

INTERNATIONAL BANKING

BEST PRACTICES:

Foreign exchange risk management



EXECUTIVE SUMMARY

As the aftershocks of the credit crisis fade away, U.S. companies have resumed their pursuit of global trade opportunities. Companies are increasing production with overseas partners, importing and exporting goods and services, and pursuing merger and acquisition opportunities. Against this backdrop, more and more businesses are addressing their need for strategic foreign exchange (FX) risk management.

The resurgence of foreign trade – combined with volatility in the global financial markets – heightens the importance of having a foreign exchange risk management strategy in place. After all, FX exposure can significantly influence a company's accounting and economic activities and affect the strength of its bottom line.

A strong FX strategy begins with a clear framework. It should include:

- Identification of specific risks and how they impact financials
- Measurement and collection of FX risk data
- Management of the identified risks
- Definition and evaluation of the program's success

This paper provides a number of recommendations and best practices to help you develop a plan to manage the foreign exchange risk your company faces.

Why hedge?

A successful hedging program mutes volatility in the value of earnings and the cash generated overseas.

There is a common misperception that hedging is about making money. The real purpose of a hedging program is to diminish volatility in earnings and cash flow.

The growth of international trade, combined with the recent volatility in global markets, has heightened the need for foreign exchange risk management. But, while a hedging program should not be confused with a profit center, an active yet prudent risk management plan can add value. The reason: hedging allows managers to focus on maximizing the operating value of their firm while minimizing the financial disruptions caused by market fluctuations.

In fact, academic research by Allayannis and Weston (2001) concluded that the hedging premium for public companies – defined as a higher firm value – can be as much as five percent. It is not just public companies that hedge; U.S. companies of all sizes now conduct business overseas, and their numbers are growing.

According to the *U.S. International Trade in Goods and Services Reports*¹, exports of U.S. goods and services in 2011 rose 14.5 percent to \$2.103 trillion, up from \$1.838 trillion in 2010. For the month of December alone, U.S. exports of goods and services were 9.0 percent higher than in December 2010 and imports increased 11.3 percent over that same period.

This pick-up in overseas activity amplifies not only the need for FX risk management, but also the need for a successful program. Such programs require a disciplined strategy to manage FX risk in an orderly manner, and that begins with a defined methodology to understand and manage the financial implications of your company's international operations and expansion plans.

DEVELOP THE FRAMEWORK – POLICY AND PROCEDURE

Hedging programs, while not universal, are becoming increasingly popular among global companies. A March 2012 J.P. Morgan survey conducted among large corporations in Japan, Europe and the U.S. revealed that global customers had already hedged approximately 46 percent of their 2012 FX exposure and 13 percent of their 2013 FX exposure.

The framework for a successful FX risk reduction strategy is based on the creation of a board-approved policy, and it ends with the execution of that policy.

The formation of such a policy should be guided by five key elements:

- Definition of the hedging objectives
- Establishment of risk management procedures
- Definition of the term and percentage exposure to be hedged
- Agreement as to the permitted hedge instruments
- Delegation of the authority for hedging decisions and execution

In general, the implementation of a policy will involve a number of best practices. These should include:

- Identification of the FX risks
- Central measurement and data collection
- Management of global FX exposures
- Utilization of all prudent hedging tools, including forwards and options
- Determination of the criteria for defining the success of the program

In the sections that follow, we will look at the best practices for each element of the framework.

¹ This report is issued by the Department of Commerce's U.S. Census Bureau and the Bureau of Economic Analysis.

Identify risks

FX risk arises in one of four ways, as the chart below demonstrates.

- Forecast risk
- Revaluation risk for monetary items
- Foreign denominated cash risk
- Earnings translation risk

The first two exposures, *forecast risk* and *revaluation risk*, are transactional in nature. They apply to the full cash and earnings cycle, running from the initial budget to the final cash collections and payments.

With forecast risk, budgets are exposed to assumptions that need to be made about the exchange rates that will be in effect as future foreign revenues or expenses are generated. As the forecasts are replaced by actual results, and the foreign receivables and payables are recorded on the financial statements, the result of currency volatility is transaction remeasurement risk that impacts current earnings.

The other two categories of FX risk – *foreign denominated cash risk* and *earnings translation risk* – are translational.

The translation of a subsidiary’s balance sheet is generally not a key risk unless there is substantial foreign currency cash held at the subsidiary or

if there are plans to sell overseas assets. The translation of a subsidiary’s income statement, however, is significant. It is also difficult to hedge. However, this risk may be addressable through the proper application of a forecast risk-hedging program.

