

MANAGING TRANSACTION EXPOSURE

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ABSTRACT: In the period of crisis the volatility of foreign exchange is one of most important elements to be consider in the risk management strategy at corporate level .The paper will focus on the main types of foreign exchange exposure, the role of hedging in managing the currency risk and the measurement of transaction exposure. The risk management in practice is illustrated by a case study designed to capture and contrast the effects of different types of options for hedging the transaction exposure.

Keywords: foreign exchange exposure, currency risk, hedging.

JEL codes: G30, F31,

Introduction

In the period of crisis the volatility of foreign exchange is one of most important elements to be considered in the risk management strategy at corporate level.

Foreign exchange exposure is the possibility of either beneficial or harmful effects on a company caused by a change in foreign exchange rates. The effect on the company may be on its profits, its cash flows, or its market value.

In some other words, foreign exchange exposure is a measure of the potential for a firm's profitability, net cash flow, and market value to change because of a change in exchange rates.

An important task of the financial manager is to measure foreign exchange exposure and to manage it so as to maximize the profitability, net cash flow, and market value of the firm.

Literature review

Reviewing the relevant literature on the subject some points should be retained as the starting point of the current approach (Moffett, 2009).

In analyzing the foreign exchange exposure three types of foreign exchange exposure should be considered:

Transaction exposure is the potential for a gain or loss in contracted-for near term cash flows caused by a foreign exchange rate-induced change in the value of amounts due to the multinational² companies or amounts that the multinational companies owes to other parties. As such, it is a change in the home currency value of cash flows that are already contracted for. Transaction exposure measures changes in the value of outstanding financial obligations incurred prior to a change in exchange rates but not due to be settled until after the exchange rates change.

Thus, this type of exposure deals with changes in cash flows the result from existing contractual obligations.

Operating exposure, also called *economic exposure*, *competitive exposure*, or *strategic exposure*, measures the change in the present value of the firm resulting from any change in future operating cash flows of the firm caused by an unexpected change in exchange rates. The same it refers to a change in expected long-term cash flows; i.e., future cash flows expected in the course of normal business but not yet contracted for.

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² A **multinational corporation** (MNC) or **transnational corporation** (TNC), also called **multinational enterprise** (MNE^[1]), is a corporation or enterprise that manages production or delivers services in more than one country. It can also be referred to as an *international corporation*.

Translation exposure is the possibility of a change in the equity section (common stock, retained earnings, and equity reserves) of a multinational company's consolidated balance sheet, caused by a change (expected or not expected) in foreign exchange rates. As such it is not a cash flow change, but is rather the result of consolidating into one parent company's financial statement the individual financial statements of related subsidiaries and affiliates.

Multinational companies possess a multitude of cash flows that are sensitive to changes in exchange rates, interest rates, and commodity prices.

These three financial price risks are the subject of the growing field of financial risk management.

Many firms attempt to manage their currency exposures through hedging.

Hedging the currency risk is an important pillar of the general risk management of a multinational company.

In general terms, hedging is the taking of a position, either acquiring a cash flow, an asset, or a contract (including a forward contract) that will rise (fall) in value and offset a fall (rise) in the value of an existing position. Hedging therefore protects the owner of the existing asset from loss. However it also eliminates any gain from an increase in the value of the asset hedged against.

The value of a firm, according to financial theory, is the net present value of all expected future cash flows. The fact that these cash flows are expected emphasizes that nothing about the future is certain. The fact that the future cash flows are affecting the value of the company the efforts to limit the alteration of those flows by the exchange rate change is of great importance.

Currency risk, on focus in a hedging consisting strategy, is seen as the variance in expected cash flows arising from exchange rate changes.

A firm that hedges these exposures reduces the variability of its future expected cash flows about the mean of distribution. This reduction of distribution variance is a reduction of risk.

Methodology

As methodology, in building a currency risk management, we started from taking into account the arguments pro and cons for an active currency risk management program.

The six arguments against a firm pursuing an active currency risk management program are (Stulz, 1996):

(1) Currency risk management does not increase the expected cash flows of the firm.

(2) Currency risk management normally consumes some of a firm's resources and so reduces cash flow. The impact on value is a combination of the reduction of cash flow (which by itself lowers value) and the reduction in variance (which by itself increases value).

(3) Management often conducts hedging activities that benefit management at the expense of the shareholders. The field of finance called agency theory frequently argues that management is generally more risk-averse than shareholders. If the firm's goal is to maximize shareholder wealth, then hedging activity is probably not in the best interest of the shareholders.

