Types of structured equity products

Peter Green
Jeremy Jennings-Mares
Morrison & Foerster LLP

1. Overview of structured equity products

Providing a precise definition of what constitutes a structured equity product is difficult. Indeed, there are probably almost as many definitions for structured equity products as there are products themselves. This chapter looks at the more common types of equity structured products and considers some of the legal, regulatory and documentary issues that should be borne in mind when structuring them.

The structured equity products market has expanded significantly in recent years and indications are that this trend is likely to continue. It is difficult to provide precise figures as to the growth in the volume or value of such transactions, in part because of the lack of a precise definition of what constitutes a structured equity product. However, it is likely that the trend closely reflects the increase in the volume of equity derivative transactions in recent years. The nature of structured equity products, particularly in the retail sector, can vary significantly in different geographical markets and the wrapper used to package the product will often reflect the historical preferences of investors in these jurisdictions. As we will see, recent developments, including the European Union (EU)'s Financial Services Action Plan, have enhanced the scope for products being issued into multiple markets, particularly within the European Economic Area (EEA).

The preceding chapters have looked at the types of bilateral over-the-counter (OTC) equity derivatives contracts which are common in the financial markets. These arrangements are flexible, can relate to a number of underlying equity securities, indices or other equity instruments and can involve a high degree of complexity. Although exchange-traded derivatives are becoming more common and are frequently traded on such exchanges as Euronext's LIFFE exchange and the Chicago Mercantile Exchange (principally a commodities exchange), these bilateral contracts tend to be illiquid by nature. This is particularly the case for the more complex instruments.

Even if a bilateral derivative contract contemplates the possibility of the assignment of rights or the novation of the rights and obligations under the contract, an assignment or novation may not be straightforward and can be complicated by jurisdictional and taxation issues where the parties are located in different jurisdictions. The terms of the assignment or novation, in addition to the price to be paid or received for the transfer of the contract, will often be the subject of some negotiation at the time. Where one of the parties to the contract is an individual, issues such as the treatment of the contract on the death or bankruptcy of the individual can cause particular difficulties.
This chapter focuses on structured equity products that are designed to be transferable instruments and which sometimes embed equity derivatives technology with additional financial features. Investors will therefore obtain a synthetic exposure to the risk and/or reward in one or more underlying shares, fund units, equity or fund indices or other equity investments. As is explored further below, although an equity structured product may be designed to be transferable, a lack of liquidity can make transfer difficult in practice. These products tend to be designed for a limited class of investors, sometimes even a single investor. Tax or regulatory issues may also make it difficult for secondary transfers of the instrument to be made to investors in other jurisdictions. Despite such potential difficulties, a secondary market can and frequently does exist for certain types of instrument, particularly those embedding relatively straightforward derivative instruments.

An important feature of embedding a structured product transaction into a transferable security is that the investment is fully funded at the outset of the transaction by payment of the issue price. The investor will therefore not have any additional actual or contingent liabilities as would be usual in a bilateral derivatives contract, but it may be at risk of losing all or part of its original investment. As will be explored below, depending upon the precise nature of the structure, features can be built into the transaction to reduce this risk and many structured equity products are designed with principal protection so that the investor will at least be entitled to receive its original investment back on maturity. The granting of collateral or security by the issuer in favour of the investors, or a trustee or agent on their behalf, can also be used to reduce the exposure of an investor in a structured equity product and limit the access of third-party creditors of the issuer to the assets underlying the structured product.

2. The wrapper

The legal structure within which a structured product is sold to the investor is typically referred to as a wrapper. The nature of the wrapper will depend upon a number of factors including:

- cost and speed of issuance;
- the liquidity of the instrument (ie the ability to transfer it in the secondary market);
- tax treatment;
- regulatory treatment; and
- investor requirements.

The most common forms of wrapper are transferable securities (usually notes or bonds) and units in a fund. These and other wrapper structures are considered below.

In many cases, a structured equity product will be issued by a bespoke (or special purpose) vehicle (such as a company, limited partnership or a fund) which is set up specifically for the purpose of issuing the instrument. For a brief description of the key features of an SPV, see the table below. The SPV will generally not undertake any activities other than the raising of money by the issuance of the relevant structured products and ancillary transactions. It will usually have no assets other than the
underlying investments or contracts backing the structured product. To ensure that the transaction has the necessary credit rating, it may be necessary for the transaction arranger or a third party to provide liquidity or credit enhancement to the SPV. Such support is often provided through a total return swap or similar derivative entered into between the SPV or such party or a more straightforward guarantee arrangement. Investors in the structured product will often be given a security interest in such arrangements.

Because an SPV issuer does not trade or undertake any activities other than those related to structured product issuance, it should not incur debts or liabilities to creditors other than the holders of the structured product and related parties, such as paying agents and custodians and possibly the tax authorities in the jurisdiction from which it operates. Such an arrangement helps to make the product bankruptcy remote, since there should be no external creditors who could be in a position to petition for the SPV's bankruptcy. If it is intended that the SPV will make multiple issuances, it is important that it is able to ring-fence the assets and liabilities related to each issuance separately. This can often be done by giving the holders of a particular issuance security over the assets related to that issuance and the holders agreeing that they have no rights or claims against the issuer beyond the value of the assets over which they have security, and also that they have no right to petition for the insolvency or liquidation of the SPV. Alternatively, a number of jurisdictions have enacted legislation enabling the establishment of cell companies. Under such legislation, a corporate entity can issue shares or securities forming separate cells of the entity and the assets relating to that particular cell are automatically ring-fenced from creditors of the issuer related to debt or equity issuances by other cells of the same company. Jurisdictions which have enacted such cell or segregated company legislation include Delaware, the Cayman Islands, Jersey, Guernsey and the British Virgin Islands.