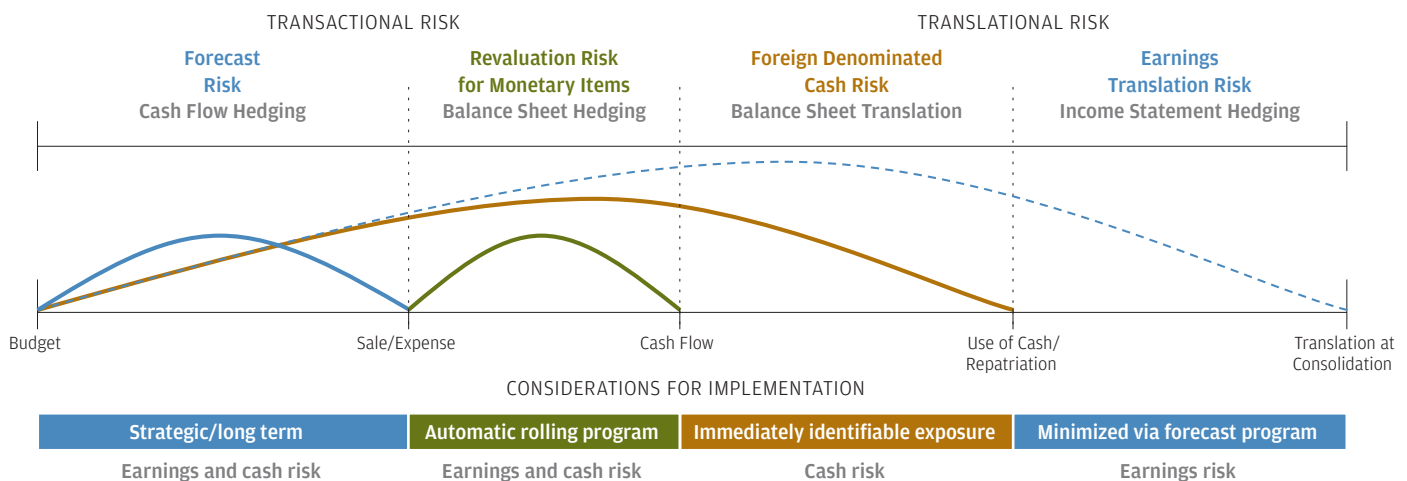
To understand how the different risks impact the development of a hedging program, we will take a closer look at each.

Forecast risk and cash flow hedging

Forecast risk involves future transactions where revenues will be denominated in one currency and expenses in another. The risk has to do with the ultimate accuracy of the forecasts for future currency exchange and how it affects future margins. This can cause the realized value of receipts to vary significantly from the amount that was budgeted. It can also lead to differences in period-over-period comparisons. This risk would arise, for example, when a U.S. manufacturer exports its products to Germany and receives payment in euros (EUR) at some future date. Between the time a sale is projected and the time at which the sale is made, profit margins will vary with changes in the EUR/USD exchange rate.

Hedge accounting treatment is essential in avoiding such earnings volatility. In the absence of cash flow hedge accounting, the hedge instrument would have to be revalued at each accounting period (affecting earnings) prior to the time the sale is recognized. Cash flow hedge accounting enables the earnings impact of the hedge instrument to be matched up with the exposure recognition in the income statement.

UNDERSTANDING RISK: THE FOUR TYPES OF FX RISK



FX risk arises in different ways. Each type of risk has a different impact on a company’s financial results.

Cash flow hedge accounting impacts balance sheets rather than the income statements over the life of the hedge.

Many companies believe that pricing a forecasted transaction with a foreign customer or supplier in USD does not incur FX risk since they are denominated in USD. But this view may be an illusion. In reality, the risk has simply been transferred to the customer or vendor.

Consider the case of an overseas vendor who accepts payment in USD. That vendor will have to sell the USD received in payment and purchase local currency to cover its costs. If FX rates shift, the vendor may attempt to get a price adjustment for a shortfall. Over time, the vendor may seek to raise its prices or may just be unable to supply the product to foreign buyers. In short, the transfer of risk to the vendor is real. Therefore, a better solution may be to pay the vendor in the local currency and manage the FX risk. This would leave the importer in control of the exposure rather than at the mercy of the vendor's ability to deliver as promised.

