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# Trading Packs and Bundles on LIFFE CONNECT®

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Euronext.liffe refers to the combined derivatives operations of Euronext and LIFFE. It comprises:

- Euronext Amsterdam Derivative Markets, which is a regulated market under Dutch Law;
- Euronext Brussels Derivatives Market, which is a regulated market under Belgian Law;
- Euronext Lisbon Futures and Options Market, which is a regulated market under Portuguese Law;
- LIFFE Administration and Management, which is a Recognised Investment Exchange under English Law;
- MATIF and MONEP, which are regulated markets under French Law.

All are regulated markets under the European Union's Investment Services Directive.

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# Contents

# 1 Introduction

Euronext.liffe is one of the world's leading derivatives Exchanges and is a market leader in the provision of Short Term Interest Rate (STIR) futures and options contracts. Euronext.liffe's flagship contract, EURIBOR, is the most heavily traded euro-denominated STIR contract in the world and is supported by a comprehensive portfolio of STIR futures and options contracts that cover the world's primary trading currencies.

All of Euronext.liffe's futures and options contracts are traded on the Exchange's electronic trading platform, LIFFE CONNECT®, which is recognised by the market to offer unrivalled flexibility and rich functionality.

**Strategy trading on LIFFE CONNECT®**

For STIR markets, particularly EURIBOR and Short Sterling, the ability to trade strategies efficiently and effectively is of key importance. LIFFE CONNECT® supports a comprehensive range of strategy types that provide greater flexibility and increased trading opportunities for market users.

LIFFE CONNECT® allows market participants to submit orders in either individual contract months, "outrights", or as various combinations of outrights through recognised strategies. LIFFE CONNECT® allows these strategies to be quoted and traded as single, unified transactions on screen, meaning easier access to the strategy market and more efficient execution.

The strategy functionality offered by LIFFE CONNECT® offers significant advantages by allowing users to trade a single strategy rather than a number of outright months. Legging risk (the risk of not being able to fulfil a particular leg of the strategy) is therefore removed.

For multi-legged strategies, an Exchange-maintained algorithm calculates the traded price of each leg of the strategy. Additionally, implied trading functionality is offered for certain strategies traded on LIFFE CONNECT® with both "implied in" and "implied out" prices being generated.

**Packs and Bundles for STIR traders**

Of particular importance for the trading of STIR contracts is the ability on LIFFE CONNECT® to trade Packs and Bundles quickly and effectively, allowing market participants to gain exposure to longer term interest rates in a single transaction.

## 2 What are Packs and Bundles?

Packs and Bundles are essentially specialised types of Strip transaction. Strips are recognised strategies on LIFFE CONNECT® and allow the user to execute a simultaneous transaction in a series of consecutive quarterly delivery months, removing the legging risk associated with executing separate trades in each of the constituent delivery months. These flexible strategy types allow Strips of varying numbers of legs (from four to twenty constituent months) and allow the volume of each leg to vary.

A ***Pack*** comprises four consecutive quarterly months in the same colour grouping. As with a Strip, you would either buy each leg of the strategy or sell each leg to go long or short the Pack. However, Packs are more standardised than Strips in that each constituent leg must be of the same volume.

- eg a long 5 lot White Pack position consists of 5 lots long White Dec, 5 lots long White Mar, 5 lots long White Jun and 5 lots long White Sep.

Currently, five Pack strategies are available on LIFFE CONNECT®:

- **White Pack** (first year)
- **Red Pack** (second year)
- **Green Pack** (third year)
- **Blue Pack** (fourth year)
- **Gold Pack** (fifth year).

A ***Bundle*** comprises consecutive quarterly months (starting from the front month) at equal volume per leg, covering two or more years.

- eg a Two Year Bundle would consist of equal numbers of lots (all long or all short) in each of White Dec, White Mar, White Jun, White Sep, Red Dec, Red Mar, Red Jun and Red Sep.

