



Risk Management and Hedging Strategies

CFO **BestPractice** Conference

September 13, 2011

Introduction

Why is Risk Management Important? (FX)

Clients seek to maximise income and minimise costs. Reducing foreign exchange risk is key to achieving these goals

Significant spot moves pose financial threats (USDILS)



Late 2008 and early 2009 saw a significant depreciation in ILS spot of 10,000 pips as markets slumped in the midst of the financial crisis

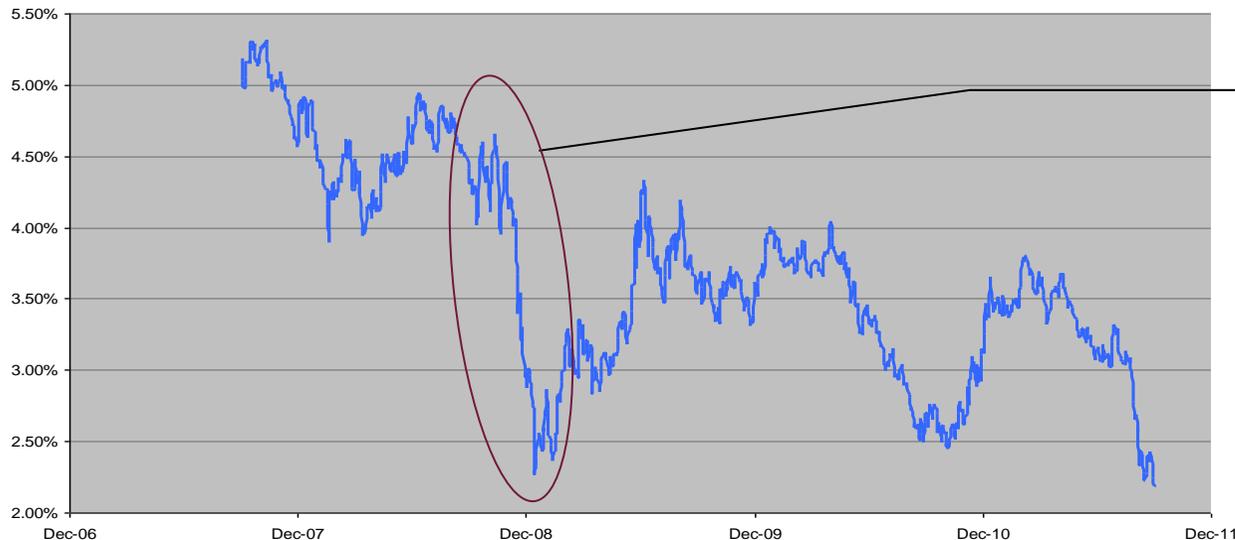
Difficulty in predicting FX movements necessitates robust risk management

- Historical analysis shows that currency exchange rates have experienced significant volatility (see graph above), presenting both risks and opportunities.
- An exposure to adverse fluctuations in exchange rates can, as exemplified above, lead to significant margin erosion.
- With risk remaining a prominent theme within FX markets, and liquidity and volatility reaching significant peaks, it is more crucial than ever for corporates to consider their exposure to FX risk.
- Hence, in the current environment it is particularly important to consider incorporating Barclays Capital into one's FX banking group. The wealth of financial products offered by Barclays Capital allows clients to better accommodate any drastically unfavourable moves in the FX market, which could have a profound effect on their bottom line.

Why is Risk Management Important? (Interest Rates)

Clients seek to maximise income and minimise costs. Reducing interest rate risk is key to achieving these goals

Significant rate moves pose financial threats (US 10Y Swap Rate)



Autumn 2008 saw a significant drop in USD swap rates of 2% as markets slumped in the midst of the financial crisis

Difficulty in predicting Interest Rate movements necessitates robust risk management

- Historical analysis shows that interest rates have experienced significant volatility (see graph above), presenting both risks and opportunities.
- An exposure to adverse fluctuations in interest rates can, as exemplified above, lead to significant margin erosion.
- With risk remaining a prominent theme within Interest Rate markets, and liquidity and volatility reaching significant peaks, it is more crucial than ever for corporates to consider their exposure to Interest Rate risk.
- Hence, in the current environment it is particularly important to consider incorporating Barclays Capital into one's Interest Rate banking group. The wealth of financial products offered by Barclays Capital allows clients to better accommodate any drastically unfavourable moves in the Interest Rate market, which could have a profound effect on their bottom line.

Interest Rates

Interest Rate Swap

Description

- The interest rate swap is typically used to modify interest rate structure of the debt portfolio
- In the swap the company exchanges a set of cashflows calculated based on a floating interest rate for those calculated based on a fixed rate, or vice versa
- One of the legs of the swap (depending on the direction) and the key parameters (notional, start, end and interest payment dates) would typically replicate company's existing debt instrument(s)
- There are typically no notional exchanges in an IRS, and interest cashflows are paid on a net basis
- The transaction could be considered for hedge accounting if it mirrors the underlying liability

Identifying the Opportunity

- Swapping into fixed rate:
 - ▶ A company believe rates are likely to rise and:
 - ▶ Is borrowing in floating or
 - ▶ Has a predominantly floating rate portfolio of existing debt and is seeking to rebalance exposures
- Swapping into floating rate:
 - ▶ A company believe rates are likely to fall and:
 - ▶ Is planning fixed rate issuance or has a predominantly fixed rate portfolio of existing debt and is seeking to rebalance exposures and/or
 - ▶ Is concerned about immediate interest rate costs and is seeking ways to mitigate these