Benefits of issuing via an SPV

**Tax**

By issuing through an SPV located in an appropriate jurisdiction, the transaction arranger can make the issuance structure more tax-efficient. For instance, if the SPV is located in, say, the Netherlands or the Cayman Islands, payments of interest by the issuer should not be subject to any withholding tax imposed in the issuer's jurisdiction, thus avoiding the deduction that might have been required by the laws of the transaction arranger's jurisdiction if it had issued the structured product directly. In addition, the SPV can be structured so that in on-lending to its parent, the returns it receives from that on-loan are offset by the payments it makes on the

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1 Delaware Limited Liability Company Act, as amended (series limited liability company).
2 Cayman Islands Segregated Portfolio Company Law 1998, as amended (segregated portfolio company).
3 Companies (Jersey) Law 1991 (Amendment No 8) (protected cell company or incorporated cell company).
4 Guernsey Protected Cell Companies Ordinance 1997, as amended (protected cell company).
5 BVI Business Companies Act 2004, as amended (segregated portfolio company).
structured product, thereby limiting the vehicle’s taxable profit and minimising its corporate tax liabilities.

**Off-balance sheet**

The SPV can be structured as an orphan (ie it is not a subsidiary of the transaction originator and its shares are held by a non-group entity, such as a charitable trust). Therefore, the assets and liabilities are not consolidated with those of the transaction originator from an accounting standpoint. This can greatly simplify administration and management of the finance function.

**Ratings**

A further benefit of using an SPV to make the issuance is that, where a credit rating of the structured product is required by investors, the rating agency can rate the instrument in isolation from the debt obligations of the transaction originator (assuming it does not guarantee the instrument or provide any on-balance sheet credit support) by reference to the assets of the SPV available to the SPV’s creditors.

Structured equity products are also commonly issued directly to investors by a bank or other financial institution. In this case, the issuer may seek to make the structured equity investment limited in recourse to the underlying equity securities or derivative or other financial contract, but will typically grant security over such assets in favour of the investors or an agent or trustee on their behalf.

As will be explored further, it has become increasingly common for structured products to be linked to an actively managed portfolio of underlying securities and/or indices. Whilst potentially attractive to investors as a way of enhancing returns, these structures require an investment manager to be appointed to manage the underlying portfolio. This will probably increase transaction costs considerably. In this case, transaction transparency could well be an issue as investors will often require regular information as to the performance of the portfolio so they can monitor the performance of their investment.

Products are also increasingly being developed for the needs of particular investors. Retail investors, for example, are more likely to require a principal protected investment. Products can be tailored depending on whether the target investor takes a bullish or bearish view of the market or whether the target investor considers markets will become or remain either stable or volatile. As we shall explore further, equity structured products commonly include additional features such as increased leverage from that provided by the investor with a view to obtaining enhanced returns. Not surprisingly, these structures generally expose the investor to greater risks, particularly if the product is not principal protected. Poor performance in respect of the underlying equity investment will have a magnified effect on the resulting losses suffered on the investment.

### 3. Types of equity-linked product

An equity-linked security is a note or bond that embeds an equity derivative into its terms. These might be relatively straightforward instruments but they can also be
very complex depending upon the nature of the arrangements. In each case, the payments received by the investor in respect of the security will be derived from the performance of one or more financial assets in the form of an equity security or by an index of equity securities or a basket. Where the product is linked to underlying equity securities, these may be held directly by the issuer to hedge its obligations under the structured product or the issuer may hedge its exposure to them synthetically through a derivative transaction. Where the transaction is linked to one or more indices, the issuer will typically hedge itself through a derivative, such as a future or an option on the index, or it may decide to hold some or all of the securities comprising the index.

At the more straightforward end of the spectrum, a security can be structured as a vanilla debt instrument with an embedded equity option. The figure below shows an equity call option embedded into a two-year note. In this example, the investor acquires the note for its par value. On maturity, the investor is due to receive repayment of the principal and can receive an equity coupon if the price of the underlying notional equity investment exceeds a pre-agreed amount (the strike price). No other interest or coupon is payable on the note. This equity coupon is equal to the cash settlement amount of a notional call option that could be acquired with a certain premium. The amount of this premium is roughly equal to the difference between the par value of the equity-linked security and the issue price of a low-risk zero coupon note with a redemption amount equal to the par value of the equity-linked security and the same maturity as the equity-linked security.

The investor is therefore economically in the same position as if he held a zero coupon security and acquired a cash-settled call option on the same terms as the embedded derivative. In practice, the issuer may hedge its contingent obligation to pay the equity coupon by entering into a back-to-back call option on exactly the same terms as the notional call option.
Simplified example of an equity-linked note with an embedded call option:

Option in the money
In the example above, the par value of the equity-linked security is €1,000, and the issue price of the notional zero-coupon is €930. Thus, the notional discount element is €70, enabling a notional call option to be acquired on 100 shares in XYZ plc with a strike price of €10 per share for a premium of €70. The exercise date of the option will be set to occur shortly before the maturity date of the equity-linked notes. If the notional option is in the money on the exercise date, the equity coupon on the note will equal the final value of the notional option. In the example, if the final value of the XYZ shares on the valuation date is €12, the embedded option would therefore be €200 in the money. Consequently, the holder of the equity-linked note would receive a 20% equity coupon at maturity and therefore a total final repayment of €1,200.

The upside potential of such an equity-linked note is unlimited unless a cap is built into the structure. If the underlying security, index or basket performs well, it will result in a high return to the noteholder. The downside risk (ie the risk of a negative return, or a reduction in the principal amount due to negative performance of the underlying investment) is, however, often limited by the insertion of full (as in the above example) or partial principal protection so that the noteholder should, subject to the creditworthiness of the issuer, receive all or a specified proportion of its original investment provided it holds on to it until maturity.