Trading Bundles is equivalent to trading groups of Packs and allows users to gain access to the yield curve out to the required yearly term. Euronext.liffe offers the following Bundle strategies on LIFFE CONNECT®:

- **Two Year Bundle** (all white and red quarterlies, ie White Pack + Red Pack)
- **Three Year Bundle** (White Pack + Red Pack + Green Pack)
- **Four Year** (White Pack + Red Pack + Green Pack + Blue Pack)
- **Five Year Bundles** (White Pack + Red Pack + Green Pack + Blue Pack + Gold Pack)

LIFFE CONNECT® Packs and Bundles allow market participants to gain exposure to longer term interest rates (from one year, via the White Pack or out to several years, via the Bundles) in a single transaction, saving time and eliminating legging risk.

## 3 The advantages of trading Packs and Bundles on LIFFE CONNECT®

LIFFE CONNECT®, Euronext.liffe's trading platform offers:

- continuous price discovery and global distribution of price information facilitating speedy execution of trading decisions and making it possible to monitor and manage positions on a real-time basis
- a single transparent and anonymous marketplace where all users have the opportunity to access full market information
- world-wide access from over 800 sites in 29 countries across five continents
- a proven track-record of handling heavy trading activity and order traffic – EURIBOR and Short Sterling, two of the world's largest STIR contracts, are traded successfully and efficiently on LIFFE CONNECT®

In addition to enabling market participants to submit orders in individual contract months (the "outrights"), LIFFE CONNECT® has highly developed functionality for the trading of complex strategies on screen.

Euronext.liffe offers cross-margining between all of its Short Term Interest Rate ("STIR") products, including EURIBOR and Short Sterling. With margin offsets as high as 55%, this guarantees capital efficiency to our customers.

# 4 Transaction fees

**EURIBOR and Short Sterling**
Euronext.liffe is offering significant fee reductions on Pack and Bundle strategies in its EURIBOR and Short Sterling futures contracts. A new Pack and Bundle pricing structure allows users to trade EURIBOR and Short Sterling Packs and Bundles at a fraction of the cost of trading the constituent legs in the outright markets.

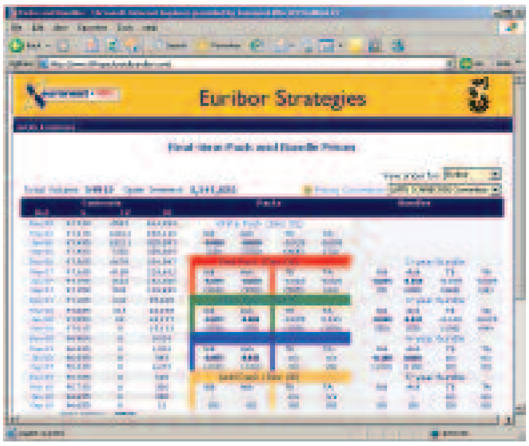
Under the new EURIBOR and Short Sterling structure, Exchange transaction fees are charged on a "per strategy" rather than on a "per leg" basis. In addition, the current LCH.Clearnet clearing charge of 3p per lot per side has been reduced to 2p per lot per side for all EURIBOR and Short Sterling Packs and Bundles.

The new Pack and Bundle transaction fee levels have significantly reduced the cost of trading in these multi-legged strategies.

| | LIFFE transaction fee | LCH.Clearnet clearing charges price fee | LIFFE + LCH. Clearnet package |
|---|---|---|---|
| White Pack | £0.82 | £0.08 | £0.90 |
| Red Pack | £0.62 | £0.08 | £0.70 |
| Green Pack | £0.42 | £0.08 | £0.50 |
| Blue Pack | £0.00 | £0.08 | £0.08 |
| Gold Pack | £0.00 | £0.08 | £0.08 |
| Two Year Bundle | £1.04 | £0.16 | £1.20 |
| Three Year Bundle | £0.96 | £0.24 | £1.20 |
| Four Year Bundle | £0.88 | £0.32 | £1.20 |
| Five Year Bundle | £0.80 | £0.40 | £1.20 |

# 5 Accessing electronic Pack and Bundle prices

A free real-time Pack and Bundle pricing service can be accessed easily via the web at www.liffepacksandbundles.com




