

## Best Practice Use of Derivatives in Corporate Treasury

It is interesting that within the general financial community there still exists an innuendo associated with the word “Derivative”. The word continues to conjure up memories of Metallgesellschaft, Orange County, Barings, Sumitomo, AllFirst and others, in a way that implies that “Derivatives” were at fault, rather than there being a question of unauthorised trading. However, the underlying question of control remains a critical issue for any company or institution using derivatives. This article considers best practice in the use of derivatives from a corporate treasury risk management perspective.

### Current Environment

There have been significant developments in the environment surrounding the use of derivatives, especially in the areas of accounting, governance and productization. We need to understand this environment before considering best practice in use of derivatives

**Accounting:** FAS 133 and its amendments provide a framework for accounting for derivative instruments and hedging activities, which is being closely followed by the introduction of IAS39 from January 2005. Aimed at creating transparency to the value of assets and liabilities on companies’ balance sheets and income statements, the standards also result in restricting the ability of companies to effectively manage certain types of risks (such as foreign currency earnings) on the one hand, whilst also ensuring that all transactions are well documented and justified. So, the accounting standards certainly have improved the control exercised over derivatives transactions, but in some cases at the expense of business and financial risk management.

**Governance:** The Sarbanes Oxley Act of 2002 in the US, governance guidance in the UK under Turnbull, Cadbury, Greenbury, Higgs, Smith et al. and company’s legislation provide a regulatory and guidance framework for best practice corporate control. The CEO/CFO certification requirements under SOX in particular have brought governance and control into the board room, resulting in an executive focus on internal decision making, controls, processes, procedures, information and disclosure. Consequently, in many cases the drive for improvement in the control environment has come from the top, whilst in many board rooms there remains a knowledge gap about derivatives themselves.

**Productization:** Derivative combinations are increasingly being sold by financial institutions as single solution and individually named products. Therefore, companies are now more easily exposed to “exotic” type options, sometimes without their full understanding and appreciation.

We will refer back to these items throughout this article.

### Derivative Categorization

What is a derivative? – there are 4 paragraphs (6-9) dedicated to defining what a Derivative Instrument is in FAS 133, and a further 2 paragraphs (10-11) defining what they’re not, so there’s no point in repeating all of that here! However, from a practical perspective there is a need to be able to differentiate between different types of derivatives. Vanilla and Exotic classifications are not adequate terms to provide the Treasurer with a context within which derivatives can be considered. The following three categories are suggested for guidance in the corporate treasury area:

<i>Category</i>	<i>Definition</i>	<i>Examples</i>
Standard derivatives	Single financial instruments that are used to hedge a recognised underlying financial exposure	Forward foreign currency contracts; interest rate swaps and FRA's; purchase of a single option put /call /cap /floor; cross currency swaps (most);
Combination derivatives	A productized structured derivative used to hedge a recognised underlying financial exposure	Barrier options; cylinders and collars; yield enhancement investment products;
Non-standard derivatives	A derivative associated with commercial exposures and contracts and anything that does not fall into the previous two categories	Embedded options; weather derivatives; hybrid specific structures; credit derivatives; any single sided written option;

### Standard Derivatives

The use of standard derivatives should be straight forward from a treasury perspective. They would be board approved financial instruments, used within approved treasury policy provisions and framework, used to hedge committed or forecast underlying exposures, where hedge accounting, if elected, is achievable under FAS133/IAS39 (once documentation and effectiveness testing provisions are complied with). The process (approval, authorization, dealing, recording, funds transfer, settlement, accounting, documentation and reporting) for using standard derivatives should be mechanical within treasury, with the main focus of attention on the strategic decision to hedge or not to hedge (within treasury policy guidelines). Accordingly, there should be a high level of comfort with the use of standard derivatives that they meet with the accounting and compliance standards operating in the company.

### Combination Derivatives

Combination Derivatives should operate in the same way as standard derivatives, with one important difference. The company (buyer of the product) must clearly understand the risk/reward profile of the product and must be able to break the combination down into its constituent parts. Let's look at an example.

