THE HEDGE TENOR DILEMMA

DIDIER HIRIGOYEN OF CITIFX CORPORATE RISK ADVISORY GETS TO GRIPS WITH MULTI-YEAR ADVERSE CURRENCY TRENDS AND WEIGHS UP THE PROS AND CONS OF HEDGING TENORS.

While companies have become increasingly knowledgeable about currency risk management, many still struggle with the problem of strategic hedging. More specifically, multi-year adverse trends remain a key issue, creating undesirable volatility in companies' performance, as well as decreasing results in their reporting currency.

Equity analysts' attention to year-on-year comparison of quarterly performance has often led risk managers to hedge out to one year, with some level of variability depending on the size of the company, their ability to accurately forecast future earnings as well as the flexibility of their internal policy. In rare cases, hedges are extended out to three or even four years, but this seems to be more the exception than the rule. This tenor question in itself is significant, especially in multi-year adverse currency trends such as the one experienced by US companies with the steady decline of the euro between 1995 and 2001.

In this article, we will try to more accurately quantify the impact of the constant depreciation of currencies versus the US dollar on a company's absolute results, while weighing the benefits, or lack thereof, of various hedging tenors. We will also show that hedging absolute dollar results may not be a realistic goal and that managing the volatility of the year-on-year performance on a regular basis is not only more attainable but should be the ultimate objective.

In the light of the findings, we propose hedging a different benchmark than year-over-year translation to significantly reduce the volatility of dollar results. Note that, while this article's methodology rests on a US dollar-based reasoning, a similar rationale can be used for any company that needs to consolidate foreign earnings back into its base currency.

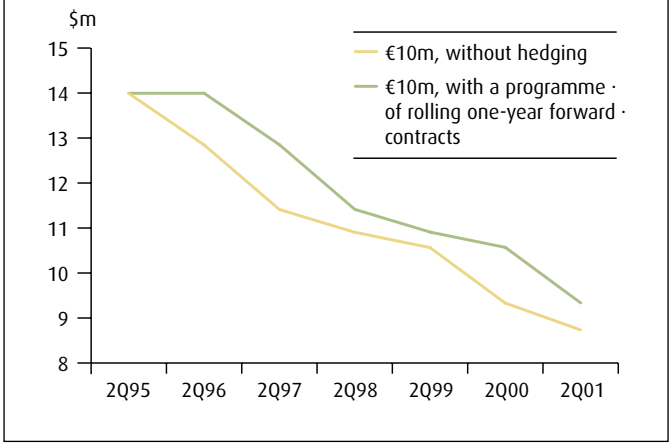
DEPRECIATION. While the recent depreciation of the dollar is finally offering North American hedgers the opportunity to breathe more easily, they have over the past few years suffered the awe of a steady strengthening of their consolidation currency. The yellow line in *Figure 1* shows how, in absence of any hedging programme, the dollar value of €10m of second quarter calendar year earnings would have steadily eroded between 1995 and 2001.

Cumulatively, such depreciation would have amounted to 37% of the original dollar earnings, a situation that has significant consequences, not only from a Wall Street and a shareholders' perspective but also for, and not limited to, a company's ability to allocate funding resources internally. For example, should the US parent repatriate subsidiaries' foreign earnings to invest in areas such as research and development (R&D), a serious shortfall in funding may ensue. Potentially, this could compromise the competitive development of the company, or force it to take on short-term debt to fund these type of needs. While the mean reversion of major currencies is not truly a challenged concept over the long run, multi-year trending periods do occur that have direct consequences on a company's ability to cope with timely business pressures. Hedging therefore may be mandatory, at least in certain sectors where predictability of cash resources is vital.

With this in mind, we investigated how hedging €10m of second-quarter earnings results back into dollars with a programme of rolling one-year forward contracts would have performed since the beginning of 1995. The green line in *Figure 1* demonstrates that, rather than completely offsetting the depreciation risk, this approach only postponed it by one year.

While the results of the second quarter in 1995 would have been maintained in the second quarter of 1996, dollar results would have eventually deteriorated in the following years. Furthermore, this short-

FIGURE 1
EROSION OF VALUE WITH AND WITHOUT HEDGING.



lived relief would have been achieved only through the benefits of the financial hedge. This has a major consequence in the long run: once a company has started hedging, its performance is no longer assessed solely on the results of its core business, but also on its ability to generate returns through financial instruments.

DETERMINING TRENDS. Whether voluntarily or not, analysts incorporate all hedging effects in their year-on-year comparison of a company's performance. Therefore, in a multi-year adverse currency trend, the challenge becomes matching the best year in dollar terms (the first year), a goal that a one-year program will never attain. In fact, only a tenor long enough to outlast the trend would permit one to achieve such a performance. To try to quantify what this means in the real world, we looked at the year-on-year change in the quarterly value of various currencies versus the dollar since 1989 (*Figure 2* displays these changes for the €/$ pair).