This site offers a number of helpful features:

- Live outright prices and the Pack and Bundle prices "implied" by these constituent leg prices (showing as the Pack and Bundle "theoretical price")
- Live Liquidity Provider tradable prices (on-screen two-way prices showing throughout the trading day)
- Time and Sales data for the current day's Pack and Bundle transactions (includes volume and traded price for each strategy executed)
- Functionality to show Pack and Bundle prices using the LIFFE CONNECT® quoting convention or to convert these prices to a display using the annualised quoting convention

**Quote vendor codes**
Pack and Bundles prices are now available on Bloomberg and Reuters, allowing market partipants even greater access to fast and accurate information on LIFFE CONNECT® quoted prices and trade data.

**Bloomberg pages**
Users can access depth of market information by typing the following strategy codes followed by <CMDTY> BBO <GO>

As is clear below, the last two digits of each code is made up of the front month futures delivery month code (H for Mar, M for Jun, U for Sep and Z for Dec) followed by the delivery year of the front month.

So for the examples below, when Dec 05 ceases trading and Mar 06 becomes the front month, the new EURIBOR White Pack code, for example, would be PERH6.

| EURIBOR | |
|---|---|
| White Pack | PERZ5 |
| Red Pack | PERZ6 |
| Green Pack | PERZ7 |
| Blue Pack | PERZ8 |
| Gold Pack | PERZ9 |
| Two Year Bundle | ER2YZ5 |
| Three Year Bundle | ER3YZ5 |
| Four Year Bundle | ER4YZ5 |

| Short Sterling | |
|---|---|
| White Pack | PL-Z5 |
| Red Pack | PL-Z6 |
| Green Pack | PL-Z7 |
| Blue Pack | PL-Z8 |
| Gold Pack | PL-Z9 |
| Two Year Bundle | L-2YZ5 |
| Three Year Bundle | L-3YZ5 |
| Four Year Bundle | L-4YZ5 |

## Reuters pages

| EURIBOR | |
|---|---|
| White Pack | FEIPACKWHITEZ5 |
| Red Pack | FEIPACKREDZ6 |
| Green Pack | FEIPACKGREENZ7 |
| Blue Pack | FEIPACKBLUEZ8 |
| Gold Pack | FEIPACKGOLDZ9 |
| Two Year Bundle | FEIBUNDLE2YRZ5 |
| Three year Bundle | FEIBUNDLE3YRZ5 |
| Four Year Bundle | FEIBUNDLE4YRZ5 |

| Short Sterling | |
|---|---|
| White Pack | FSSPACKWHITEZ5 |
| Red Pack | FSSPACKREDZ6 |
| Green Pack | FSSPACKGREENZ7 |
| Blue Pack | FSSPACKBLUEZ8 |
| Gold Pack | FSSPACKGOLDZ9 |
| Two Year Bundle | FSSBUNDLE2YRZ5 |
| Three Year Bundle | FSSBUNDLE3YRZ5 |
| Four Year Bundle | FSSBUNDLE4YRZ5 |

## 6 Pricing and quoting Packs and Bundles

The LIFFE CONNECT® convention for quoting Packs and Bundles is based on the net **total** change in price between the current trading session's market price and the previous day's settlement price.

For example, using the following data:

| | | | |
|---|---|---|---|
| Dec 05 | Bid 97.755 | Offer 97.760 | Previous Settlement 97.760 |
| Mar 06 | Bid 97.650 | Offer 97.655 | Previous Settlement 97.660 |
| Jun 06 | Bid 97.535 | Offer 97.540 | Previous Settlement 97.545 |
| Sep 06 | Bid 97.445 | Offer 97.450 | Previous Settlement 97.450 |

A bid in the Pack would be calculated as:
(-0.005) + (-0.010) + (-0.010) + (-0.005) = -0.030

An offer in the Pack would be calculated as:
(0.000) + (-0.005) + (-0.005) + (0.000) = -0.010

After a Pack or Bundle strategy trades, the calculation above is run in reverse as the individual delivery month prices are assigned automatically on LIFFE CONNECT®. These leg prices will add up to the price at which the particular Pack or Bundle strategy has traded.