(4) Managers cannot outguess the market. If and when markets are in equilibrium with respect to parity conditions, the expected net present value of hedging is zero.

(5) Management's motivation to reduce variability is sometimes driven by accounting reasons. Management may believe that it will be criticized more severely for incurring foreign exchange losses in its financial statements than for incurring similar or even higher cash costs in avoiding the foreign exchange loss. Foreign exchange losses appear in the income statement as a highly visible separate line item or as a footnote, but the higher costs of protection are buried in operating or interest expenses.

(6) Efficient market theorists believe that investors can see through the "accounting veil" and therefore have already factored the foreign exchange effect into a firm's market valuation.

Four arguments are to be considered in favor of a firm pursuing an active currency risk management program (Bodnar, 1998):

(1) Reduction in risk in future cash flows improves the planning capability of the firm. If the firm can more accurately predict future cash flows, it may be able to undertake specific investments or activities that it might otherwise not consider.

(2) Reduction of risk in future cash flows reduces the likelihood that the firm's cash flows will fall below a necessary minimum. A firm must generate sufficient cash flows to make debt-service payments in order for it to continue to operate. This minimum cash flow point, often referred to as the point of financial distress, lies left of the center of the distribution of expected cash flows. Hedging reduces the likelihood of the firm's cash flows falling to this level.

(3) Management has a comparative advantage over the individual shareholder in knowing the actual currency risk of the firm. Regardless of the level of disclosure provided by the firm to the public, management always possesses an advantage in the depth and breadth of knowledge concerning the real risks and returns inherent in any firm's business.

(4) Markets are usually in disequilibrium because of structural and institutional imperfections, as well as unexpected external shocks (such as an oil crisis or war). Management is in a better position than shareholders to recognize disequilibrium conditions and to take advantage of one-time opportunities to enhance firm value through selective hedging.

There are four main types of transactions from which transaction exposure arises:

(1) Purchasing or selling on credit goods or services when prices are stated in foreign currencies,

(2) Borrowing or lending funds when repayment is to be made in a foreign currency,

(3) Being a party to an unperformed foreign exchange forward contract, and

(4) Acquiring assets or incurring liabilities denominated in foreign currencies.

An important aspect to be noticed is that the foreign currency cash balances do not create transaction exposure, even though their home currency value changes immediately with a change in exchange rates. No legal obligation exists to move the cash from one country and currency to another. If such an obligation did exist, it would show on the books as a payable (e.g., dividends declared and payable) or receivable and then be counted as part of transaction exposure. Nevertheless, the foreign exchange value of cash balances does change when exchange rates change. Such a change is reflected in the consolidated statement of cash flows and the consolidated balance sheet (Smith, 1990).

Foreign exchange transaction exposure can be managed by contractual, operating, and financial hedges. The main contractual hedges employ the forward, money, futures, and options markets. Operating and financial hedges employ the use of risk-sharing agreements, leads and lags in payment terms, swaps.

The term natural hedge refers to an off-setting operating cash flow, a payable arising from the conduct of business.

A financial hedge refers to either an off-setting debt obligation (such as a loan) or some type of financial derivative such as an interest rate swap.

Care should be taken to distinguish operating hedges from financing hedges.

A forward hedge involves a forward (or futures) contract and a source of funds to fulfill the contract. In some situations, funds to fulfill the forward exchange contract are not already available or due to be received later, but must be purchased in the spot market at some future date. This type of hedge is "open" or "uncovered" and involves considerable risk because the hedge must take a chance on the uncertain future spot rate to fulfill the forward contract.

The purchase of such funds at a later date is referred to as covering.

A money market hedge also involves a contract and a source of funds to fulfill that contract. In this instance, the contract is a loan agreement. The firm seeking the money market hedge borrows in one currency and exchanges the proceeds for another currency. Funds to fulfill the contract – to repay the loan – may be generated from business operations, in which case the money market hedge is covered. Alternatively, funds to repay the loan may be purchased in

The foreign exchange spot market when the loan matures (uncovered or open money market hedge).

Hedging with options allows for participation in any upside potential associated with the position while limiting downside risk. The choice of option strike prices is a very important aspect of utilizing options as option premiums, and payoff patterns will differ accordingly.

Ultimately a treasurer must choose among alternative strategies to manage transaction exposure by using two main decision criteria.