Many financial institutions are currently offering the following product, all using different names (e.g. Forward Extra, Conditional Forward, Knock-in Forward, Shark Fin):

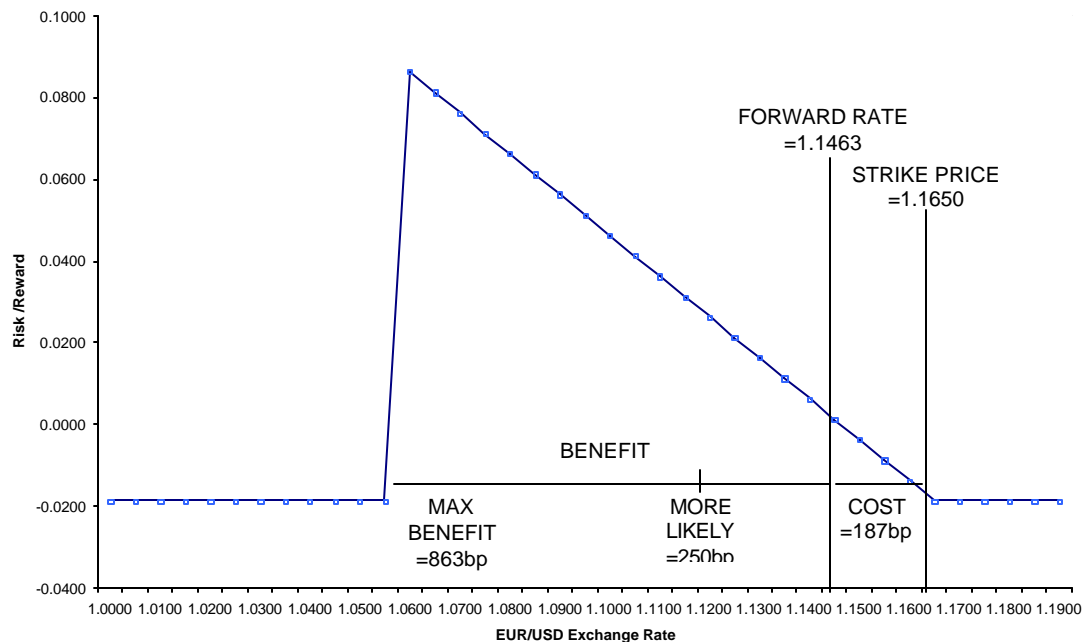
**Exposure:** A USD based company has a EUR 10 million payable (short EUR) in 3 months time.

**Foreign currency rates:** EUR/USD spot = 1.1492; EUR/USD 3 month forward = 1.1463.

**Structure:** On maturity (expiry) the company has the right to buy EUR for USD at a rate of EUR/USD 1.1650. In the event that spot EUR/USD ever trades at or below EUR/USD 1.0600, the company's right to buy EUR becomes an obligation at the strike price.

**Offering:** The product is often sold on the basis of securing a worse case outturn at a cost of the difference between the strike price and the forward outright rate (187bp), whilst being able to take advantage of a weaker EUR up to a minimum amount (863bp)- see **Figure 1**.

Figure 1



**Comments on offering:** A number of points are noteworthy:

1. The presentation of the possible benefit of 863bp for a cost of 187bp is one sided. This infers that the ratio between cost and return of 4.6 times is one dimensional, but this is not the case since the probability of the cost is 100%, whilst the probability of the return is based on a normal distribution curve. This means that the more likely reward profile is closer to 250bp compared to the cost of 187bp. The risk reward profile, or a cost/return ratio of 1.3 times, doesn't appear as attractive when presented like this.
2. The constituent parts of the product are:
  - the company buys a EUR call USD put at EUR/USD 1.1650 (premium cost = 1.52%).
  - the company sells a EUR put USD call at EUR/USD 1.1650 with a knock-in rate at EUR/USD 1.0600 (premium income = 1.52%).
3. The thinking behind entering into such a transaction needs consideration. This product is not a straight option – it doesn't manage competitive risks and doesn't offer upside potential without a price. It has the net characteristics of an enhanced forward contract rather than an option. Therefore, it is best used instead of a "vanilla" forward contract where a decision to hedge has already been made, thereby providing scope to give up some of the return for a potential higher benefit.

This is a simple example of a combination derivative. Some barrier option combinations are also used to offer double knock-in opportunities and other enhancements whilst partial participation and zero cost structures are used to reduce the premium cost. One confusing aspect of combination derivatives is the penchant for using "Forward" as part of the product title. Whilst the example described above is essentially an enhanced forward structure, certain combinations do not offer unlimited risk protected, rather, there are residual risks that need to be clearly appreciated.

Once individual combination derivatives are fully understood, monitored and reported, then they can operate in a more mechanical mode, as with standard derivatives.