Revaluation risk and balance sheet hedging

Most companies begin hedging their transaction exposure as it relates to current earnings and near-term cash generation. Because changes in value of transaction exposures due to FX are reported in current earnings, cash flow hedge accounting is not required or desirable. Typically, a short-dated forward contract is an effective hedge in these situations. Forwards are simple to execute and flexible enough to be rolled over into a new hedge at the end of the period – and for a different amount if warranted by changes in the notional of the exposure. Online tools, such as Morgan Direct Commercial, can make this recurring process more efficient. Longer-dated exposures, such as intercompany loans, may also be hedged through the use of forward contracts that have a longer maturity or through cross-currency swaps. Finally, exposures in high-yield currencies require additional analysis before they can be addressed through forward contract hedges.

Foreign denominated cash risk

The next two risk categories (depicted in the chart on page 2) refer to the impact a foreign subsidiary has on a parent company's balance sheet and its income statement.

In such cases, when the parent company consolidates its financial results, it will have to translate its foreign subsidiary's balance sheet and income statement into USD. Due to FX rate movements between accounting periods that translation will result in a gain or loss in the parent company's financial statements. However, the translation of the balance sheet exposure – of the net investment – does not impact earnings. The gain or loss will be reported as an entry that affects equity.

Hedging net investment translation risk is less common than hedging the other risks we have mentioned because it does not create earnings volatility. Companies that do hedge this type of risk do it to protect the USD value of foreign cash held on a subsidiary's balance sheet. They will hedge in anticipation of a future dividend or against the USD value of the entire net asset when the divestiture of an overseas operation is planned.

Net investment hedge accounting allows the hedge to be marked to market and reported in equity, bypassing any earnings volatility from hedging this type of exposure.

Earnings translation risk

Earnings translation risk exposure arises with the translation of a foreign subsidiary's income statement. Since hedge accounting is not available in this situation, it offers a special challenge. As previously noted, this type of risk can often be managed with a hedge of the anticipated cross-border cash flows through the forecast risk program.

Transaction exposure involves receivables, payables, cash or repayable intercompany loans – denominated in a nonfunctional currency – that need to be revalued when reported as earnings.

Measure and collect data

While a U.S. parent may own foreign interests and have subsidiaries that report in their local foreign currency, it is important to conduct analysis on a consolidated basis – and at the parent level. When risk is measured at the parent company, the risk management function becomes centralized and USD-centric. This approach offers a clear advantage to the company.

By addressing all sources of FX risk it faces, a company is able to:

- Maximize the use of the natural offsets that arise across the enterprise
- Increase the control of offshore hedging activity
- Minimize transaction costs

Risk management can be less effective when it is decentralized. Assume a U.S. parent has a subsidiary in Germany with EUR-denominated sales and expenses, which leads to EUR-denominated earnings and free cash flow. From the parent's USD perspective, this represents a “long” EUR exposure.

But the subsidiary may view the risk differently. If the subsidiary's operating management is measured in terms of EUR-denominated results, it will be disinclined to hedge risk, leaving the parent exposed to earnings volatility.

The example becomes more complicated if we assume the subsidiary also has some USD-denominated sales. Given the parent is already long in terms of EUR exposure, should the parent allow the subsidiary to hedge the expected USD-denominated revenue – sell USD and buy EUR? Such a trade would actually add to the overall consolidated risk of the firm; therefore, the subsidiary should not enter into the trade. Situations like these emphasize the need to consider all risk exposure within a hedging program, whether it lies at the parent or subsidiary level.

FX risk is nuanced – the way it is incurred will affect different aspects of a company's financial operations.

Collect the risk data

Companies with highly developed risk management practices tend to think about the organization of their data in the following way:

BALANCE SHEET RISK

- Transaction risk data is integrated into the monthly accounting process in order to hedge effectively.
- Generally, the booked transaction risk is fairly easy to identify. The revaluation of the underlying exposures themselves affects earnings, and unexpected gains and losses are thoroughly investigated.

FORECAST RISK

- Forecast risk data is integrated into the quarterly or annual budget process.
- Forecast risk can be problematic, especially if a series of foreign acquisitions has left a company with numerous reporting systems around the world.
- Sales and expense data, listed by the currency in which those transactions will take place, is gathered before a full forecast hedge program is implemented.

While the new processes may take a budget cycle or two to fully implement, the real FX exposures faced by a company will be highlighted if forecasted data is regularly collected.