The two main decision criteria are:

- (1) is treasury a cost center or a profit center?, and
- (2) what is the tolerance for risk?

According to our research on 10 Romanian multinationals some trends revealed by the literature could be identified as holding, in line with the general tendency:

I. The treasury function of most private firms, is usually considered a cost center. The treasury function is not expected to add profit to the firm's bottom line. Currency risk managers are expected to err on the conservative side when managing the firm's money.

II. Firms must decide which exposures to hedge:

Many firms do not allow the hedging of quotation exposure or backlog exposure as a matter of policy

Many firms feel that until the transaction exists on the accounting books of the firm, the probability of the exposure actually occurring is considered to be less than 100%

An increasing number of firms, however, are actively hedging not only backlog exposures, but also selectively hedging quotation and anticipated exposures.

Anticipated exposures are transactions for which there are – at present – no contracts or agreements between parties.

As might be expected, transaction exposure management programs are generally divided along an "option-line"; those that use options and those that do not.

Firms that do not use currency options rely almost exclusively on forward contracts and money market hedges.

Many multinational companies have established rather rigid transaction exposure risk management policies that mandate proportional hedging. These contracts generally require the use of forward contract hedges on a percentage of existing transaction exposures. The remaining portion of the exposure is then selectively hedged on the basis of the firm's risk tolerance, view of exchange rate movements, and confidence level. (Bryson, 1998)

Illustration-case study

In January 2008, TEXTIL SA, a Romanian company specialized in high quality curtains signed a contract to provide curtains for a chain of restaurants in France, for which they will be paid in EUR upon completion of the work in 3-months time. Hence they were exposed to depreciation in the EUR/RON rate. The value of the contract was EUR 3 million.

Due to increasing sales in Europe, TEXTIL SA had an ongoing exposure in EUR/RON.

The management team was quite concerned over the exchange rate exposure that TEXTIL SA was bearing in this contract (3.5600 EUR/RON). The objective was to provide certainty to their financial results, and hence limit the fluctuations caused in their Profit and Loss statement by changes in FX and Interest Rates. Nevertheless the company had an opportunistic approach to risk management.

In the tender process, the contract was obtained by the company by using an aggressive budget rate 3.5600 (EUR/RON) and it represents 475 of the annual turnover. The contract, however, was sealed and was therefore not open for further renegotiation.

The financial controller knew, however, that the size of the transaction represented too large a risk to TEXTIL SA if left unhedged. As someone who keeps a keen eye on the currency markets,

he had the opinion that EUR/RON will marginally depreciate to 3.4600 over the coming few months. EUR/RON spot was currently trading at 3.5000 (January 2008), and the 3M Outright Forward at 3.5400.

The company had the requirement to sell amount of EUR 3 million (in April 2008) they got out of the contract and buy RON for value in three months, and therefore was looking to protect against a potential depreciation of the EUR/RON over the period (three months).

The hedging possible strategies had the following pricing parameters:

Expiry Date: 3 Months

Spot ref. EUR/RON (Jan 2008): 3.5000

3 Month EUR/RON Outright Forward (April 2008): 3.5400

The possible option to manage the transaction exposure is:

- *Do Nothing*
- *Do Forward*
- *Buying Options*

Doing Nothing

Doing nothing meant for them to sell EUR/RON at spot rate at maturity (in three months time).

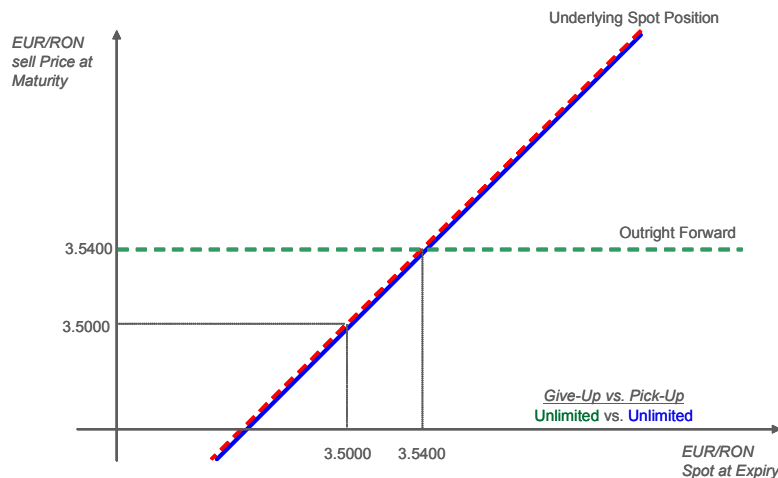


Fig. no. 1 - Doing Nothing

Advantages:

Ensures full Participation in case of an appreciation of EUR/RON. No premium Outlay.
No potential lock-in of Forward Discount

Drawbacks:

No protection in case of a depreciation of EUR/RON; no worst case. No potential lock-in of Forward Premium.