Simplified example of an equity-linked note with an embedded call option:

Option out of the money
Accordingly, in the above example, if the value of the XYZ shares had fallen below €10 on the valuation date, the embedded call option would be out of the money. The investor would still receive back its initial investment of €1,000, representing the zero coupon element of the transaction, if the equity-linked note is 100% principal-protected. In economic terms, this would represent an opportunity cost for the investor, as it receives no return on its investment. If the original amount subscribed for the investment had been used to acquire a low yield but safe investment (eg a government bond), this would have produced a better return. For example, an investment of €1,000 in a debt security paying compound interest of 3% per annum during the same period would have resulted in a final payment of €1,060.90.

The example set out above represents a very simple form of structured equity note. There are a vast number of variables that can be built into equity-linked products. This might include coupons being paid throughout the life of the transaction, the final return being capped or a guaranteed rate of return being built in. A participation rate can also be built in. This is the rate at which the investor participates in the appreciation of the underlying security, index or basket. Therefore, if the final valuation is 20% above the strike price and the participation rate is 50%, the investor will receive an equity-linked coupon of 10%. All of these features will have an effect on the pricing of an equity-linked product.
In recent years, structured equity products incorporating barrier options have been seen more frequently. A barrier option is one that incorporates either a knock-in or a knock-out feature whereby the embedded option is either activated (in the case of a knock-in option) or deactivated (in the case of a knock-out option) if the value of the underlying security, index or basket falls below or rises above a specified level during the life of the transaction. One product that typically embeds a barrier option and has been popular with both institutional and retail investors is the reverse convertible note. This represents a greater risk to investors than notes with an embedded call option as it is not a principal-protected product. This product is structured as an embedded put option and is granted to the issuer in return for the coupon payable on the notes. The coupon will usually be above the market yield for non-equity-linked notes of the same maturity to reflect the increased risk for the investor.

**Simplified example of a structured equity product incorporating a barrier option**
A reverse convertible note is issued with a one-year maturity having a principal amount of £1,000 and paying an annual coupon of 10%. The note is linked to the FTSE-100 share index with a knock-in level of 5,500. If the index level never falls below the knock-in level during the life of the note, or falls below this level but is 6,000 or above at maturity, the investor will receive repayment of the £1,000 principal plus the coupon of £100 at maturity. If the index falls below 5,500 on any day during the life of the note and is less then 6,000 at maturity of the note, the principal repayable to the investor will be reduced. For example, if the index is at 5,100 (ie 85% of the strike level), the investor will receive £850 of the principal (85% of the par amount of the note) plus the coupon of £100 on maturity.

<table>
<thead>
<tr>
<th>Issue date</th>
<th>Maturity date (One year after issue date)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Embedded put option on FTSE 100 share index</strong></td>
<td><strong>Payment of £1,000 par value</strong></td>
</tr>
<tr>
<td>Strike level = 6,000</td>
<td><strong>PLUS</strong></td>
</tr>
<tr>
<td>Knock-in level = 5,500</td>
<td>Payment of fixed rate coupon at 10% per annum, £100</td>
</tr>
</tbody>
</table>

\[
\text{£1000} \times \frac{\text{strike level} - \text{final level}}{\text{strike level}}
\]

if index has fallen below knock-in level

e.g. if final level is 5,100 on maturity payment is reduced by £150
In many cases, this type of reverse convertible structure will be used by the issuer to hedge itself against an exposure it already has to the underlying equity security or index. If in the above example the issuer has itself sold a put option on the FTSE-100 share index, issuing the note will enable it to fund all or part of its obligations under such option if it is out of the money on exercise. In such circumstances, its obligation to pay principal under the note is reduced. Payment of the coupon under the note is likely to be funded in whole or in part from the premium received by the issuer on the underlying investment.

The examples indicated above are relatively straightforward products. There has, however, been a growth of more complex products embedding more exotic OTC derivative transactions. Such products include the following:

3.1 **Asian structured products**
An Asian structured product is typically structured as a security with an embedded call option. The instrument operates in a similar way to the type of equity-linked note referred to above, but the equity coupon payable on maturity is based on the average price or level of the underlying equity security or index on specific averaging dates throughout the life of the transaction. The frequency of these dates can vary significantly from transaction to transaction. By referencing the final equity coupon to an average of the performance of the underlying equity security or index during the life of the transaction, the volatility risk for the investor is likely to be reduced.

3.2 **Cliquet products**
Cliquet products also help to protect investors against volatility and have therefore been popular with retail investors. The security will include an embedded call or put option as described in some of the structures above. A number of valuation dates are specified during the life of the transaction. On each valuation date, if the value of the underlying equity security or index is above the strike price in the case of an embedded call option or is below the strike price in the case of an embedded put option, the gain or loss is locked in. On maturity, all the gains or losses throughout the life of the transaction are aggregated to calculate the final equity coupon.

3.3 **Himalaya products**
A Himalaya product relates to a basket of equity securities or indices and will have a number of specific observation periods during the life of the transaction. At the end of each period, the performance of the underlying equity security or index that has performed best (by comparison with its initial valuation) is locked in (ie the value becomes fixed). The equity security or index is then removed from the basket for the purpose of future observation periods. At maturity, the investor receives the weighted average of each underlying equity security index that has been locked in during the life of the note. Again, this product is suitable for investors looking for protection from market volatility.

Products that are linked to a common index, such as the S&P500 index, the FTSE-100 index or the Eurostoxx 50 index, are known as index-linked. They are now becoming increasingly linked to less well-known indices or indices that can be tailored...
for a specific transaction. For example, a number of banks have created their own private indices linked to the performance of private equity companies. In addition, a number of indices relating to the performance of hedge funds have been developed. In 2007, the Committee of European Securities Regulators (CESR) confirmed that hedge fund indices could be recognised as financial indices under the 2007 Eligible Assets Directive (2007/16/EC)\(^6\) implementing the 1985 UCITS Directive (85/611/EEC),\(^7\) provided that certain criteria set out in its guidelines are satisfied.\(^8\) These include a requirement that index-linked products be cash settled and dealt in on a regulated market or an over-the-counter market. Additionally, the components of the index must be sufficiently diversified, the index must represent an adequate benchmark for the market to which it refers and it must be published in an appropriate manner.