Manage risk

As noted earlier, an approved policy for hedging program procedures provides guidance for FX risk management.

While some questions may be related to “control” issues – such as who can hedge and how large of a trade will be allowed before additional approvals are necessary – four of the most important questions to address include:

- When should a company hedge?
- How much discretion should an FX policy permit?
- How far out into the future should a company hedge?
- What hedging tools should be utilized?

When should a company hedge?

Some companies lock in the exchange rates related to an annual plan. The following year, the cycle is repeated, and the next twelve months’ worth of risk is covered with a strip of twelve monthly hedges. This approach effectively locks in the plan for a year and creates a greater level of certainty in operational results for that year.

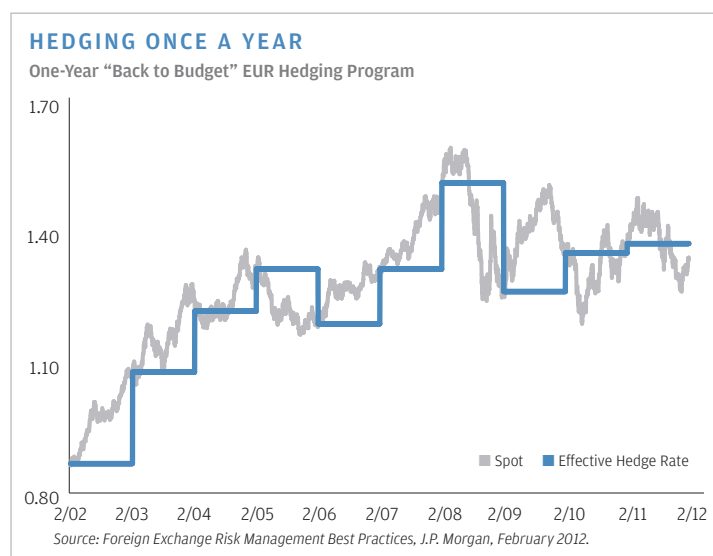
The downside to this approach is that it leads to what is referred to as a “cliff effect.”

To avoid the cliff effect, many companies use a rolling and layering strategy, which is also known as dollar-cost averaging. This approach is recommended because it reduces the potential volatility in earnings and cash. The rolling and layering approach involves first choosing a hedge horizon and the percentage of the exposure to hedge each period. The hedge horizon is typically between six and eighteen months, depending on factors such as the accuracy of the forecast, the ability to change prices and the competitive environment. As trades settle, the desired hedge ratio is maintained by layering in new contracts.

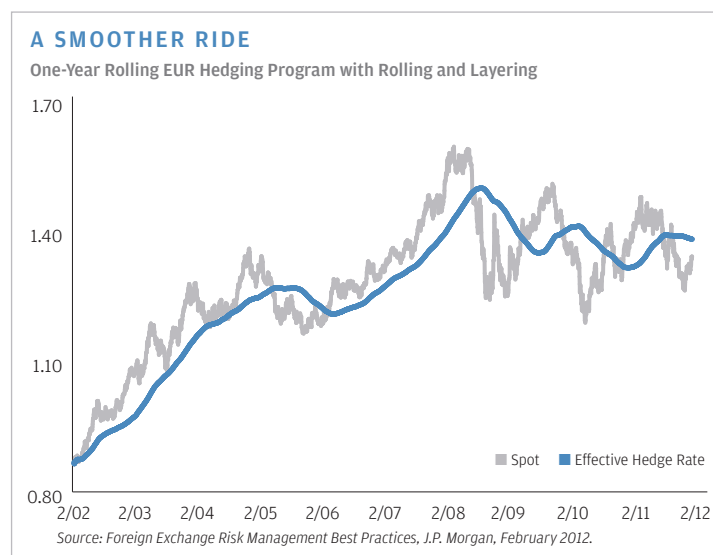
For example, at the inception of a typical rolling and layering program, a percentage of each quarter’s exposure will be hedged within a predefined range. The nearest quarter may be hedged between 50 and 80 percent for each month, and the next quarter may be hedged between 40 and 70 percent. This will continue to the maximum hedge horizon. At the end of each quarter, each month’s exposure is then adjusted to the predefined hedge percent.

Once the program is active and as each month’s hedges mature, the result will be calculated as the average of four rates: one from four quarters ago, one from three quarters ago, one from two quarters ago, and one from the prior quarter. Over time, this results in dollar-cost averaging and helps smooth out any unevenness in the program’s bottom-line results. This eliminates the need to ask: “Is this a good time to hedge?”