Risks and Benefits

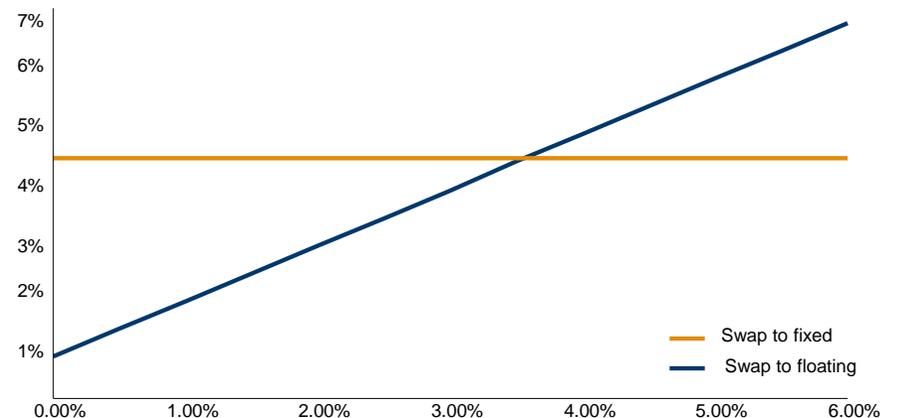
Benefits

- Simple, zero-premium structure
- *For swap into floating:* typically lower initial cost of carry
- *For swap into fixed:* no risk of interest rates rising

Risks

- *For swap into floating:* increased interest costs should rates rise
- *For swap into fixed:* most frequently higher cost of carry (with the non-inverted curve)

Payoff Diagram



Purchase of a Cap

Description

- The structure can be viewed as interest cost insurance, where the company limits the interest they would pay on its debt by buying a cap option
 - ▶ Debt costs are typically limited at the rate equal to the strike of the cap option
- To finance the purchase of protection, the client pays a premium, either upfront or as a spread over the life of the trade
- With certain limitations, the strategy could be considered for hedge accounting treatment
- Trade can be documented either as option only or an exchange of LIBOR rates with an option overlay

Risks and Benefits

Benefits

- ▶ No (or reduced, where premium is paid on a running basis) negative carry
- ▶ Protection against increases in interest rates (typically at the cap strike level)
- ▶ Full benefit of lower interest rates

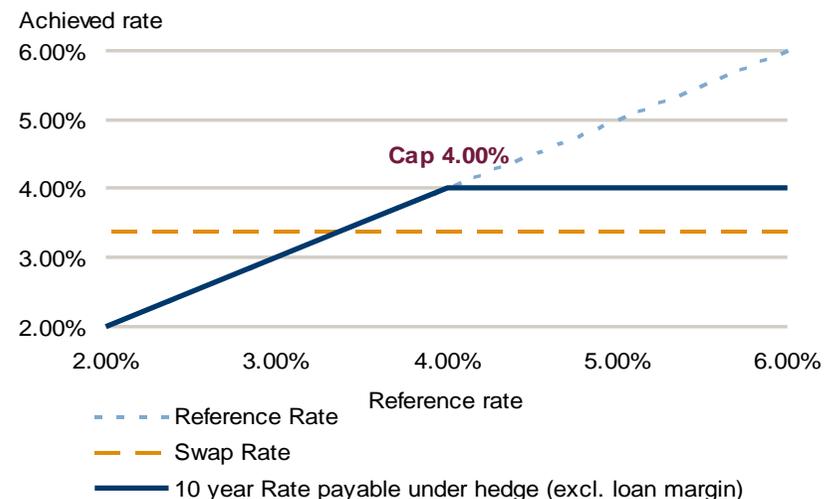
Risks

- ▶ Requirement to pay a premium (either upfront or as a spread over the floating rate index on a running basis)
- ▶ Protection level – i.e., cap option strike – would typically be higher than the fixed rate for equivalent interest rate swap

Identifying the Opportunity

- The company believes that there is a higher probability of rates rising, even though not immediately, and would like to take out worst case insurance. At the same time:
 - ▶ It is either borrowing in floating rate or has a substantial portion of its debt portfolio in floating rate, and/or
 - ▶ It is concerned about the increase in immediate interest costs usually associated with swapping into fixed
 - ▶ It has some flexibility in terms of maximum interest rates and can absorb limited rate increases
 - ▶ It can pay a premium for the purchase of protection
 - ▶ It's a client with a weaker credit profile who would like to hedge (other products may not be available due to lack of lines)

Payoff Diagram



Zero-Premium Collar

Description

- The structure can be viewed as a cost of debt insurance, where the company limits the interest they would pay on their debt by buying a cap option
 - ▶ Debt costs are typically limited at the rate equal to the strike of the cap option
- In order to finance the purchase of protection, the company would sell a floor option on the same floating rate index, thus fixing the minimum interest rate they would pay
 - ▶ Debt cost is, thus, floored at the rate equal to the strike of the floor options
- With certain limitations, the strategy could be considered for hedge accounting treatment
- The trade can be documented either as 2 options, or exchange of LIBOR rates and two overlay options

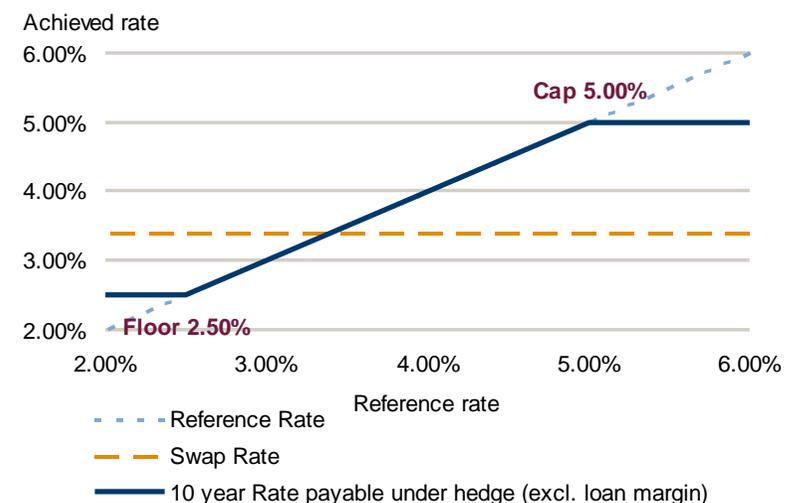
Risks and Benefits

- **Benefits**
 - ▶ No premium is paid
 - ▶ Protection against increases in interest rates at the cap strike level
 - ▶ Reduced or no negative carry – depending on the floor option strike when compared to the spot level of floating rate index
 - ▶ Benefit from lower rates down to the floor level
- **Risks**
 - ▶ Protection level – i.e., cap option strike – would typically be higher than the fixed rate for equivalent interest rate swap
 - ▶ Benefit from lower rates is limited by the floor level