Customised indices can enable investors to obtain access to products in which they could not invest directly. In addition, a number of customised indices have moved away from the traditional approach of the index being weighted by the market capitalisation of the underlying components and use what is termed a fundamental approach based on other financial factors relating to the underlying companies (e.g. turnover). There has also been an increase in so-called algorithmic indices. These are customised quantitative modelling-based indices, designed to generate greater returns for investors by using a dynamic trading strategy which determines the optimal time to extract value from a particular exposure and facilitates the switch between exposures depending on market perceptions. Whilst these private indices offer investors more flexibility and greater choice, concerns have been raised as to their transparency, particularly where they are comprised of underlying shares or securities in companies or sectors where there is a high risk correlation. These can be much more volatile than traditional indices.

4. **Types of fund-linked product**

The demand for structured products linked to the performance of shares or units in funds has greatly increased in recent years. Whilst such products have many similarities to equity-linked securities of the types referred to above, there are a number of additional issues that need to be addressed when structuring them.

Many investments in shares or units in funds are not publicly listed and may contain restrictions on transfer and redemption. Even if the shares or units in the fund are freely transferable, there may not be a liquid market in the units or shares. Obtaining a meaningful valuation of the underlying fund investment can be difficult in the case of certain funds. Valuation of the underlying fund investment will usually be based on the most recent net asset value (NAV) of the fund as calculated by the

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\(^8\) CESR's guidelines concerning eligible assets for investment by UCITS – The classification of hedge fund indices as financial indices (July 2007).
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relevant fund manager. Such valuations are generally made on a monthly basis and can quickly become out-of-date, particularly in volatile markets.

In addition, where issuer's obligations under the structured product are hedged by the direct holding of a fund share or unit by the issuer or a custodian on its behalf, the issuer's ability to make payments due to holders of the structured product will depend upon the issuer being able to redeem the fund investment, requiring a full or partial liquidation of the investments made by the underlying fund. A minimum period of notice is often required to be given to the underlying fund for the fund investor to be able to liquidate such investment and the notice may need to be given at specific times (eg the last day of the calendar month). Also, many funds provide for a certain percentage of the redemption moneys to be withheld until their audited accounts are available. These factors can cause significant delays in the issuer of a fund-linked product being able to obtain the full value of its investment in the fund units which often result in payments under the product being based on much earlier valuations of the underlying fund.

Despite the issues highlighted above, fund-linked products provide a number of potential advantages for investors. There can be legal, regulatory, tax or practical difficulties for the investor making a direct investment in the underlying fund. Certain investors, particularly pension funds or insurance companies, may be prohibited or restricted from investing directly in funds. Certain funds (including some hedge funds) include limitations on the type or size of eligible investor. It may, however, be permissible for such an investor to obtain some indirect exposure to the fund by investing in a structured product issued by another entity, particularly where full or partial principal protection is built into the product. A direct investment in the fund may also require a significant outlay of capital (a high minimum investment is often required) and it might be difficult for an investor holding a fund investment to obtain a direct hedge in relation to the investment. If the investment is funded through a structured product, it enables the issuer to pool investments from a number of investors and to build in hedging arrangements.

The figure below shows a straightforward principal-protected fund-linked note.
issuance. Here the proceeds of the note issue are invested by the issuer in a combination of (a) a zero coupon note priced to mature at the par value of the fund-linked note; and (b) a fund investment or portfolio of fund investments. Upon maturity, the investor should receive the par value of the fund-linked note (which will be paid from the redemption proceeds of the zero coupon investment) plus the value of the fund investments at that time. As an alternative to the issuer acquiring the fund assets directly, it could also enter into call options in relation to the fund assets. This structure is therefore very similar in economic terms to the equity-linked note product described above.

Whilst the above structure enables investors to obtain the benefit of any growth in the value of the portion of the structure relating to the fund investments together with an obligation on the part of the issuer (subject to its creditworthiness) to repay at least the amount of the investor’s original investment, the scope for investors receiving a significant return on the original investment is limited. This is because a significant part of the note proceeds will need to be invested in the zero coupon element of the structure to fund the principal protection. This proportion will, however, vary depending on the length of maturity of the structured product. With a view to seeking to enhance potential returns, structures involving a more dynamic management of the assets underlying the security have been devised. Such structures include constant proportion portfolio insurance (CPPI) structures.

The diagram below shows a simplified example of a CPPI structure. As with a straightforward fund-linked note of the nature set out above, the investor acquires a note from the issuer in return for payment of the issuance proceeds. The issuer, or commonly an investment manager appointed for the purpose of the transaction, then allocates the issuance proceeds between non-risky and risky assets in
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accordance with specified investment criteria. As market conditions subsequently change, the allocation between the risky and non-risky assets will similarly be varied as determined by reference to a specified algorithm. The non-risky element of the portfolio will generally comprise a combination of cash or loans (or equivalent) to, or bonds issued by, a financial institution with a high credit rating. The risky element of the portfolio may comprise a fund or a dynamic basket of funds. This aspect of the investment is intended to constitute the yield generation aspect of the security.

A typical CPPI structure does not, at least initially, involve the issue proceeds being utilised in acquiring a zero coupon investment as in a fund-linked structure of the type described above. An essential feature of such a transaction is, however, that throughout the life of the transaction a calculation is made of the difference between the aggregate value of all investments (both risky and non-risky) comprised in the actual investment portfolio and the base value (meaning the amount that would need to be invested in a notional zero coupon investment for the investor to receive back its original investment). The difference between these two amounts is referred to as the equity gap. If the size of the equity gap falls below certain specified levels, a reallocation of assets between risky and non-risky assets is necessary. If the portfolio performs badly, it may be necessary for the whole portfolio to be switched into an investment matching the profile of the notional zero coupon investment.