In addition, companies that choose to execute hedges monthly rather than quarterly would follow the same rolling and layering plan, but would also have more hedges built into the eventual average rate.



Locking in the rate on an entire year’s worth of cash flow, which is executed on a single date, results in a rate that may be an “exceptional” rate or an “undesirable” rate when compared to the hedge rate for the following year. This predicament is illustrated in the graph above.



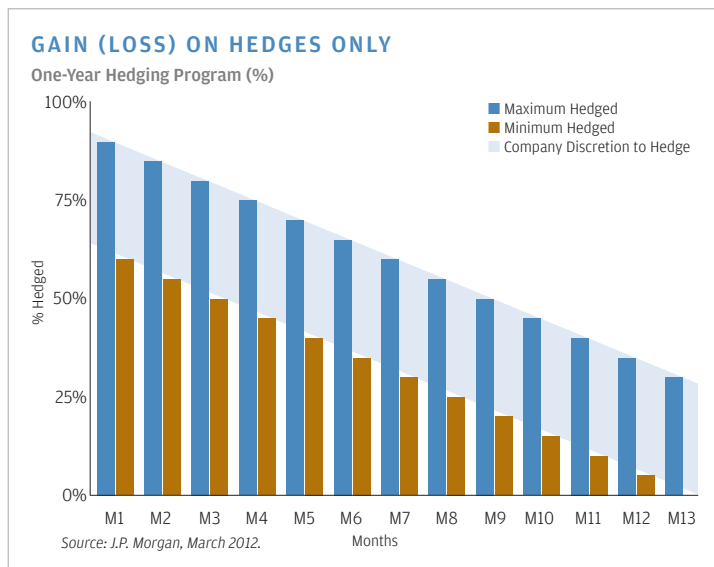
Dollar-cost averaging can smooth out the potential impact of fluctuating rates.

How much discretion should an FX policy permit?

Policies that mandate discipline when hedging forecasted cash flows, yet allow for some degree of discretion, are generally recommended. Discretion is especially recommended in terms of:

- Whether the company hedges between the minimum required by its policy and the maximum allowed in any given month
- When the company determines it is time to add a layer

The chart below illustrates discretion allowed in a forecasted cash flow hedging program.



When FX rates move in a favorable direction, forward contracts inhibit market gains. Options, however, allow participation in such moves.

How far out into the future should a company hedge?

Each company's ability to forecast is different and changes over time. However, through the use of the rolling and layering approach, adjustments may be made to the percentages hedged as new information becomes available.

Most companies have sufficient visibility to hedge 6 to 18 months into the future. Companies with long-term projects may need to hedge five years or longer.

What hedging tools should be utilized?

A transaction risk (balance sheet) program should generally rely only on forward contracts. Typically, cash is collected or paid rather quickly, and the amounts are known. Balance sheet positions in emerging markets require additional analysis (and perhaps the use of an option strategy), since high interest rate differentials can adversely impact hedge results over time.

Where a forecasting program is involved, there is naturally more uncertainty. Therefore, incorporating options products can provide greater flexibility. The flexibility that options bring to a program can be simply stated: protection when the FX rate moves in an unfavorable direction, and participation when the FX rate moves in a favorable direction. This concept becomes more important as the hedge horizon is extended.

Options can lead to an increase in market share, improvement in margins, or both. While the benefits of options are easy to appreciate, it is important to consider their associated costs.

Purchased options typically require a premium at inception (although this premium can be paid at maturity). To determine whether or not purchased options represent a better alternative to forward contracts, a comparison needs to be made between:

FORWARD CONTRACTS	PURCHASED OPTIONS
<ul style="list-style-type: none"> • No cash paid up front • Unknown amount of cash required to settle remains unknown 	<ul style="list-style-type: none"> • Known and limited amount of cash required at inception or at maturity

VS.