An alternative pricing convention for Packs and Bundles, the Annualised Convention, is based on the net average change in price. This quotation is obtainable from the LIFFE CONNECT® quotation simply by dividing by the number of legs in the Pack or Bundle. The result is typically quoted in basis points.

The main advantage of the LIFFE CONNECT® pricing convention is that it offers greater granularity of pricing. Where the annualised convention results in a rounding of the average price to a specified tick size, the LIFFE CONNECT® pricing convention eliminates these rounding errors and allows trading at tighter prices. Although the LIFFE CONNECT® total change pricing convention may lead Pack and Bundle spreads and prices to appear larger, this is purely because the quotes are shown as totals rather than averages.

The LIFFE CONNECT® system's net total change convention shows the link to the underlying futures profit and loss directly. On the other hand, the annualised convention shows a closer correspondence to the underlying term markets, eg a one basis point move in the Five Year Bundle under the annualised convention corresponds to a one basis point move in five year rates.

# 7 Packs and Bundles and the yield curve

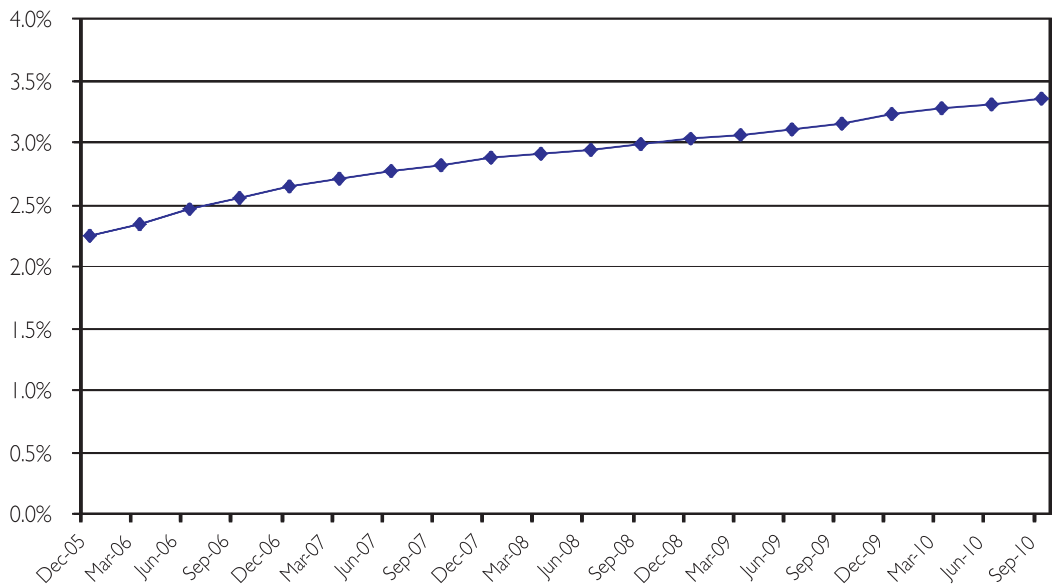
The main factor in the interest rate markets is the yield curve. Trading a particular outright STIR futures delivery month gives the user access to the required section of the yield curve. Packs and Bundles strategies offer increased efficiency in gaining exposure to longer-term interest rates and further sections of the yield curve.

**Outright Futures and the forward curve**
The price quoted for a particular STIR futures outright delivery month implies the market's perception of the official three month LIBOR or EURIBOR fixing on that contract month's Last Trading Day.

Since different outright STIR futures delivery months each represent the underlying interest rate at a different point in time, this series of rates does not compose a single forward curve, but rather a "forward/forward curve". Whereas a forward curve represents the market's expectation of where the spot yield curve will be at a particular forward date, a forward/forward curve shows the market's expectation of the evolution of a single point on the curve (the three-month forward rate, for example) over a period of time.