Identifying the Opportunity

- The company believes rates will rise, even though not immediately. It would like to take out worst case insurance but is not prepared to pay premium. At the same time:
 - ▶ It is either borrowing in floating rate or has a substantial portion of its debt portfolio in floating rate or
 - ▶ It has substantial debt in fixed rate and would like to diversify into floating, but is concerned about possible rate increases; and
 - ▶ It is concerned about the increase in immediate interest costs usually associated with swapping into fixed; and
 - ▶ It has some flexibility in terms of maximum interest rates and can absorb limited rate increases

Payoff Diagram



Cancellable Swap

Description

- Cancellable swap is a combination of (1) an interest rate swap and (2) a swaption
- In the swap the company exchanges a set of cashflows calculated based on a floating interest rate for those calculated based on a fixed rate, or vice versa
- To achieve a better rate in (1), the company sells Barclays a swaption allowing the bank to cancel the transaction for no payment of MTM
 - ▶ Right to cancel can be either one-time (European), or periodic (Bermudan)
- Strategy could be considered for partial hedge accounting treatment if split
- Note: Technically, the transaction is the same as an option giving right to enter into the swap

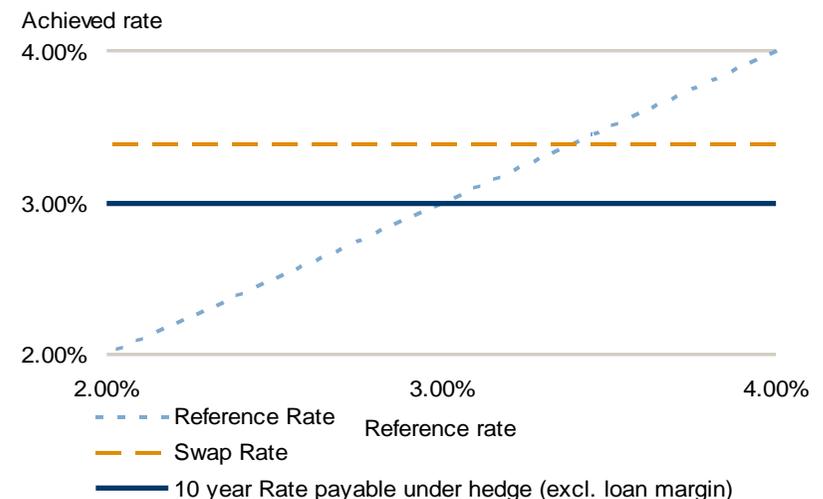
Risks and Benefits

- **Benefits**
 - ▶ More advantageous rates than for a vanilla interest rate swap
- **Risks**
 - ▶ No certainty over actual term of hedging

Identifying the Opportunity

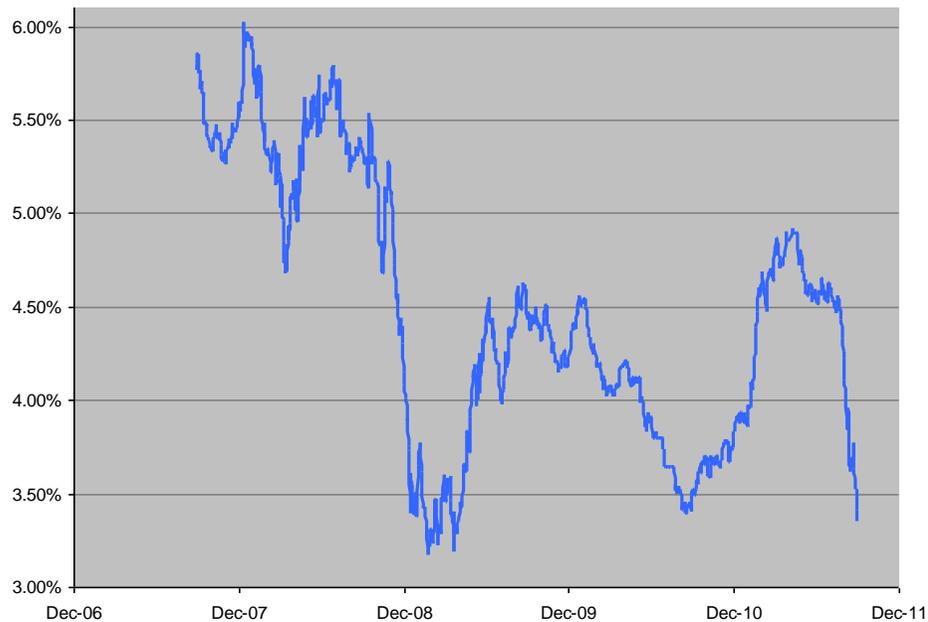
- A company can opt for a cancellable swap vs. vanilla IRS when:
- ▶ It is considering an interest rate swap as in instrument I but does not find current market levels attractive
 - ▶ Volatility is high, and substantial premium can be obtained from selling the swaption
 - ▶ It is willing to accept uncertainty over the actual term of hedge (beyond minimum guaranteed term)
 - ▶ It is less concerned about hedge accounting