We then attempted to measure how long the foreign currencies' weakening trends (as defined by at least two consecutive periods of depreciation) tend to last. This was to give us an idea of how far out one must hedge to outlast most of them and whether such a hedge horizon makes sense under corporate standards and constraints. *Table 1* thereafter summarises our findings by currency pair. On the back of these, we can highlight the following observations:

- except for $/C$, 70% of weakening currency trends, over the past 11 years, lasted less than three years;
- although, over that period, the average year-on-year return was close to zero, the standard deviation was as high as 11% in the case of the Japanese yen, a situation certainly difficult to bear for most companies; and
- the average negative impact of foreign exchange on a US dollar consolidated company from the beginning of these trends to their end was far from immaterial, with as much as 22% average depreciation in the case of the yen and 18% in both Australian dollars and euros.

Even if one had been insightful enough to predict how long each of these trends was going to last, the first corrective year only allowed one, on average, to recover 35% of the ground lost during the whole adverse trend. In fact, several years may have passed before all losses are recovered. Consequently, losses would have still been incurred as a result of the insufficient amount of correction observed during the first corrective year. Another important point is that one would have needed to implement a strip of multi-year hedges going out to *n* years (*n* being the optimal number of years necessary to outlast the trend) in order to protect all interim performances. This can be a cumbersome and expensive solution, mostly when using options, the most appropriate instruments when hedging beyond one year, and we are not even talking about emerging market situations.

SHORTCOMINGS. In summary, such an approach really attempts to hedge the best dollar results of foreign investments over a certain period of time. This is neither a realistic nor a sustainable goal over time. The only approach that would offer such an opportunity would be to issue long-term debt in foreign currency to match the net present value of the future cashflows of the foreign subsidiary. Unfortunately, this solution, although attractive from an economic standpoint, may have some major accounting shortcomings that are difficult to deal with.

To find an acceptable solution to this problem, one could look at it from a different angle. This starts with the observation that hedging a volatile benchmark is a challenging task. Adopting a less volatile one would make it easier for companies to achieve what is generally their goal: making a specific quarter look as similar as possible as the same year-earlier quarter, and this on an ongoing basis. An averaging methodology would here be extremely useful. As averages are generally less volatile than series of individual observation points, so will the hedging benefits, so reducing the overall volatility of the benchmark itself. Therefore, rather than, for example, trying to hedge 2QX4 versus 2QX3, one may want to hedge 2QX4 versus the average performance of 2QX1, X2 and X3. *Table 1* shows how the volatility of the average value of the euro versus the dollar is well correlated with the length of the averaging period. In this specific case, hedging the fourth quarter of each year versus the average of the four quarter of the previous two years would have already reduced the volatility (as

FIGURE 2
IMPACT OF Y-o-Y QUARTERLY IMPACT OF THE EURO ON A USD CONSOLIDATED ENTITY.

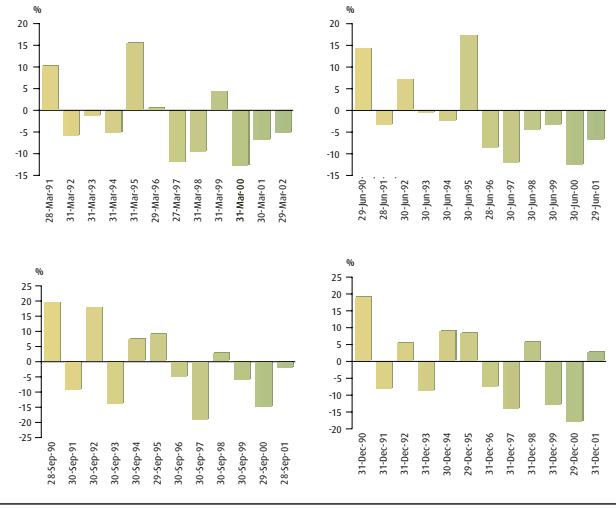


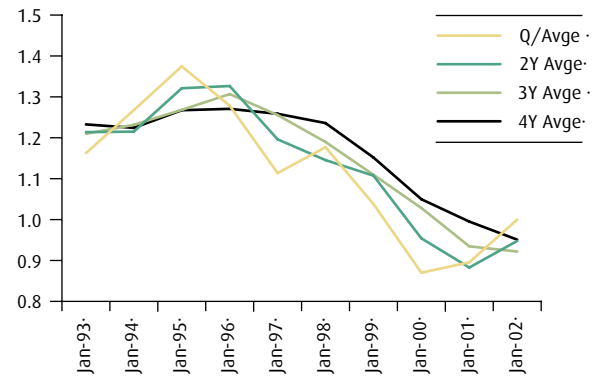
TABLE 1
VOLATILITY OF THE AVERAGE VALUE OF THE EURO VERSUS THE DOLLAR.