Doing Forward

This strategy gave the chance to sell the amount received in three months time out of the contract at a fixed sell price in three months time (3.5400 EUR/RON).



Fig. no. 2 - Doing Forward

Advantages:

No Risk. The exporter pays no premium to protect him against a potential depreciation of EUR/RON below 3.5400

Drawbacks:

In the case of appreciation of EUR/RON above 3.5400 (outright rate), the exporter sells at a less favourable price (no return). Not possible to restructure in case of uncertain exposure

Buying Option

Buying a Plain Vanilla put EUR/RON call, strike 3.54.

The product will provide the most flexibility for selling EUR/RON but includes as well a premium outlay of 1.5% which is affecting the net cost of the financial instrument.

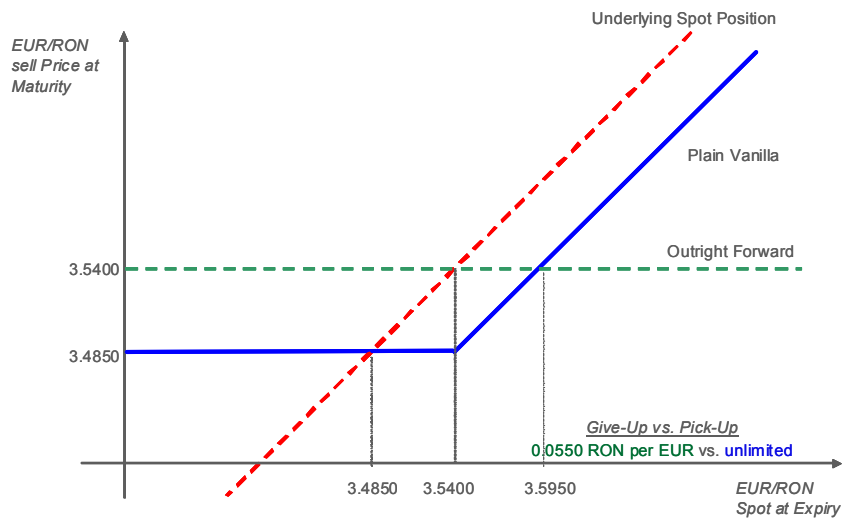


Fig. no. 3 - Plain Vanilla

Collar zero cost structure

By definition, Collar provides a known maximum and minimum sell price. This seemed to be the perfect solution for the company because the objective was to reach 3.56 the rate agreed in the contract and was protecting the company against a downward movement.

By using this product the bank could assure, from the outset of the contract, a minimum and maximum sell price for EUR/RON whereby the maximum sell price was more favourable than the traditional Outright Forward Price.

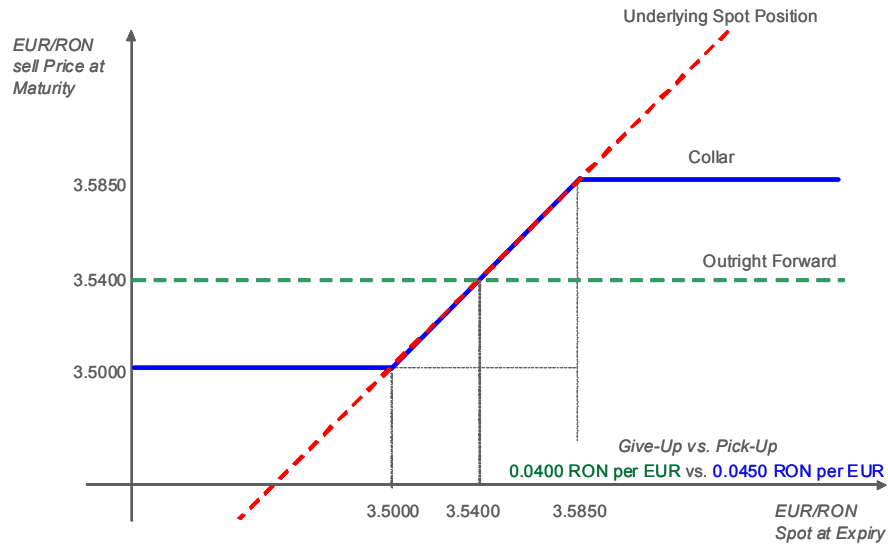


Fig. no. 4 - Collar

As a concept Collar is to:

Buy EUR Put /RON Call, strike 3.5000, Notional EUR 3 mil.