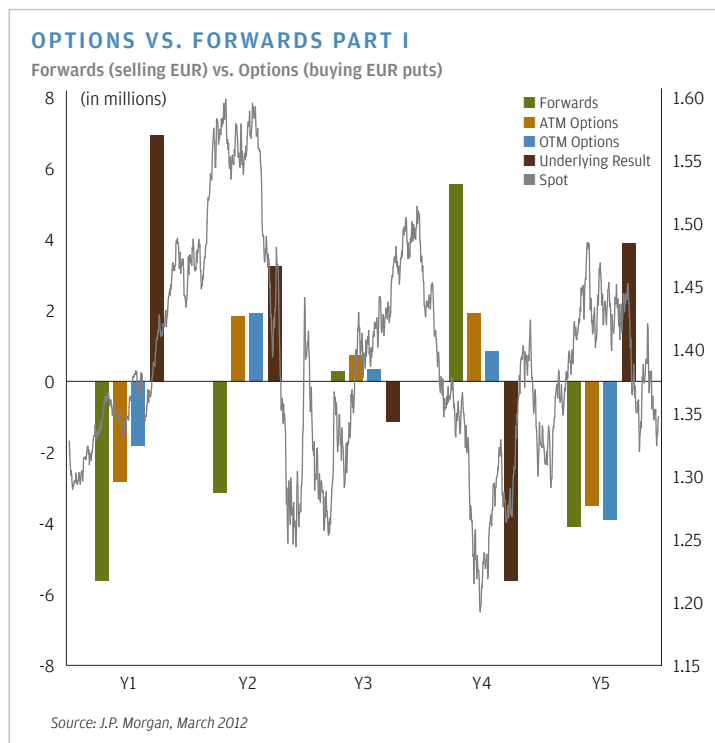
In this context, it becomes easier to evaluate the choice between forward contracts and purchased options. In fact, in the accompanying charts, recently conducted historical analysis quantifies the comparison.

Companies that used simple purchased options to hedge forecasted EUR-denominated sales over the past five years would have had a much cheaper hedge than they would have experienced with forward contracts.

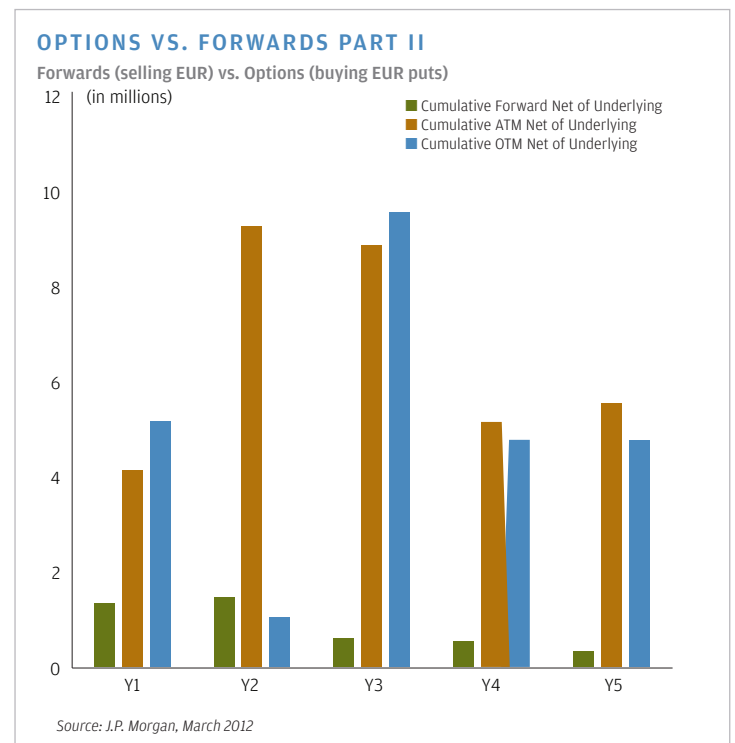
The left bar chart below demonstrates that the forward contract's settlement value can incur a loss when compared to the gain (or smaller loss) recorded by using options.

In fact, if you include the earnings impact of the exposure plus the hedge in this analysis, you get an even more interesting cumulative result. The point here is not that options should always be chosen over forward contracts, but rather we suggest that options have the ability to provide a much better outcome than forward contracts over the long term – and the longer the hedge horizon, the more valuable the flexibility offered by options becomes.

The bottom line is that when it comes to choosing between hedging with forwards and hedging with options, forwards lock in a specific FX rate. Yet, it is important to note that options turned in the better performance over this time period, as they were able to capture the market's upside.



An option premium of 4 or 5 percent may seem like a significant outlay for a one-year hedge – until it is compared to how much it can cost to settle a forward contract at maturity.



Options resulted in the better performance over this time period, as they were able to capture the market's upside.