The level of interest rates in any domestic market is determined by numerous factors. For example, supply and demand, government or central bank monetary policy, the current economic climate, the strength or weakness of the currency, etc. All of these factors can contribute to moving the spot yield curve and the various forward yield curves embedded in it.

**EURIBOR futures forward/forward curve – 6 October 2005**



# 8 Packs and Bundles and the forward curve

The multiple quarterly delivery months that constitute a Bundle form a more or less continuous series of consecutive three month deposit rates out to the specified term. The twenty months comprising the Five Year Bundle, for example, represent twenty consecutive points on a five year forward yield curve. Since different Bundles represent different term interest rates that effectively each start on the same day, they do all fall on a single forward curve.

**Eg EURIBOR Bundle forward curve on 20 September 2005**

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front Outright | Dec-05 | | | | | | | | | | | | | | | | | | | |
| White Pack | Dec-05 | Mar-06 | Jun-06 | Sep-06 | | | | | | | | | | | | | | | | |
| Two Year Bundle | Dec-05 | Mar-06 | Jun-06 | Sep-06 | Dec-06 | Mar-07 | Jun-07 | Sep-07 | | | | | | | | | | | | |
| Three Year Bundle | Dec-05 | Mar-06 | Jun-06 | Sep-06 | Dec-06 | Mar-07 | Jun-07 | Sep-07 | Dec-07 | Mar-08 | Jun-08 | Sep-08 | | | | | | | | |
| Four Year Bundle | Dec-05 | Mar-06 | Jun-06 | Sep-06 | Dec-06 | Mar-07 | Jun-07 | Sep-07 | Dec-07 | Mar-08 | Jun-08 | Sep-08 | Dec-08 | Mar-09 | Jun-09 | Sep-09 | | | | |
| Five Year Bundle | Dec-05 | Mar-06 | Jun-06 | Sep-06 | Dec-06 | Mar-07 | Jun-07 | Sep-07 | Dec-07 | Mar-08 | Jun-08 | Sep-08 | Dec-08 | Mar-09 | Jun-09 | Sep-09 | Dec-09 | Mar-10 | Jun-10 | Sep-10 |

Similarly, the interest rates comprising a White Pack also fall on the same forward curve – the White Pack is after all a One Year Bundle. However, because the subsequent Packs start at different points in time and cover different sections of the yield curve, the Red, Green, Blue and Gold Packs fall on a forward/forward curve.

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| White Pack | Dec-05 | Mar-06 | Jun-06 | Sep-06 | _ | _ | _ | _ | | | | | | | | | | | | |
| Red Pack | | | | | Dec-06 | Mar-07 | Jun-07 | Sep-07 | _ | _ | _ | _ | | | | | | | | |
| Green Pack | | | | | | | | | Dec-07 | Mar-08 | Jun-08 | Sep-08 | _ | _ | _ | _ | | | | |
| Blue Pack | | | | | | | | | | | | | Dec-08 | Mar-09 | Jun-09 | Sep-09 | _ | _ | _ | _ |
| Gold Pack | | | | | | | | | | | | | | | | | Dec-09 | Mar-10 | Jun-10 | Sep-10 |

**Eg EURIBOR Pack forward/forward curve on 20 September 2005**

It is important to note that, when calculating the long term interest rate from the series of rates making up the Bundle or the White Pack, whether one compounds the various rates or simply takes the average rate, the long term rates generated in both cases are very similar.

**Eg EURIBOR White Pack made up of the following four delivery months:**

| | Dec-05 | Mar-06 | Jun-06 | Sep-06 |
|---|---|---|---|---|
| time period (days) | 90 | 92 | 92 | 91 |
| futures price | 97.845 | 97.835 | 97.780 | 97.710 |
| deposit rate | 2.155% | 2.165% | 2.22% | 2.29% |

The compound interest rate would be calculated as follows:

[(1 + 2.155% x 90/360) x (1 + 2.165% x 92/360) x (1 + 2. 22% x 92/360) x (1 + 2.29% x 91/360)] x 360/365

This would give a compounded rate of 2.226% as compared to a simple average (ignoring day counts) of 2.226%

A Five Year STIR Bundle is effectively a way of gaining exposure in a single transaction to the equivalent of reinvesting twenty times in end-to-end three month deposits. This in turn is a five year deposit rate and so a Five Year Bundle can indicate the market's expectation of five year interest rates.