Example of a fund-linked CPPI transaction

In this example, Willis Investments arranged and managed a fund-linked CPPI transaction in June 2005, issuing £100 million of fund-linked notes to investors, due for redemption in 2010. To protect their principal investment, Willis calculated the amount that would be needed to invest in a notional zero coupon bond that would return £100 million in five years. This would cost £75 million (since the zero coupon bond was trading at a discount of 75% of its par value of £100 million, and therefore accreting over five years at 5% per annum) and would represent the initial ‘bond floor’.

Initial investment

Since the initial bond floor was £75 million, this left £25 million (the cushion or equity gap) to be invested in a portfolio of fund investments (£100 million – £75 million). Willis Investments did not, however, arrange for £75 million to be invested in the zero coupon bond. Instead, the deal was structured to generate a leveraged multiple of three. This meant that Willis Investments was permitted by the terms of the issuance documents to invest three times the value of the cushion, being £75 million (£25 million x 3 = £75 million), into fund investments constituting risky assets. The remaining £25 million was invested in a portfolio of low risk, fixed income investments, yielding 4% per annum (non-risky assets).

End of Year 1

After the first year, the risky assets had risen in value to provide a return of 20% on the initial investment (ie £15 million on the £75 million invested). The total value of the CPPI portfolio therefore stood at £116 million (consisting of risky assets of £90
million and non-risky assets of £26 million (£25 million plus 4% fixed coupon)). However, the hypothetical zero coupon bond, or bond floor, had now accreted by £5 million, since £80 million would now be required to purchase enough of the zero coupon bond to generate the full £100 million for redemption of the CPPI note issue. This generated a new bond floor of £80 million.

Since the bond floor was £80 million, and the portfolio as a whole was £116 million, the new cushion was £36 million (£116 million – £80 million). With a leverage factor of three, this now meant that £108 million could be invested in risky assets (£36 million x 3). £8 million was left remaining to be invested in non-risky assets.

End of Year 2
After the second year the fund investments had again made a 20% return (ie £21.6 million on £108 million invested), meaning that the risky assets were worth £129.6 million, while the non-risky assets were worth £8.3 million. The bond floor was now £85 million, the overall portfolio worth £137.9 million (risky assets of £129.6 million plus non-risky assets of £8.3 million), and therefore the cushion was £52.9 million (£137.9 million – £85 million), meaning that three times this amount (£158.7 million) could be invested in risky assets. Clearly, however, the total value of the portfolio was only £137.9 million, so 100% of the portfolio (£137.9 million) was invested in risky assets.

End of Year 3
During the third year the financial markets fell, and the portfolio made a substantial loss of 25%. Consequently, only £103.42 million remained in the portfolio. The hypothetical zero coupon bond (bond floor) had also increased to £90 million, generating a new cushion of only £13.42 million (£103.42 million – £90 million). With three times leverage, only £40.26 million was then re-invested into risky assets, while the remainder was reinvested into safer, non-risky assets (£63.16 million), demonstrating how the product operates to pull investment back into non-risky assets during falling markets.

These structures commonly include further leverage through additional funding from a financial institution in the form of loans or funding swaps enabling more assets to be included in the underlying portfolio. The provider of such additional leverage will typically rank in priority to the claims of the noteholders. Therefore, although the additional leverage potentially enhances the return received by investors, it also heightens the risk that investors will lose a significant portion of their investment if there is a rapid decline in the value of the assets comprising the portfolio.

Although the dynamic and continuing rebalancing features contained in these CPPI structures is designed to maintain a constant relationship between the risk profile of the portfolio and the portfolio value as a proportion of the bond floor – thereby ensuring that at least 100% of the par value of the bond is available upon maturity – inherent in such structures is the risk that a rapid deterioration in the
value of the assets could reduce the NAV of the entire portfolio of the issuer below the base value necessary to ensure a return of the investor’s original investment on maturity. This risk may be mitigated by the issuer purchasing insurance against such an eventuality, usually from a highly regarded financial institution with a high credit rating (the principal protection provider), which will make up any shortfall between the value of the portfolio at maturity and the amount needed to redeem the notes at such time. The agreement can be structured in a number of ways, but is often documented as the grant to the issuer by the principal protection provider of a cash-settled put option over the portfolio. The issuer will pay a premium to the principal protection provider which will increase transaction costs and potentially affect investors’ returns.

CPPI structures are attractive to both institutional and retail investors due to their potentially high returns combined with built-in capital protection. There are, however, potential downsides to these arrangements. If a fall in the value of the underlying portfolio results in a total reallocation of assets, investors are likely to find it difficult to exit from the transaction. Any early redemption provisions may be unattractive to investors, particularly if the value of the portfolio has fallen below the amount necessary to ensure investors receive back their initial investment. Any principal protection of the type referred to above will generally only activate on maturity and will not provide any protection to investors who redeem prior to this date. In these cases, the market for the notes will probably be illiquid and an investor may not be able to find a purchaser to acquire the investments at a price acceptable to it. Accordingly, investors need to be prepared to tie up their investment for a material period of time and, where the portfolio has performed badly, they may receive little or no income on their investment prior to maturity.
These potential downsides are increased by factors that may make it difficult for investors to make an informed judgment at the outset as to the expected performance of a CPPI product. Because the portfolio of risky assets is managed by an investment manager, the performance of the investment manager is crucial. As with any other product comprising a managed portfolio, if the investment manager can provide a strong alpha coefficient (i.e., a positive return when measured against a benchmark index), the investors’ returns should be good. Conversely, poor asset allocation will probably result in a poor alpha coefficient leading to depreciation in the value of the portfolio. This can result in the reallocation of assets into less risky assets, destroying the possibility of the investors receiving an attractive yield.