	Avge adverse trend duration in no. of years	Standard deviation of duration in no. of years	Avge Y-o-Y P/L for the last 11 years	STDEV. of P/L for the last 11 years	Avge negative P/L from trend opening level	STDEV. of negative P/L	1st corrective year avge recovery
EUR/USD	2	1.1	-1.4%	10.1%	-17.8%	12.0%	8.2%
USD/JPY	2	0.9	1.0%	11.3%	-22.2%	10.8%	10.8%
AUD/USD	2	0.8	-3.5%	8.3%	-18.6%	10.3%	5.8%
USD/CAD	3	1.0	-2.2%	3.8%	-12.8%	5.7%	2.2%

expressed through the standard deviation) of the euro performance of a company in dollar terms by one third.

Hedging that quarter versus the average of the previous three years would have reduced it by more than half. In general, whatever the currency may be, the longer the average, the lower the volatility of the reference rate, so the smoother the results over time. These results also point out that using a three-year averaging technique would have allowed one to reduce the largest year-on-year drop in the dollar value of euro results to 9%, versus almost 18% with a year-on-year hedging programme and close to 15% using a two-year averaging method. This smoothing effect is even better illustrated by *Figure 3*, where the steepness of the weakening euro slope further decreases as the averaging period increases. While the depreciation of the euro results in dollar terms would have still occurred, extreme changes would have been avoided and the overall losses incurred between the beginning of the trend and its end would have been reduced (the four-year averaging process, as shown by the dark line on *Figure 3,* offers the greatest benefits). Such a solution, however, needs to be implemented on a rolling basis to achieve a satisfactory and consistent outcome.

FIGURE 3
THE FOUR-YEAR AVERAGING PROCESS.



While one may think that this is a difficult task, average based instruments exist that allow one to meet the stringent requirements of foreign exchange hedging in the corporate world. In this instance, double average forwards or options are the perfect tools for this type of a programme. The choice between either of these instruments must obviously be driven by several parameters, such as the reliability of earnings forecasts, the company's competitive environment as well as cash availability. Note also that since neither the strike nor the forward rate is known at inception, the sensitivity of these products to spot moves remains limited until the observations are all compiled. This is a bonus when hedging flows that may not be eligible for hedge accounting treatment under either SFAS 133 or IAS 39.

KEEPING RISK AT BAY. Managing long-term foreign exchange risk has been a major concern for companies that depend on stability of reporting currency results to meet business requirements. In the best of cases, risk managers have addressed the problem by extending the hedge horizon, often layering in to address the issue of forecasting accuracy several years out. This article demonstrated that lengthening the tenor of the hedge generally fails to neutralise the risk but barely modifies or displaces it. Furthermore, this approach does not satisfactorily reduce the volatility of results, as the benchmark itself is volatile. As an alternative to this traditional solution we propose to adopt the average performance over multiple periods as the benchmark of choice, as well as average based instruments to hedge it. Doing so would have notably reduced the effect of sustained adverse exchange rate moves in the past 10 years, as well as the overall volatility of results in the reporting currency.

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TABLE 2
IMPACT OF THE AVERAGING HORIZON ON THE VOLATILITY OF THE VALUE OF THE EURO VS THE USD.

€/$	Quarter average		Two-year average		Three-year average		Four-year average	
29 Dec 1989	1.0785							
31 Dec 1990	1.3018	18.8%	1.1902					
31 Dec 1991	1.2015	-8.0%	1.2516	5.0%	1.1939			
31 Dec 1992	1.2652	5.2%	1.2333	-1.5%	1.2562	5.1%	1.2117	
31 Dec 1993	1.1623	-8.5%	1.2138	-1.6%	1.2097	-3.8%	1.2327	1.7%
30 Dec 1994	1.2676	8.7%	1.2150	0.1%	1.2317	1.8%	1.2242	-0.7%
29 Dec 1995	1.3746	8.1%	1.3211	8.4%	1.2682	2.9%	1.2674	3.5%
31 Dec 1996	1.2784	-7.3%	1.3265	0.4%	1.3068	3.0%	1.2707	0.3%
31 Dec 1997	1.1138	-13.8%	1.1961	-10.3%	1.2556	-4.0%	1.2586	-1.0%
31 Dec 1998	1.1769	5.5%	1.1454	-4.3%	1.1897	-5.4%	1.2359	-1.8%
31 Dec 1999	1.0380	-12.6%	1.1074	-3.4%	1.1096	-7.0%	1.1518	-7.1%
29 Dec 2000	0.8701	-17.6%	0.9541	-14.9%	1.0283	-7.6%	1.0497	-9.3%
31-Dec-01	0.8955	2.9%	0.8828	-7.8%	0.9346	-9.6%	0.9951	-5.3%
31 Dec 2002	1.0001	11.0%	0.9478	7.1%	0.9219	-1.4%	0.9509	-4.5%
Average	9.6%		5.8%		4.6%		3.5%	
STDEV	10.7%		7.3%		4.5%		4.0%	