Payoff Diagram

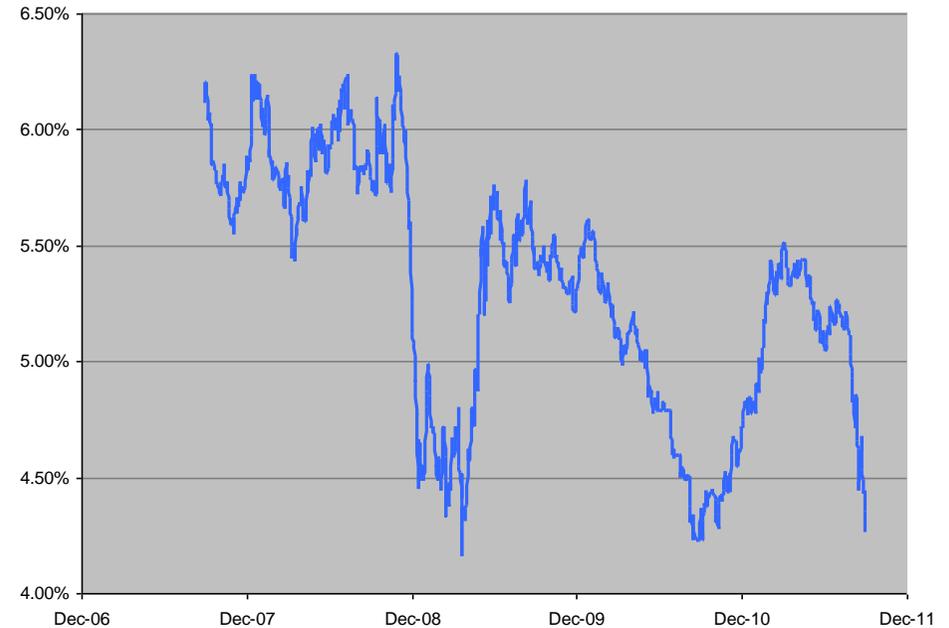


Interest Rates (ILS Rates)

ILS 5Y Swap Rate



ILS 10Y Swap Rate



- The 5Y swap rate is now at 3.35%. This has fallen dramatically from 4.90% in just a couple of months.
- The 10Y swap rate is now at 4.25%. This has also fallen dramatically from 5.50% in just a couple of months.
- With ILS interest rates close to an all time low, it gives a good opportunity for corporates to hedge their ILS floating liabilities into fixed liabilities

Interest Rates (USD Rates)

USD 5Y Swap Rate



USD 10Y Swap Rate



- The 5Y swap rate is now at 1.20%. This has fallen dramatically from 2.50% in just a couple of months.
- The 10Y swap rate is now at 2.20%. This has also fallen dramatically from 3.70% in just a couple of months.
- With USD interest rates at an all time low, it gives a good opportunity for corporates to hedge their USD floating liabilities into fixed liabilities

Interest Rates (EUR Rates)

EUR 5Y Swap Rate



EUR 10Y Swap Rate



- The 5Y swap rate is now at 1.95%. This has fallen dramatically from 3.20% in just a couple of months.
- The 10Y swap rate is now at 2.65%. This has also fallen dramatically from 3.75% in just a couple of months.
- With EUR interest rates close to an all time low, it gives a good opportunity for corporates to hedge their EUR floating liabilities into fixed liabilities

Cross Currency Swaps and Basis

Cross-Currency Swap

Description

- On loan drawdown or bond pricing, client enters into a cross-currency swap under the terms of which:
 - ▶ The exchange rate is established. This rate will be used during the whole term of the contract to (1) execute initial, intermediate (where applicable) and final notional exchanges and (2) determine the equivalent of the given notional in the other currency
- Client would typically receive an interest rate which is equal to the interest rate on the financing, calculated with reference to the notional in the borrowing currency
- Client would pay either a fixed or a floating rate (as established on trade date) in the other currency
- There are typically both initial and final notional exchanges, and amortisation can be taken into account

Identifying the Opportunity

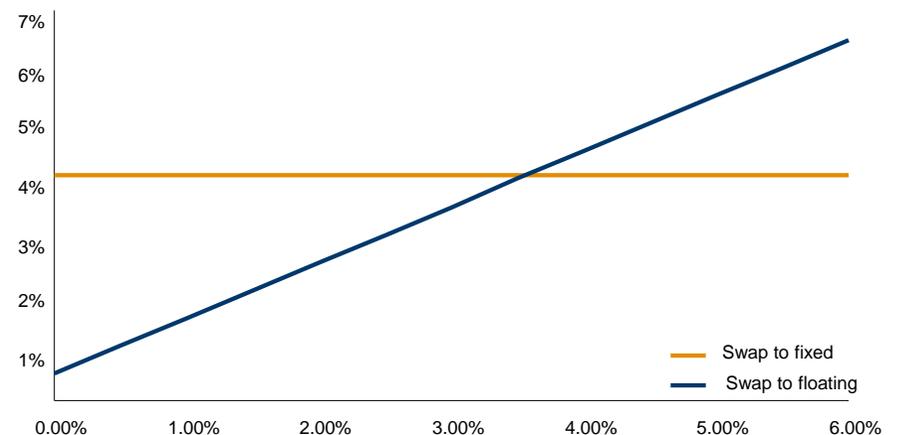
- A company may consider a cross-currency swap when:
 - ▶ It is borrowing in one currency while the majority of the revenues are in another, or
 - ▶ It is seeking to reduce interest by swapping into a currency with lower rates, or
 - ▶ It has a net investment in a foreign currency without offsetting liability on the balance sheet

Risks and Benefits

- No risk from appreciation of the borrowing currency
- No benefit from depreciation of the borrowing currency