An investor may find it difficult to obtain enough advance information to be able to make an informed decision in relation to the likely performance of the investment manager in relation to these products. In addition, these structures are often based on technical trading or other proprietary models, some of which take years of development. Managers are generally reluctant to divulge the financial techniques underlying such models. Accordingly, investors may have limited ability to test the modelling on which the structure is based and may be limited to considering historical performance of the fund manager as its principal investment criteria.

5. Form of wrappers

5.1 Transferable securities

(a) Vanilla debt instruments (e.g., notes or bonds)

So far in this chapter, we have considered products wrapped in the form of a debt security. These are an extremely common choice of wrapper, partly because they are relatively straightforward to document and are widely understood by the investor community. Debt securities tend to be relatively easy to transfer (assuming a liquid market) and can usually be designed for the investor to hold in a tax-efficient manner, although this may depend to some extent on the legal status of the investor and, if a corporate body, the jurisdiction in which it is located and incorporated.

(b) EMTN programmes

To enable equity-linked debt securities to be issued quickly and cost-effectively with as little documentation as possible, issuance will frequently be effected pursuant to a medium-term note (MTN) programme of the issuer. Such a structure includes master programme documentation which sets out a framework set of terms and conditions, generally incorporating relevant provisions based on the 2002 ISDA Equity Derivatives Definitions, dealing with market disruption events and necessary adjustments for the underlying equity asset. The terms of each individual issue of notes are set out in relatively short documents called final terms, which cross-reference the relevant parts of the framework terms and conditions and set out the specific provisions relating to such issue including the relevant equity-linked provisions. This process can enable even relatively complex equity-linked instruments to be documented in a few pages.
5.2 Fund investments

(a) Shares or units in a fund
As an alternative to issuing equity structured products in the form of notes or bonds, an investor can acquire shares (often preference shares) or units in a fund. In economic terms the payment profile of these investments can be designed to match that of the structures outlined above. Historically, many funds established for the purpose of acting as a wrapper for structured equity products have been incorporated in low tax or tax exempt financial offshore jurisdictions (including Jersey, Guernsey, the Cayman Islands, Bermuda, the British Virgin Islands and many others). Products are increasingly structured through a UCITS scheme to facilitate their marketing and distribution within the EEA (see further below).

(b) Cell company structure
A possible drawback to using a fund investment as a wrapper is that, whilst most funds are capable of being set up reasonably quickly and cost effectively, the process is generally slower and more expensive than a debt issuance, particularly a note or bond issuance off an already established MTN programme. The costs of establishing a fund can be mitigated. For example, if multiple issuances are envisaged, costs might be reduced by establishing the vehicle through a cell company structure of the type described above. Each new issuance can therefore be made through a separate cell of the company rather than establishing a new entity for each issuance. There are still additional costs inherent in such structures (eg investors for each issuance are likely to require a legal opinion as to the effectiveness of the ring-fencing arrangements).

(c) Exchange-traded funds
Exchange-traded funds (ETFs) have become increasingly popular with investors and can be used as a wrapper for structured equity products. An ETF is essentially an investment vehicle which issues transferable fund units that are listed on an exchange and invests in assets (most commonly shares or baskets of shares). The underlying portfolios of ETFs have historically not been actively managed although recently some managed transactions have been marketed. Because ETFs are listed on a stock exchange, they offer potentially greater liquidity for investors than other fund investments. ETFs are considered in more detail in Chapter [XX].

5.3 Other forms of wrapper

(a) OTC contracts
Structured products can also be wrapped through OTC contracts, structured deposits, the issuance of trust certificates and life insurance products. As indicated above, a significant downside in structuring a product through an OTC contract is that, as a bilateral contract, such arrangements cannot be structured as an easily transferable liquid product.

(b) Structured deposits
Similar issues also apply to structured deposits which will also generally need to be
made with an authorised banking institution and cannot be easily passported into other EEA jurisdictions in the same way as a structured security or an investment in a UCITS compliant fund as described below.

(c) **Trust certificates**
Trust structures can be set up fairly quickly and the use of sub-trusts for separate issuances can provide effective ring-fencing of assets while keeping costs down. However, transaction costs, particularly trustee fees, are likely to make such arrangements more expensive compared to other structures.

(d) **Life insurance products**
We do not consider life insurance products in this chapter.

6. **Documentary issues**
In documentary terms, the types of structures described above range from relatively straightforward to extremely complex. In most cases, however, the documentation will involve the standard documentation for the appropriate wrapper, whether that be a security, fund or one of the alternatives referred to above. The principal complications usually arise when drafting the embedded derivative terms into the structure. This is typically achieved by replicating the relevant language from the ISDA definitions (in most cases either the 2002 ISDA Equity Derivatives Definitions or the 2006 ISDA Fund Derivatives Definitions, or a combination of both) that would be relevant when documenting a derivative or derivatives of the type embedded in the instrument. In many cases the relevant language is set out in full in the terms of the structured equity product, although some or all of the terms may be incorporated by reference from the relevant set of ISDA definitions.

When incorporating terms from the ISDA definitions, whether by replicating the terms of the relevant instrument or by cross-referencing the relevant ISDA terms, there are some pitfalls that the draftsperson needs to be wary of. Care should be taken, in particular, to ensure that provisions taken from the ISDA definitions relating to an adjustment of the date of any valuation of the underlying equity security or index or an adjustment to the calculation methodology of the equity-linked element does not cut across any of the provisions relating to the structured product itself.