### **Non Standard Derivatives**

There are three aspects to non standard derivatives that are of particular importance.

Firstly, the underlying risk needs to be clearly established and identified which can often be more difficult than it appears; for example an embedded derivative in a commercial contract - under FAS133, it must be separated from the host contract and accounted for as a derivative instrument. A further example of a non-standard derivative that needs mention are credit derivatives which offer the ability to hedge credit exposures. Whilst credit derivatives are mainly the purview of the banking and insurance industries, the British Banker's Association expects this market to double in size by 2004 from 2002 volumes to in excess of £4 trillion (\$6.6 trillion). Credit derivatives are subject to FAS133 if they provide for payments to be made in response to an underlying position (for example, a decrease in a specified debtor's creditworthiness).

Secondly, non standard derivatives are often illiquid financial instruments resulting in complicated structuring and pricing.

Thirdly, FAS133 and IAS39 can have significant impact on the use of non standard derivatives, since fair value accounting is often applied to this category of derivatives, resulting in possible income statement volatility. The accounting standards may impact on the take up of this category of derivatives by corporate treasuries.

Non standard derivatives also have their own control challenges. Identification can be difficult since the risk often arises in areas outside of the direct control of treasury (e.g. commercial sales contracts). Often non standard derivatives do not appear on the policy approved list of financial instruments, since they are usually used for non-repetitive exposures. Accordingly, individual Board approval should be required. Finally, stripping out the cash flows and understanding the pricing can be complicated.

The analysis, approval, monitoring and reporting process should be extremely onerous for all derivatives in the non-standard category.

### **Control Framework and Best Practice**

Best practice for derivatives should fall into and align with a broader best practice control environment for treasury management generally, the key components being:

#### ***Treasury Policy***

Treasury policy regulates how treasury activities and operations are conducted and how treasury risks are managed, so that management of the company, the Board of Directors and shareholders can have comfort that this sensitive and high risk business area is properly controlled. The policy should recognise that financial derivatives are necessary tools in managing the company's treasury risks, but because of their nature it is necessary that a rigid policy and effective controls apply to their use. It should set out the company's objectives and provisions for the use of derivatives including a list of approved instruments and also the company's position in relation to speculative trading.

### ***Exposure Identification***

A formal structured approach to identifying exposures should be in place. This must ensure that areas outside of treasury direct control are covered so that all risks throughout the organisation are recognised and communicated appropriately.

### ***Exposure Measurement***

A formal approach to measuring the exposures identified should be in place which incorporates data inputs, timing and frequency, measurement tools, stress testing and scenario analysis. This should be linked to the need to undertake fair value calculations and effectiveness testing under FAS133 and IAS39.

### ***Strategy Decision Making***

Specifically, derivatives should only be permitted where the pricing, structure and any residual risks are fully understood and where cost is fully justified. This should include the ability to understand the constituent parts of all derivative transactions.

### ***Transaction Execution***

Unauthorised trading has been the main reason for difficulties with the image of derivatives in the past. Standard transaction execution procedures must apply and rigorously maintained.

### ***Transaction Settlement and Confirmation***

Whilst segregation of duties between back and front office activities are standard requirements in all treasuries, it is not sufficient that back office settlement and confirmation is just a “tick-the-box” exercise. It should also involve an understanding of the underlying transaction and a verification of the transaction details and rationale itself. Indeed, the Ludwig Report (concerning currency trading losses at AllFirst Bank, 2002) stated that “a process should be developed such that all transactions can be checked by back office for reasonableness of market price and economic rationale”. A further issue is that transaction revaluations should be undertaken by the mid or back office function rather than by front office.

### ***Treasury Reporting and Performance***

Besides standard reporting requirements, treasury reporting for derivatives should include a performance management component that links the derivative transaction to the business decision, sets a benchmark or targeted performance outcome and measures the outcome against the benchmark.

### ***Conclusions***

The message is clear about using derivatives and needs to be repeated – clear understanding of risk, reward and product parts – if you don’t understand it, don’t touch it.

Derivatives should operate within approved treasury policy and a best practice treasury control environment. This is in line with corporate governance compliance and regulatory requirements.

Standard derivatives should be easy to operate within a treasury structure, compared to combination derivatives which need a detailed level of understanding. An onerous structure for approval, analysis, monitoring and reporting should apply to non standard derivatives.

The accounting framework now greatly dictates what derivatives can and cannot be used for and forces companies to understand the instrument through fair value and effectiveness testing requirements.

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