	Swap to fixed	Swap to floating
Higher yielding	<ul style="list-style-type: none"> ■ No risk of higher rates ■ No benefit from lower rates 	<ul style="list-style-type: none"> ■ Benefit from lower rates ■ Risk of higher rates
Lower yielding	<ul style="list-style-type: none"> ■ No risk of higher rates ■ No benefit from lower rates 	<ul style="list-style-type: none"> ■ Benefit from lower rates ■ Risk of higher rates

Payoff Diagram



Introduction to Basis Swaps

- Cross-currency basis swaps can be described as an exchange of loans in two currencies on a 3m Libor floating-rate basis, where one leg is generally USD.
- As in a standard currency swap, there is an initial and final principal exchange, where the final exchange is done at the initial exchange rate, since it is like a repayment of loan principal.
- In theory, a stream of unfixed Libor should have the present value of zero; hence, the exchange of two Libor-based loans should be done at a flat spread.
- However, supply and demand for different currency funding and investing results in a non-zero spread for such exchanges.
- By convention, the spread is expressed as the spread added to the non-USD Libor leg; therefore, the USD side is flat to Libor.
- Cross-market basis swaps are mostly traded via the USD.

Factors driving Basis swap levels

- Cross-currency basis swaps are driven, in principle, by funding in a broad sense.
- Short-maturity basis swaps are determined by the FX forward market.
- Medium to long-term basis swaps are affected primarily by bond issuance, but hedging related to exotics also has an impact on the long end.
- Investors can take advantage of supply-demand imbalances to establish attractive funding/carry positions and to trade the basis itself.

USD/ILS Basis Swaps

■ The USD/ILS basis is very negative, lower than both the EUR/USD and GBP/USD. Below are a few reasons as to why this is the case.

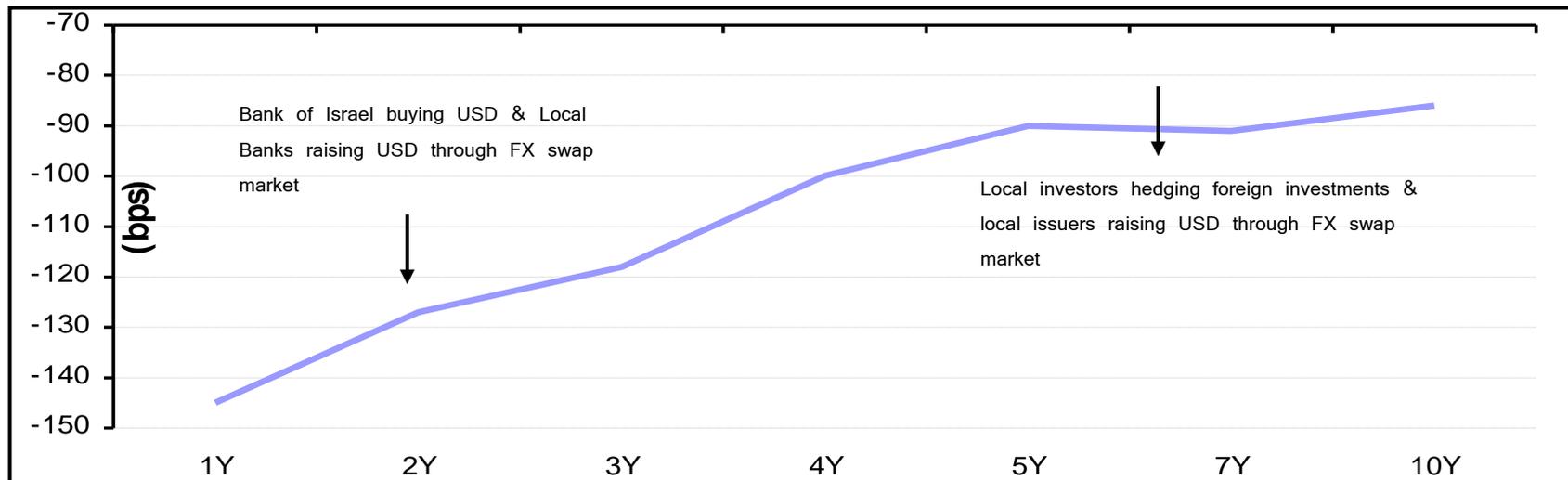
■ Short Term

- 1) Bank of Israel buying USD. This is drying the market out of USD. Therefore banks are using FX swaps to raise their USD.
- 2) Local Banks are raising very cheap ILS from their retail clients. To raise USD from foreign banks is very expensive for them. They therefore use their cheap ILS to raise USD through the FX swap market.

■ Medium – Long Term

- 1) Local investors who have foreign bond and equity investments prefer not to have FX as an asset class. Therefore they are using FX swaps to hedge the cash-flows into ILS, pushing the basis lower. Many insurance companies are doing this.
- 2) Local issuers are raising money in the local credit markets for their foreign endeavours and then swapping it into foreign debt through the basis curve. It's normally cheaper for them than raising foreign capital abroad.