By way of example, if the day on which any underlying equity security or index is to be valued is a Disrupted Day 9 (meaning a day on which any exchange relevant to the valuation fails to open for trading despite being a Scheduled Trading Day 10 (a day on which any relevant exchange is scheduled to open for trading) or on which a trading or exchange disruption meeting specified criteria occurs 11) for the purposes of the ISDA 2002 Equity Derivatives Definitions, the valuation date will be moved to the next Scheduled Trading Day that is not a Disrupted Day for the relevant

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9 Section 6.4 of the 2002 ISDA Equity Derivatives Definitions.
10 Section 1.31 of the 2002 ISDA Equity Derivatives Definitions.
11 Section 6.3(b) and (c) of the 2002 ISDA Equity Derivatives Definitions.
exchange. Under the fallback position in the 2002 ISDA Equity Derivatives Definitions, the valuation date might be deferred by up to eight Scheduled Trading Days in such circumstances.

When drafting an equity-linked note or other instrument, the draftsperson should ensure that the valuation date falls on a date no later than the business day prior to the maturity date of the relevant instrument that would allow sufficient time for the equity coupon to be calculated and paid on time, allowing for the possibility of the maximum period of disruption occurring. In a security of this nature, the valuation date typically falls at least two weeks before the note maturity date or the standard ISDA fallback position is amended to reduce the number of days by which the valuation date can be extended.

The 2002 ISDA Equity Derivatives Definitions also include detailed provisions setting out the basis on which adjustments will be made to the calculation methodology or the constituent elements on which the calculation is based. Such adjustments may be required if a Potential Adjustment Event\(^\text{12}\) occurs. This is an event such as a consolidation or reclassification of shares, payments of extraordinary dividends or some other events that dilutes or concentrates the theoretical value of the underlying equity security. There are detailed provisions that deal with adjustments that are to be made in the case of a takeover in relation to the underlying equity securities, a tender offer for at least 10% of the outstanding voting shares, a nationalisation or delisting of the relevant securities, or an insolvency of the issuer of such securities. If an underlying index is subject to a material change in the calculation methodology or ceases to be maintained, adjustments may also need to be made.

The 2002 ISDA Equity Derivatives Definitions contain a menu of alternative consequences for dealing with events such as those described above. The alternative that the parties wish to adopt in relation to the structured product should therefore be incorporated into its terms. The specified calculation agent (usually the issuer of the structured product or an affiliate) will usually have significant discretion to determine whether such an event has occurred and how to calculate the necessary adjustments to be made, subject to an overriding duty to act in good faith and in a commercially reasonable manner.

In selecting the appropriate alternatives from the 2002 ISDA Equity Derivative Definitions, or if the standard equity definitions are amended, care will need to be taken to ensure that any relevant hedging arrangements entered into by the issuer or the investor, as the case may be, are also amended to reflect such amendments. Otherwise there is a risk that there may be a mismatch between the terms of the notes and the terms of the hedge. Similarly, it is important to ensure that the same criteria for determining the occurrence (or not) of an adjustment event and calculating the relevant adjustments is used throughout. Even if this is the case, potential mismatches can occur if the calculation agent for the structured equity product is different from the calculation agent appointed for any hedging instrument. In such cases, parties may seek to ensure that the same calculation agent

\(^{12}\) Section 11.2(e) of the 2002 ISDA Equity Derivatives Definitions.
is appointed or, if there are different calculation agents, that both must make
determinations and calculations on the same basis.

Where a structured product is linked to an underlying fund, provisions may also
be imported from the 2006 ISDA Fund Derivatives Definitions. These share many
features with the 2002 ISDA Equity Derivatives Definitions, but contain certain
differences to reflect issues relevant to fund-linked investments. In particular, the
determination of the relevant fund value is made by reference to either the Reported
Fund Interest Value,\textsuperscript{13} being the most recently reported NAV of the fund as of the
valuation date, or the Deemed Payout Method,\textsuperscript{14} which values the underlying fund
shares or units by reference to the amount a hypothetical investor would actually
have received by way of redemption payments on or before such valuation date,
following an earlier request for redemption. The provisions relating to disruptions in
valuation of the funds are similar to those contained in the 2002 ISDA Equity
Derivatives Definitions, but are tailored to obtaining valuations from funds. Where
the value of the fund is determined by reference to the reported NAV, a Fund
Valuation Disruption will typically occur on any day where the scheduled fund
valuation does not occur and is postponed to the next day on which such valuation
does occur.\textsuperscript{15}

7. Legal and regulatory issues

The legal and regulatory regime applicable to the structured product will depend on
a number of factors including the nature of the investment, such as the wrapper (eg
whether it is structured as a security or a fund investment), the jurisdiction(s) in
which the issuer is located and/or incorporated, where the investment is offered to
investors and, if relevant, on which exchange the investment is listed. Regulatory
and tax issues of equity products generally are considered further in Chapters [xxx]
but we provide an overview of some of the key considerations here.

Where debt securities are being issued by an issuer located in the EEA, are listed
on a recognised exchange in the EEA, or are offered to investors in the EEA, a number
of EU Directives enacted under the EU’s Financial Services Action Plan, including the
Prospectus Directive,\textsuperscript{16} the Transparency Obligations Directive,\textsuperscript{17} the Market Abuse
Directive\textsuperscript{18} and the Markets in Financial Instruments Directive,\textsuperscript{19} are likely to be
relevant.

The Prospectus Directive determines whether or not a prospectus complying with

\textsuperscript{13} Section 1.41 of the 2006 ISDA Fund Derivatives Definitions.

\textsuperscript{14} Section 1.36 of the 2006 ISDA Fund Derivatives Definitions.

\textsuperscript{15} Section 6.3(b) of the 2006 ISDA Fund Derivatives Definitions.

prospectus to be published when securities are offered to the public or admitted to trading and
amending Directive 2001/34/EC.

harmonisation of transparency requirements in relation to information about issuers whose securities
are admitted to trading on a regulated market and amending Directive 2001/34/EC.

dealing and market manipulation (market abuse).