**STIR Bundles and Bond Futures**

Because Bundles give access to a longer-term deposit rate, they are effectively bond-like strategies in the way they offer access to a particular term yield curve. STIR Bundles can therefore be used as an efficient alternative to cash bonds or bond futures for hedging and trading.

| Cash Bond/Bond Future | STIR Bundle alternative |
|---|---|
| Two Year Schatz | Two Year EURIBOR Bundle |
| Five Year Bobl | Five Year EURIBOR Bundle |
| Two Year Gilt | Two Year Short Sterling Bundle |
| Five Year Gilt | Five Year Short Sterling Bundle |

In fact, the use of a series of quarterly futures contracts in their construction means that Bundles actually offer a superior alternative to Bond futures when hedging. Where a Bobl future is used to hedge an underlying five year position, for example, the futures position will have an increasing mismatch with the instrument being hedged. A Five Year EURIBOR Bundle, however, closely tracks the term of the hedged position – when the instrument being hedged becomes a four and half year instrument, the expiry of the two front constituent quarterly months in the Five Year Bundle means that it too has a four and a half year term. A bond futures hedge position would need to be rolled throughout the lifetime of the hedge. A Five Year Bundle negates the requirement to roll.

# 9 Hedging with Packs and Bundles

As with all hedging calculating the hedge ratio is key, and the simplest way to calculate this is via basis point value. Because basis point value reflects the value of the change in price for each 1/100 of a per cent change in yield, it can be used to ensure that the amount of the instrument used to construct the hedge is equivalent to the yield curve exposure of the position to be hedged.

**Example: Using a EURIBOR two year Bundle to hedge a cash Schatz position**
In September 2005 a bond trader buys €10 million of the 2% 09/07 German Schatz bond at a clean price of 99.72. To hedge this position over the next three months, the trader uses a LIFFE CONNECT® Two Year EURIBOR Bundle. To calculate the appropriate hedge ratio, the trader looks up the basis point value of this particular bond from an appropriate data source and is able to calculate that the basis point value of his cash trade is €1,720. Since one Two Year Bundle has a basis point value of €200 (eight legs x the €25 value of 0.01 for each leg) therefore covering roughly 1/9 of the basis point value of the position to be hedged, the trader simply sells 9 lots of the EURIBOR Two Year Bundle at an average leg price of 97.87.

In December 2005, the clean price of the Schatz drops to 97.96, i.e. a drop of 1.765% per cent. This would result in a loss of €176,500 on the cash bond side of the position, but at the same time, the average leg price of the Two Year Bundle has also fallen. Now at an average leg price of 97.735, the short Bundle position is showing a profit of €227,000, which offsets the loss generated by fall in the value of the long cash bond position.

Although a more exact approach would be to apply individual hedge ratios for each contract month forming the constituent legs of the Bundle (ie a series of eight hedge ratios to cover the two year curve), this is cumbersome and lacks the simplicity, efficiency and ease of execution that is the advantage of the LIFFE CONNECT® Bundle market. For Bundle users who wish to adjust their hedge to reflect varying hedge ratios, Packs are the ideal solution. They allow the user to execute an efficient Bundle hedge quickly and easily in the strategy market and then perhaps if necessary to further tailor the hedge by executing a Pack trade to adjust the hedge ratio to a particular section of the curve.