Sell EUR Call / RON Put, strike 3.5850, Notional EUR 3 mil

Scenarios at Expiry:

EUR/RON is above 3.5850: the exporter sells EUR/RON at 3.5850

EUR/RON is between 3.5000 and 3.5850: the exporter sells EUR/RON at spot rate

EUR/RON is below 3.5000: the exporter sells EUR/RON at 3.5000

To elements of this strategy:

Advantages:

Zero cost strategy

The exporter is guaranteed a minimum (3.5000) and maximum (3.5850) sell price for EUR/RON from the outset. The exporter benefits from an appreciation of EUR/RON above 3.5850 by selling at a more favourable price compared to the Outright Forward (3.54).

Drawbacks:

In the case of depreciation of EUR/RON below 3.5000, the exporter sells at a less favourable price compared to the traditional forward. In the case of a strong appreciation of EUR/RON, the exporter sells at 3.5850 and is therefore subject to an opportunity cost relative to the market price.

Participating forward as concept

The exporter is assured from the outset of the contract, a minimum Outright Forward sell price for EUR/RON which provides *full protection* against the *depreciation* and *partial benefit* from the *appreciation* of the currency pair.

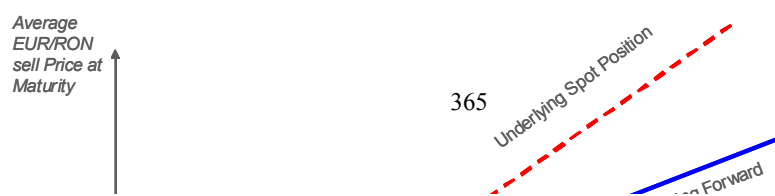


Fig. no. 5 - Participating Forward

Buy EUR Put /RON Call, strike 3.5000, Notional EUR 3 mil.
Sell EUR Call / RON Put, strike 3.5000, Notional EUR 3 mil.

Scenarios at Expiry:

EUR/RON is below 3.5000: the exporter sells 100% of the total nominal at 3.5000

EUR/RON is above 3.5000: the exporter sells 50% of the total nominal at 3.5000 and the other 50% at the prevailing spot rate.

The elements of the strategy:

Advantages:

Zero cost strategy

The exporter is guaranteed a minimum (3.5000) sell price for 100% of the EUR/RON nominal from the outset. The exporter benefits from an appreciation of EUR/RON by selling 50% of the EUR/RON nominal at 3.5000 and the remaining 50% at the spot rate if EUR/RON is above 3.5000 at expiry - this could provide an improved average sell level relative to the Outright Forward

Drawbacks:

In the case of depreciation of EUR/RON below 3.5000, the exporter sells at a less favourable price compared to the traditional forward. In the case of a strong appreciation of EUR/RON, the exporter is subject to an opportunity cost relative to the spot rate

Conclusions

Considerable theoretical debates exist as whether firms should hedge the transaction exposure. The present paper support the fact that the hedging reduces the variability of cash flows to firm. It does not increase the cash flows to the firm. In fact the costs of hedging may lower cash flows of the company. The research and the study case support the idea that the choice of the type of contractual hedge to use depend on the individual firm's currency risk tolerance and its expectation of probable changes of exchange rate over the transaction exposure period.

References

1. Bodnar, Gordon M., "Wharton survey of financial Risk Management by Non-Financial Firms" *Financial Management* , Vol. 24, No 4, 1998, pp. 70-91
2. Briys, Eric and Francois de Varenne, "Optimal Hedging and Partial Loss Offset", *European financial management*, Vol.; 4, 1998, pp.321-334
3. Bucur Cosmin, *Managing through Derivatives* - presentation in ASEBUSS, December 2008
4. Eiteman, David and Stonehill, Arthur and Moffet, Michael, "Multinational Business Finance", Pearson International Edition, 2007
5. Moffet, Michael and Stonehill, Arthur and Eiteman, David, "Multinational finance", Pearson International Edition, 2009