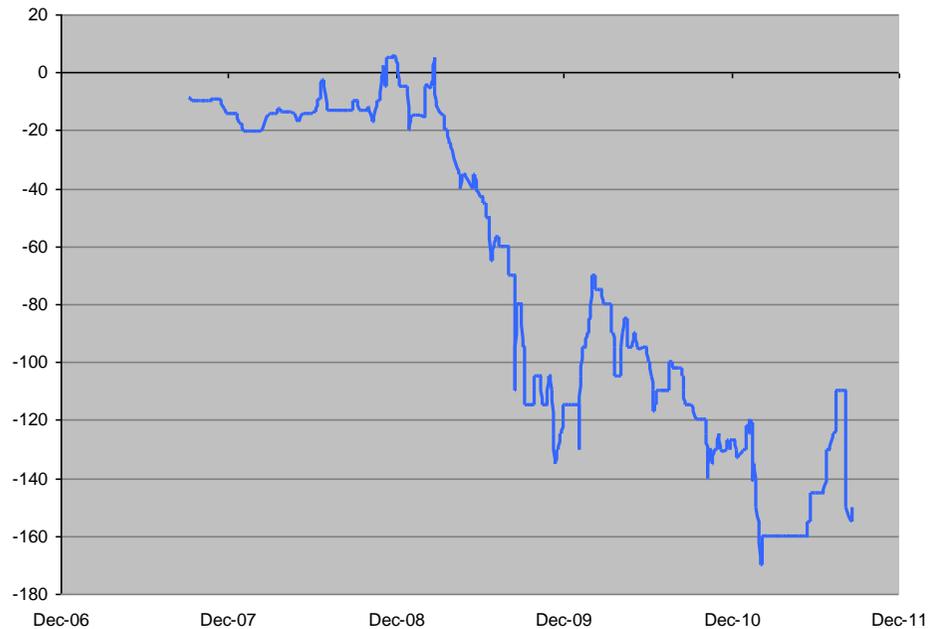
USD/ILS basis swap term structure and drivers



Source: Bloomberg

USD/ILS Basis Swaps (continued)

ILS 2Y Basis



ILS 5Y Basis



- The 2Y basis is now at -1.50%. This has fallen dramatically from -1.10% in just a couple of months.
- The 5Y basis is now at -1.10%. This has also fallen from -0.95% in just a couple of months.
- With the USD/ILS basis close to all time lows, it gives a good opportunity for corporates to hedge their USD liabilities into ILS

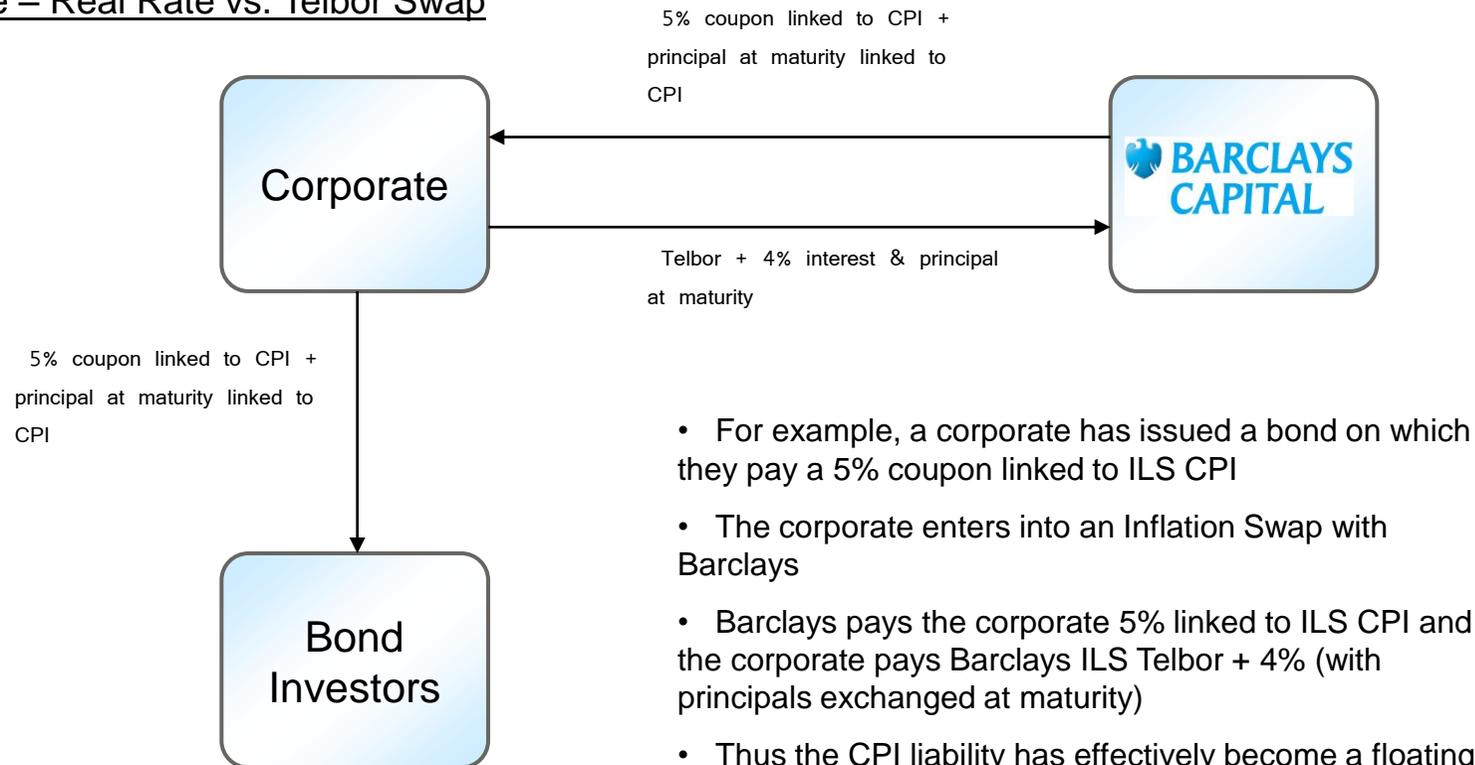
Inflation Swaps

Inflation Swaps

Products

- Inflation Swaps are a good way to swap CPI liabilities into fixed / floating liabilities.
- As a leading market maker in ILS rates, Barclays can offer Inflation Swaps to its clients.
- The two major types of Inflation Swaps are Real Rate vs. Telbor Swaps and Breakeven Swaps