The final step: Determine the program's success

There is a common misconception in hedging that the only good hedge is one that results in a realized gain. We urge you not to fall into this trap. It is not unusual for treasury teams to be challenged by their management after money is lost on a specific hedge. Such reactive behavior has been known to lead to the cancellation of a hedging program at the bottom of a market or even worse an attempt to trade the firm's way out of a loss. A better approach is to evaluate the effectiveness of a hedge against the gain or loss on the underlying exposure.

While it is desirable to benchmark against an ideal hedge program, most companies do not have the time or resources to complete this analysis. So how do you recognize a successful hedge program? We suggest the following be used as a benchmark:

- **BALANCE SHEET HEDGING PROGRAM** – Meetings are no longer needed at your company to discuss outsized, unexpected results in the “Other FX Gain/Losses” line item of the Income Statement.
- **FORECAST RISK PROGRAM** – Your CEO and CFO can read about a weaker USD in *The Wall Street Journal* and know that your company's overall budget has been positively (as an exporter) or negatively (as an importer) affected by less than the overall market volatility.
- **NET INVESTMENT PROGRAM** – The consolidated USD value of cash (which may be “trapped” in foreign subsidiaries) has remained stable despite volatility in FX rates.

Comparison of any gain or loss on a hedge to the loss or gain on the underlying exposure provides a good measure of the hedge's success.

CONCLUSION

As more and more U.S. companies pursue overseas business opportunities, their need for a well-managed FX risk management policy increases. Such a policy can protect both the bottom line and the continued strength of the balance sheet that supports it.

A well-designed FX policy will clearly define the procedures and goals of the risk management program. It will also include:

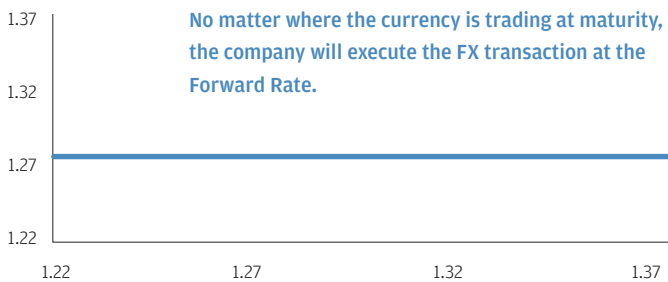
- A list of approved traders
- Allowable hedge products
- Expected frequency of trading
- The amount of discretion that will be permitted

When a company has a well-documented FX policy, its management team can focus on the pursuit of new opportunities for global expansion. This can be done without undue concern over how previous cross-border dealings may inhibit the company's financial capacity for such new pursuits.

STANDARD HEDGING TOOLS

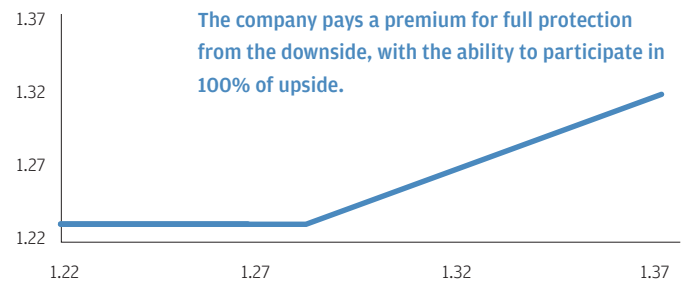
FORWARDS

- Allows a company to lock in a fixed exchange rate for a specific future date
- Provides 100 percent protection against negative currency moves, but does not allow for the opportunity to benefit from favorable moves
- No outright transaction cost or upfront USD payment required
- Credit or cash collateral may be required



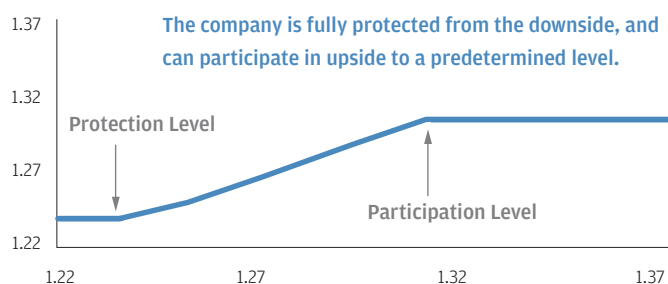
PLAIN VANILLA PURCHASED OPTIONS

- Purchased options provide the company with the right, but NOT the obligation, to exchange a specified amount of currency on a specific date at a predetermined rate known as the strike price
- In exchange for this right, the company pays a premium (upfront or deferred)
- Purchased plain vanilla options differ from forward contracts in that the company is NOT locked into an exchange rate and can thus participate in 100 percent of all favorable market movements
- If the company pays an upfront premium for this right, credit or cash collateral is not required