**Example: Using Packs to adjust the hedge ratio of a Five Year Bundle**

To hedge a $100 million 5 Year Swap position, possible hedge ratios for each of the constituent quarterly months might require the following number of lots to be traded at each point on the curve:

| **Quarter** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
|---|---|---|---|---|---|---|---|---|---|---|
| Contract Month | Dec-05 | Mar-06 | Jun-06 | Sep-06 | Dec-06 | Mar-07 | Jun-07 | Sep-07 | Dec-07 | Mar-08 |
| Number of Futures Lots | 102 | 101 | 98 | 97 | 97 | 97 | 94 | 93 | 93 | 93 |
| **Quarter** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** |
| Contract Month | Jun-08 | Sep-08 | Dec-08 | Mar-09 | Jun-09 | Sep-09 | Dec-09 | Mar-10 | Jun-10 | Sep-10 |
| Number of Futures Lots | 90 | 90 | 90 | 90 | 87 | 86 | 86 | 86 | 83 | 82 |

To execute each of the 20 constituent legs at these individual volumes is far too time consuming and involves such a significant amount of legging risk so as to make such a transaction rather unreasonable. However, by using the following numbers of Five Year Bundles and the relevant colour Packs, the user can achieve a tailored hedge that more closely reflects the declining hedge ratio further along the curve:

| **Number of Strategy Lots** | **83 Five Year Bundles** | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 17 White Packs | | | | 13 Red Packs | | | | 9 Green Packs | | | | 5 Blue Packs | | | | 0 Gold Packs | | | |
| Futures per leg | 100 | 100 | 100 | 100 | 96 | 96 | 96 | 96 | 92 | 92 | 92 | 92 | 88 | 88 | 88 | 88 | 83 | 83 | 83 | 83 |

Bundles are in effect a standardised hedge instrument. The importance of Packs in the range of strategies available is that they provide the opportunity to tailor Bundle hedges while still offering easy execution of multi-legged strategies in a transparent, efficient strategy market.

# 10 Pack and Bundle trading strategies

Packs and Bundles are versatile strategies that have a wide range of uses. In addition to offering a more efficient alternative to bond futures when hedging, Packs and Bundles also offer huge potential for strategy trading against other products.

**The TED spread**

A common use of Bundles is in the spread between the inter-bank deposit market in relation to the higher credit quality of government debt, often called a 'TED spread' after the most common variant, US Treasuries vs Eurodollar. Market participants can take a position on the 'TED' spread solely by the use of futures – an example 'TED' spread would be long German Schatz futures against short EURIBOR Two Year Bundles. Similarly, Short Sterling Bundles can be spread against the relevant term cash Gilts.

**Combination Pack and Bundle trades**

There are numerous combinations of Pack and Bundle-based positions that open up a whole new world of spread trading opportunities. Perhaps the most significant advantage of Pack and Bundle based trading are the opportunities for the bid/offer spread of a particular Pack or Bundle to be tighter than the corresponding theoretical bid/ask spread generated from the constituent contract months in the outright market. This of course means that there is the potential for many new spreading opportunities between the Pack and Bundle market and the outright market.

Since Packs and Bundles give efficient access to year groups of delivery months, they can be used in a host of spread strategies:

- **Packs vs Outrights, Pack butterflies**

  Dedicated liquidity providers in LIFFE CONNECT® Packs and Bundles provide continuous two-way prices on screen and these spreads are very often tighter than the theoretical spread 'implied' by the constituent outrights. In its basic form, the Outright over Packs (OOPS) spread offers the potential for trading opportunities where a market participant could execute a trade in a Pack and in one of the outrights at the same time at levels that would allow the user to lock in an edge on one of these legs.

  There are variations on the basic OOPS trade. A Pack-Outright-Pack Butterfly (POP Butterfly), for example, offers the potential to lock in edge on individual legs by trading two different colour Packs and one of the outrights. An example POP Butterfly transaction would involve going long the White Pack, long the Red Pack and going short in the furthest white outright contract month.

- **Bundle spreads, Pack calendars**

  Trading spreads involving Bundles of different terms allows users to execute spreads on the Bundle forward curve simply (no trading ratios are needed) and in a margin efficient way. Such trades will behave similarly to the analogous in the spot curve. Trading a Two Year Bundle against a Five Year Bundle gives exposure to the third through to fifth years of the curve and if executed in EURIBOR will behave similarly to the relevant ratio spread between Schatz and Bobl futures. Similar access can also be achieved by trading the Green, Blue and Gold Packs together. The many permutations of spreads involving various Bundles or combinations of Packs only increase the arbitrage and spread trading opportunities across these strategy markets.