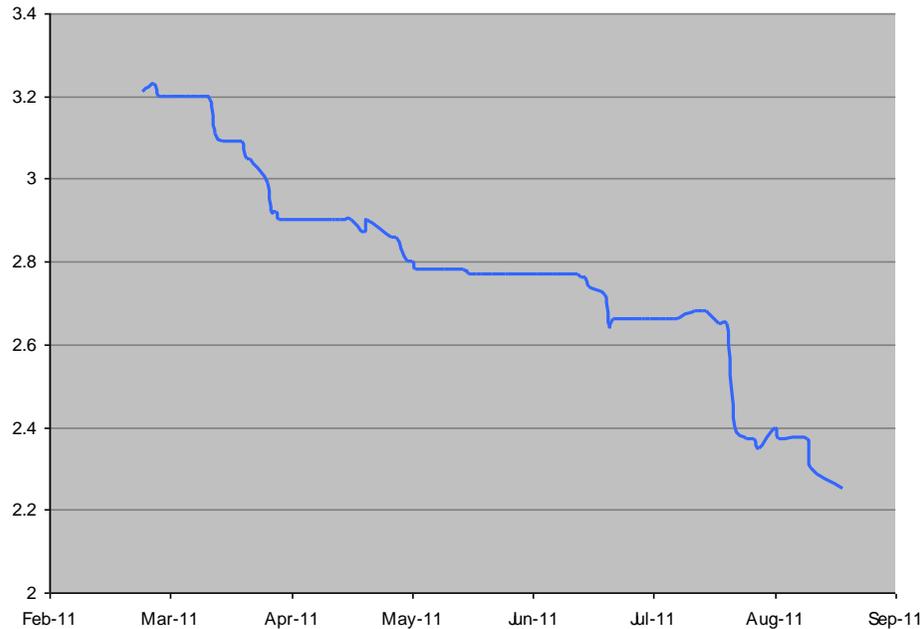
Example – Real Rate vs. Telbor Swap



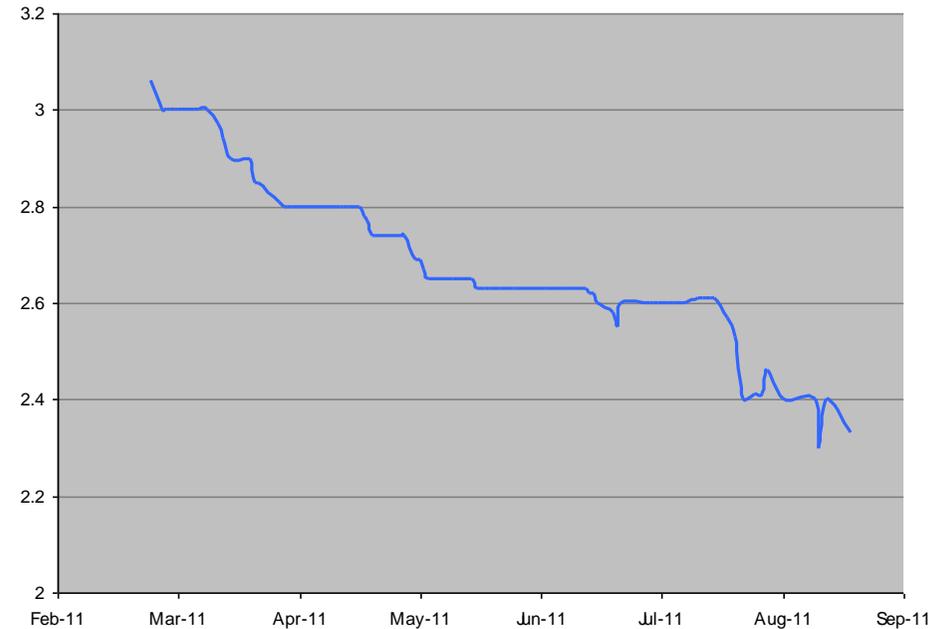
- For example, a corporate has issued a bond on which they pay a 5% coupon linked to ILS CPI
- The corporate enters into an Inflation Swap with Barclays
- Barclays pays the corporate 5% linked to ILS CPI and the corporate pays Barclays ILS Telbor + 4% (with principals exchanged at maturity)
- Thus the CPI liability has effectively become a floating liability

ILS Inflation

5Y Breakeven CPI Forward



10Y Breakeven CPI Forward



- The 5Y BE CPI rate is now at 2.25%. This has fallen dramatically from 3.20% in just a few months.
- The 10Y BE CPI rate is now at 2.35%. This has also fallen dramatically from 3.00% in just a few months.
- With BE CPI rates at such a low, it gives a good opportunity for corporates to hedge their CPI liabilities into fixed liabilities

Foreign Exchange

FX Forward

Description

- A forward contract creates an obligation for both parties to buy one currency for the other at a pre-specified rate and date, in a given amount
- The transaction could be considered for hedge accounting if it mirrors the underlying liability and hedging is into reporting currency
- Notes: A cross-currency swap is a strip of forwards

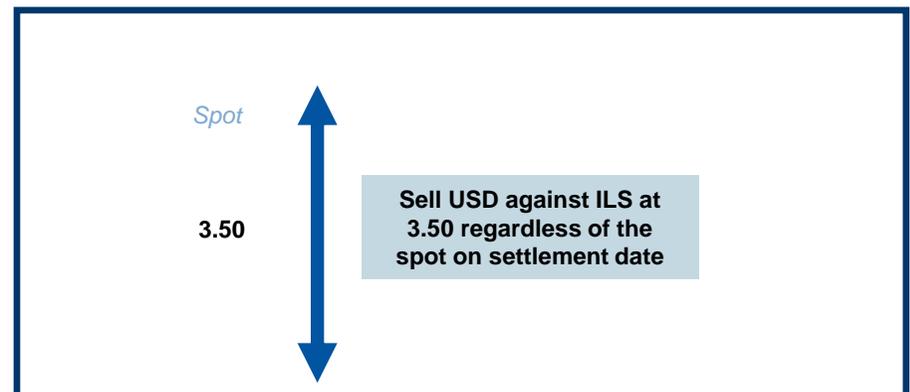
Identifying the Opportunity

- A company has known costs in foreign currency without corresponding revenues and is concerned about the value of the transaction in its home currency
 - ▶ The same would apply for revenues in foreign currency without corresponding costs
- Notes:
 - ▶ A forward is sub-optimal in cases where the underlying exposure is uncertain due to potentially high unwind costs
 - ▶ A strip of forwards can be quoted as a par forward, i.e., giving a weighted average rate

