Trade accounts: account receivables & account payables (*billing exposure*)
- Borrowing & lending: notes receivable & notes payable

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**Off-Balance-Sheet
Transaction Exposure**

- *Quotation exposure*
- Unfulfilled sales or purchase contracts (*backlog exposure*)
- Unused *credit lines* (for a lender)
- Forward, future or option contracts
- Law suits

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**Transaction Exposure:
*Corporate Responses***

- Remain unprotected
- Employ *defensive* action to reduce or eliminate the FXX

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**Remaining Unprotected—
*Doing Nothing***

- Taking no defensive actions to protect the company
- Done either because of:
 - Ignorance or carelessness
 - Deliberate policy

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***Deliberate* Reasons for
Remaining Unprotected**

- Lack of opportunities
- Belief that the net exposure is favorable
- Belief that FX markets are truly efficient
- The cost of the hedge is too high.

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**Possible *Advantages*
of “Doing-Nothing”**

- Ease of use
- Low transactions cost
- Possible favorable move in currency
 - *Realized gain*^m

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Possible *Disadvantages* of "Doing-Nothing"

- High risk--Possible loss resulting from unfavorable movement of exchange rate
 - *Realized* loss
- Worry

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Transaction Exposure: *Defensive Actions*

- Actions, in response to anticipated XR changes, that are taken to defend the company against possible losses from those XR changes
- In contrast to the same actions taken for *speculative* reasons

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Contractual Hedges

- Deliberately entering into a financial contract in order to offset NAE or NLE.
 - Create a new *exposed* contract offsetting an existing exposed contract.
- If a *single* exposed contract is hedged, it is called *covering*.

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Transaction-Exposure *Hedges*

- A hedge involves *deliberating creating FX exposure—but opposite to the existing exposure.*
- *Asset exposure is hedged by creating an exposed liability in the same currency.*
- *Liability exposure is hedged by creating an exposed asset in the same currency.*

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Transaction Exposure

- Hedges that are *off-balance-sheet*:
 - *Forward hedge*
 - *Futures hedge*
 - *Options hedge*
- On balance sheet: *money-market hedge*

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Money-Market Hedge

- **Borrowing in one currency and investing in another**
- **The risk is shifted from one currency to another—eliminating the FXX risk.**

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Money-Market Hedge

- *On the balance sheet*

- **Increases both the assets (the investment) and the liabilities (the loan)**

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3 Steps of Money-Market Hedge

- **Borrow the currency in which you desire to create a liability**
 - The currency that you expect to weaken

- **Buy the stronger currency spot, creating an asset.**

- **Invest in that currency (or pay off liabilities)**

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MM Hedge with *NAE*

1. **Borrow in the currency w/ the *NAE*, thus increasing the exposed *liabilities* to offset the exposed assets**

2. **Buy foreign currency spot**

3. **Invest those funds (or pay off liabilities)**

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MM Hedge with NAE

- The asset exposure in a possibly weakening currency is replaced by an asset in a more desirable currency.
- A loan has been acquired in the exposed currency and an asset in the *safe harbor* currency--both appearing *on* the balance sheet.

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MM Hedge with NLE

1. Invest in that currency (thereby *increasing exposed assets* to offset the exposed liabilities)
2. Buy that currency spot.
3. Borrow the necessary funds in the foreign currency (*increasing the liabilities in desired currency*).

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MM Hedge with NLE

- Note that with *NLE*, it is first necessary to calculate the amount that we need to *invest* in order to create the hedge.
- Then we need to work *backwards* to calculate how much we need to *borrow* in a different currency in order to have the money to make that investment.

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Money-Market Hedges

- Whether an NAE or NLE is being hedged, the 3 steps in a MM hedge are exactly the same:
 1. Borrow to create a liability.
 2. Buy the desired currency spot.
 3. Invest that currency.

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**Transaction-Exposure Hedges:
*Recap***

- A hedge involves *deliberating creating FX exposure—but opposite to the existing exposure.*
 - *Asset exposure is hedged by creating an exposed liability in the same currency.*
 - *Liability exposure is hedged by creating an exposed asset in the same currency.*

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Advantages of Contractual Hedges

- Elimination of uncertainty
- Peace of mind--Hedges are ***legally-binding contracts!!!***

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Disadvantages of Contractual Hedges

- **Cost**
 - **No gain, if currency move is favorable**
 - **With the exception of an FX option**
- **Remember: A hedge is cautious--like buying *insurance*.**

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Basic Hedging Strategies

1. Hedge *all* exposures
 - **High transaction cost**
 - **Generally the *worst alternative***
 - **Except perhaps for companies with small transactions exposure**

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Basic Hedging Strategies

2. Hedge *no* exposures
 - **Cheapest to implement short term**
 - **However, failing to hedge may be *very expensive* in the "long run."**

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Basic Hedging Strategies

3. Hedge *selectively*

- Most costly to implement
 - Requires intensive active management
- However, generally the best alternative

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Transaction Exposure: Summary

- The exposure is in *existing contracts*.
- Either on or off balance sheet
- We can either gain or lose from FX exposure.
- Use *protective hedges* to eliminate undesired exposure.

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Operating Exposure

- The sensitivity of the firm's *future* operating cash flows (and, therefore, its profitability) to *unanticipated* currency-value changes
 - = *economic exposure*

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Operating Exposure

- Based upon *forecasts* of future cash flows
 - Difficult to estimate
- Examples:
 - Future expenses
 - Future revenues

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Operating Exposure

Competitive effect: The future cash flows themselves may change because of the impact of the change in the currency value upon *the firm's competitive position*.

- **Conversion effect:** The future cash flows will be *converted* at an unknown exchange rate.

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Operating Exposure: Competitive effect

- The *future cash flows* may change because of the impact of the change in the currency value upon *the firm's future competitive position*.

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**Operating Exposure:
Conversion effect**

- The future cash flows will be *converted* at an unknown exchange rate.

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Operating Exposure

- *Managing* economic exposure:
 - Diversify!
 - Diversify!
 - Diversify!!!

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Diversify Operations

Diversify *sourcing* of inputs

- Materials
- Components
- *Diversify location of production*

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Diversify Markets

- Diversify *location* of markets
- Diversify & differentiate *products* offered
- Optimize your *comparative advantages* [*core competencies*]

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Diversify Financing

- Markets
- Currencies
- Types of financial instruments
- Maturities of debt instruments

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**Managing Operating Exposure:
*Other Proactive Policies***

Matching the currencies of cash inflows & outflows

- Risk-sharing agreements
- *Back-to-back loans* (on balance sheet)
- *Currency swaps* (off balance sheet)

Managing Operating Exposure

- Do **NOT** use financial hedges!
 - Except *possibly* foreign-currency *options*

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Operating Exposure: Summary

- Potential effect upon *future* competitiveness, cash flows and profitability
- Based upon forecasts, not hard numbers
- Hedging is *not* appropriate.
- Best tool: *diversification--of operations and financing!*

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Foreign-Exchange Exposure

Which of the 3 is most important?

- Operating Exposure?
- Transaction exposure?
- Translation exposure?

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Economic Exposure

- **Economic exposure is *by far* the most important of the three forms of FC exposure!**

- **It looks at the entire *future* international success of the firm!**

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