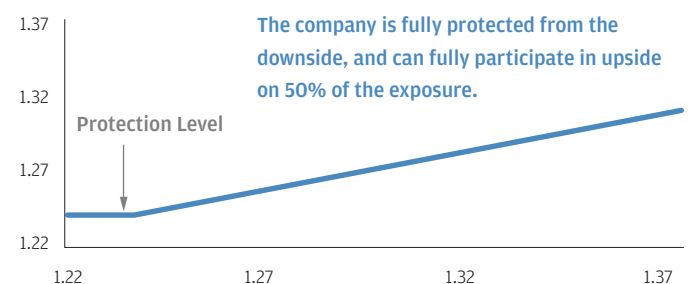
ZERO-PREMIUM COLLARS

- Zero-premium option based strategy
- Provides protection against adverse currency fluctuations, while allowing for participation in favorable moves up to a predetermined participation level
- Ability to execute better than the current forward rate if the market permits
- Flexibility in setting range for protection and participation
- Best-case and worst-case scenarios are known upfront
- Credit or cash collateral may be required



ZERO-PREMIUM PARTICIPATING FORWARD

- Zero-premium option based strategy
- Like a plain vanilla forward, provides protection against adverse currency moves at a given rate, yet allows for flexibility to participate in favorable moves on a portion of the exposure
- The company gives up some participation in profit for the benefit of being fully hedged
- The company has flexibility in setting the level of protection and/or the percentage of participation
- Worst-case scenario known upfront
- Credit or cash collateral may be required



GLOSSARY OF TERMS

Base currency: Foreign exchange is quoted as the number of units of one currency needed to buy or sell one unit of another currency. The currency whose value is set at 1.00 is the base currency.

Call option: The right but not the obligation to buy a fixed amount of a particular currency at a predetermined strike rate. The purchaser (holder) of a call option has the right to buy currency at the predetermined strike rate. The seller (writer) of a call option has the obligation to sell currency at the predetermined strike rate if the option is exercised.

Confirmation: A communication with the counterparty of a trade that details the relevant data for settlement of the trade. Common types of confirmation include: electronic (e-mail or over a system), verbal (phone), mail (letter, memo), or fax.

Currency appreciation: A rise in the value of one currency in relation to another.

Deal date: The date on which two or more parties enter into a contract. The deal date is also referred to as the contract date or trade date.

Expiry (date): The last date or only date on which an option can be exercised.

Forward: Actual exchange of currencies where settlement takes place more than two days after the trade at a fixed rate. The forward price is comprised of the spot rate plus the forward points.

Forward points: Points calculated from the interest rate differential between two currencies, which is added to or subtracted from the spot rate. Forward points compensate the buyer of a higher-yielding currency so that there is no economic difference between buying the foreign currency forward vs. buying the foreign currency spot and putting it on deposit.

FX swap: Spot foreign exchange transaction simultaneously reversed by a forward contract. The difference in rates reflects interest rate differentials between the two currencies.

Hedge: The forward sale or purchase of a foreign currency (or the execution of an option strategy) to reduce the exchange risk exposure connected with the assets or liabilities (or forecasted transactions) denominated in a foreign currency.

Mark to market: To calculate the fair value of a derivative instrument based on the current market rates or prices of the underlying exposure.

Maturity date: The settlement date or delivery date agreed upon for a forward contract.

Non-deliverable forwards (NDFs): Synthetic forwards that entail no exchange of emerging markets currencies at maturity. NDFs exist due to tight currency controls from government regulations. The settlement occurs in U.S. dollars and is based on the difference between the agreed contract rate and the market reference rate at maturity.

Put option: The right but not the obligation to sell a fixed amount of a particular currency at a predetermined strike rate. The purchaser (holder) of a put option has the right to sell currency at the predetermined strike rate. The seller (writer) of a put option has the obligation to buy currency at the predetermined strike rate if the option is exercised.

Settlement date: The date on which currency is exchanged or delivered, or on which a contract settles (also called value date).

Spot trade: Actual exchange of currencies where settlement takes place two days after the trade date. (In Canada, spot trades settle one day after the trade date.)

Volatility: A measure of uncertainty. The higher the uncertainty is, the higher the price of an option.

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