Similarly, Pack spreads are analogous to Bar-Bell trades on the spot curve (a popular example being the Bund/Bobl/Schatz spread). A One Year/Two Year/Three Year spread, for example, could be executed in the Pack market by simply trading the Red Pack/Green Pack spread.

# 11 Wholesale trading facility

**Basis trades**

Pack and Bundle strategies can be executed under the Basis Trade Facility, which facilitates the execution of futures trades which are conditional on a cash market trade between the same two counterparties. The Basis Trade Facility allows members to pre-negotiate Basis Trades and report them through LIFFE CONNECT®.

STIR Packs and Bundles can be traded in a Basis Trade using the following cash leg instruments:

| Government Bonds |
|---|
| Non-Government Bonds |
| Vanilla Interest Rate Swaps |
| Forward Rate Agreements ("FRAs") |
| “Repo” Transactions |
| OTC Options (incl. strategies) on any of the available cash leg instruments above |

In addition, for EURIBOR Basis Trades, non-Euronext liffe German government bond futures have now been added to the list of eligible cash legs. This offers customers much greater ease of execution in trading the basis between the interbank curve and the government bond yield curve. By executing spread strategies using Euronext.liffe EURIBOR Packs and Bundles and German government bond futures contracts through the Basis Trade Facility, members can avoid the legging risk associated with trading the two transactions on separate markets.

There is no minimum order volume required to use the Basis Trade Facility, however, the futures element and the cash element should provide the same economic value.

**Block trades**

Packs and Bundles can also be traded under the Block Trade Facility, which allows members to execute a pre-negotiated trade of significant size outside the central market and submit it to the Exchange via LIFFE CONNECT®. Block Trades eliminate execution risk as partial order fills are avoided and ensure price certainty as the trade is executed at a single pre-negotiated price level.

Any exchange member can arrange a Block Trade. Where members trade with or on behalf of non-member clients, these clients must be “Block Trade Clients”, ie have sufficient knowledge and experience of the market and the contract to be able to participate in a Block Trade.

Block Trades must be at or above a minimum order size threshold level. The following are the Block Trade minimum size thresholds for Packs and Bundles:

| Euro (EURIBOR) | Minimum threshold levels (Lots) |
|---|---|
| White Pack | 1,250 each leg of strategy |
| Red Pack | 750 each leg of strategy |
| Green Pack | 250 each leg of strategy |
| Blue Pack | 250 each leg of strategy |
| Gold Pack | 250 each leg of strategy |
| Two Year Bundle | 625 each leg of strategy |
| Three Year Bundle | 417 each leg of strategy |
| Four Year Bundle | 313 each leg of strategy |
| Five Year Bundle | 250 each leg of strategy |

| **Short Sterling** | **Minimum threshold levels (Lots)** |
|---|---|
| White Pack | 750 each leg of strategy |
| Red Pack | 500 each leg of strategy |
| Green Pack | 250 each leg of strategy |
| Blue Pack | 250 each leg of strategy |
| Gold Pack | 250 each leg of strategy |
| Two Year Bundle | 375 each leg of strategy |
| Three Year Bundle | 250 each leg of strategy |
| Four Year Bundle | 188 each leg of strategy |
| Five Year Bundle | 150 each leg of strategy |

## 12 Accessing the Pack and Bundle market on LIFFE CONNECT®

A number of Independent Software Vendors (ISVs) have developed their own tailored front-end trading applications with enhanced functionality for entering Pack and Bundle orders into the central **LIFFE CONNECT®** strategy market.

Further information on specific ISV Pack and Bundle trading solutions offered by the following ISVs can be accessed at www.euronext.com.
[do you know where on the web site this is?]

- **Actant**
- **EasyScreen**
- **Eccoware**
- **FFastFill**
- **Future Dynamics**
- **ION**
- **Nyfix**
- **Orc**
- **Patsystems**
- **RTS**
- **Trading Technologies**
- **GL**

## 13 Further information

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