Types of structured equity products

specified content requirements is required to be published in connection with the offering of any transferable securities to the public, or the listing of such securities on a regulated exchange in a member state of the EEA. The definition of an offer to the public is extremely wide. If parties wish to avoid issuing a prospectus under the Prospectus Directive, any offer will therefore generally need to fall within one of the specified exemptions to the prospectus requirement, including an offer:

- addressed solely to qualified investors (which include entities authorised or regulated to operate in the financial markets, governments, central banks, international and supranational organisations (eg the IMF) and companies which do not meet at least two of the following criteria: (i) an average number of employees during the financial year of less than 250; (ii) a total balance sheet not exceeding €43 million; and (iii) an annual net turnover not exceeding €50 million;
- addressed to fewer than 100 natural or legal persons per member state other than qualified investors; and
- whose denomination per unit amounts to at least €50,000 (or the equivalent in another currency at the date of issuance).

None of these exemptions will apply if the securities are to be listed on a regulated market in the EEA, in which case a compliant prospectus will need to be issued.

If a prospectus that is compliant with the Prospectus Directive is required, this must be approved by the home member state for the purpose of the issuance and must comply with the detailed content requirements set out in the Prospectus Directive and the Prospectus Regulation.20

A key advantage of the Prospectus Directive is that it provides scope for structured equity products in the form of securities to be offered to the public in member states of the EEA other than the member state of the competent authority approving the prospectus. If a compliant prospectus has been approved in a member state, the relevant securities are permitted to be offered to the public in other member states with no further action if one of the exemptions specified above is complied with or under the passporting provisions of Articles 17 and 18 of the Prospectus Directive. Under these provisions, provided that a notification procedure has been satisfied, the prospectus can be passported into another member state without further authorisation by that state’s competent authority. Although the so-called host member state can require certain administrative actions to be taken, including a translation of any summary contained in the prospectus, it cannot impose any further conditions to the offer of the securities within its jurisdiction.

In relation to structured securities with a fund wrapper, issuance must comply with the regulatory requirements. Within the EEA, the process is made relatively straightforward in the case of funds (ie collective investment schemes) falling within

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the UCITS legislative provisions. Currently the UCITS legislation is comprised of the 1985 UCITS Directive, which is known as ‘UCITS I’, and the 2002 Product Directive (2001/108/EC)\textsuperscript{21} and the 2002 Management Company Directive (2001/107/EC),\textsuperscript{22} which both amend UCITS I and are together known as ‘UCITS III’. For a scheme to fall within the UCITS regulations, it must satisfy various criteria including falling within the Article 1 definition of UCITS and complying with the investment (eligible assets) and borrowing restrictions set out in Section V of the 1985 UCITS Directive, as amended. A UCITS scheme can be approved by the relevant member state’s competent authority and is then readily marketable throughout the EU, subject as provided below.

A UCITS fund is restricted to certain assets in which it may invest. Investments must generally be in transferable securities but, subject to certain constraints, may also comprise other liquid financial assets including money market investments, deposits, derivatives and forwards and units in other collective investment schemes. The investments must comply with spread and concentration rules.\textsuperscript{23} To be UCITS eligible, the fund must also comply with other requirements, including the appointment of a management company and a depositary. These must be separate entities acting independently of each other, each meeting specified criteria.\textsuperscript{24} There is still some uncertainty as to exactly what underlying investments a fund can contain to enable it to be UCITS eligible, but regulators have been open about allowing a diverse range of equity derivatives products to be included within UCITS wrappers. Any such arrangement would still need to operate within the specified parameters to qualify.\textsuperscript{25}

A scheme which qualifies as a UCITS and has been authorised by the competent authority in one EEA member state may then be passported into another member state. It can then be offered to retail investors in that host state without any further authorisation (with some exceptions set out below). The manager of the UCITS scheme is only obliged to inform the competent authority of the host member state and provide them with prescribed information. The passporting may only be refused by the host member state if the proposed arrangements for the marketing of the UCITS would not comply with its laws and regulations. The passport is not, however, the complete answer for a multi-jurisdictional offering, as host states can regulate matters not covered by the 1985 UCITS Directive, as amended.\textsuperscript{26} This is potentially problematic for a manager of a UCITS scheme which is being offered to retail investors outside of that manager’s home member state. Host states may impose


\textsuperscript{23} Article 5g (1)(e) of the 2002 Management Company Directive.

\textsuperscript{24} Article 19(1)(g) of the 1985 UCITS Directive, as amended.

\textsuperscript{25} Article 44 of the 1985 UCITS Directive, as amended.
different obligations relating to the marketing of the scheme (eg meaning that promotion of the same scheme in multiple jurisdictions could lead to the manager having to comply with different marketing restrictions in each jurisdiction).

The manager of the UCITS scheme must publish and maintain a full prospectus and a simplified prospectus, together with annual and half-yearly reports for the scheme to keep investors up-to-date. The information required for the full prospectus is specified in Schedule A, Annex I to the 1985 UCITS Directive. The information required for the simplified prospectus is specified in Schedule C, Annex I (Contents of the simplified prospectus) to the 2002 Management Company Directive. The simplified prospectus must be “structured and written in such a way that it can be easily understood by the average investor”. Commission Recommendation 2004/384/EC provides guidance as to some of the contents of the simplified prospectus, with emphasis on the description of risks and the interpretation of other requirements of the 1985 UCITS Directive, as amended. Commission Recommendation 2004/383/EC provides guidance on a common risk-measurement approach when using financial derivative instruments for UCITS.

The European Commission has been considering proposals to amend the existing UCITS legislation, in the form of a recast of the UCITS Directive (known as ‘UCITS IV’), which are expected to be adopted in 2009 and implemented in all EEA member states by mid-2011. These proposals are aimed at modernising the UCITS regulatory framework by improving investor information, facilitating cross-border mergers of UCITS funds and asset pooling through a master-feeder structure and creating a fully-fledged pan-European passport for UCITS management companies, while improving supervisory cooperation among competent authorities.

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