Risks and Benefits

- **Benefits**
 - ▶ No risk from depreciation of the sold currency
 - ▶ Vanilla transaction without payment of premium
- **Risks**
 - ▶ No opportunity to benefit from appreciation of the sold currency

Payoff Example – USD/ILS Forward



Options: Terminology



What distinguishes options from forwards is that with options, the party with the long position has an extra degree of freedom. Since the buyer has the right to walk away from the contract they must pay a fee, known as a **premium**

There are two basic types of options:

Call Option

The right, but not the obligation, to buy the underlying asset by a pre-agreed future date (expiry) at a pre-agreed price (strike).

Put Option

The right, but not the obligation, to sell the underlying asset by a pre-agreed future date (expiry) at a pre-agreed price (strike)

- With FX options there will be a call and a put in each single transaction.
For example if I have the right to buy (“call”) USD I must have to sell (“put”) something in exchange (e.g. GBP)
- Suppose an option buyer is given the right to buy GBP 10mio in exchange for USD 14mio
- This is simultaneously:
 - ▶ A Call option on GBP 10mio against USD, struck at USD 1.40 per GBP
 - ▶ A Put option on USD 14mio against GBP, struck at GBP 0.71 per USD
- To avoid confusion market participants refers to an FX option as:
 - ▶ Call on GBP / Put on USD
 - ▶ GBP Call / USD Put

Options: More Terminology

The value of an option can be described as in-the-money (ITM), out-of-the-money (OTM), or at-the-money (ATM)

ITM

An ITM option is where the strike rate is more favourable than the underlying price

OTM

An OTM option is where the strike rate is less favourable than the underlying price

ATM

An ATM option is where the strike rate is the same as the current market rate

Options can be further categorised by their EXPIRY:

European

The option can **only** be exercised on the expiration date itself

American

The option can be exercised at **anytime** up to expiry

Bermudan

The option can be exercised according to a schedule of agreed dates

Purchase of a Call/Put Option

Description

- Purchased vanilla option gives the client the right but not the obligation to buy or sell a Notional Amount of one currency for another on expiry date
 - ▶ Company would get the right to buy the currency with a call option, and the right to sell the currency with a put option
 - ▶ Option can be European (exercise on given date only) or American (exercise anytime prior to given date)
- Purchased call option on a currency will be exercised if the market rate is higher than the strike, and will expire worthless if it's lower
- Purchased put option on a currency will be exercised if the market rate is lower than the strike, and will expire worthless if it's higher

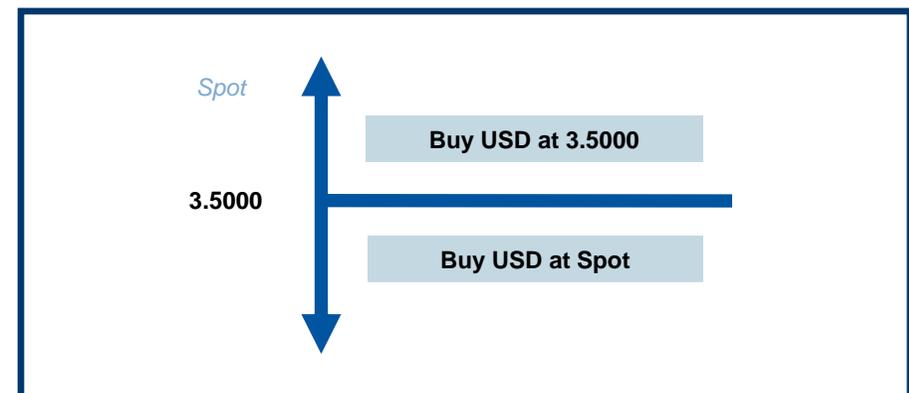
Risks and Benefits

- **Benefits**
 - ▶ Protection against unfavourable FX movements
 - ▶ Right and not obligation to buy or sell (depending on option type) one currency for the other
 - ▶ Full participation in favourable market movements
- **Risks**
 - ▶ Payment of a premium is required: purchase of protection requires a cash outlay on inception (although alternatives with delayed premium are available)
 - ▶ Protection level is typically less advantageous than that of the forward

Identifying the Opportunity

- A company has known costs in foreign currency without corresponding revenues and is concerned about the value of the transaction in its home currency
 - ▶ The same would apply for revenues in foreign currency without corresponding costs
- Note: purchase of an option works better in cases where the underlying exposure is uncertain as it does not create an obligation for the buyer (e.g., M&A situations)

Payoff Example – USD Call/ILS Put



Zero-Premium FX Collar

Description

- An FX Collar provides protection whilst allowing participation in favourable moves in the spot rate for the currency pair as far as the pre-agreed floor rate (sold option strike)
- The company hedges the risk of unfavourable market movements by purchasing an option which gives it the right to buy or sell (depending on the option) a given amount of one currency for the other at a pre-determined strike rate (bought option strike)
- In order to finance the purchase of protection, the company sells an option, which imposes on it an obligation to buy/sell the same amount of one currency for the other (sold option strike)
- Should the rate on expiry fix between the bought option strike and the sold option strike, the client transacts at market rate

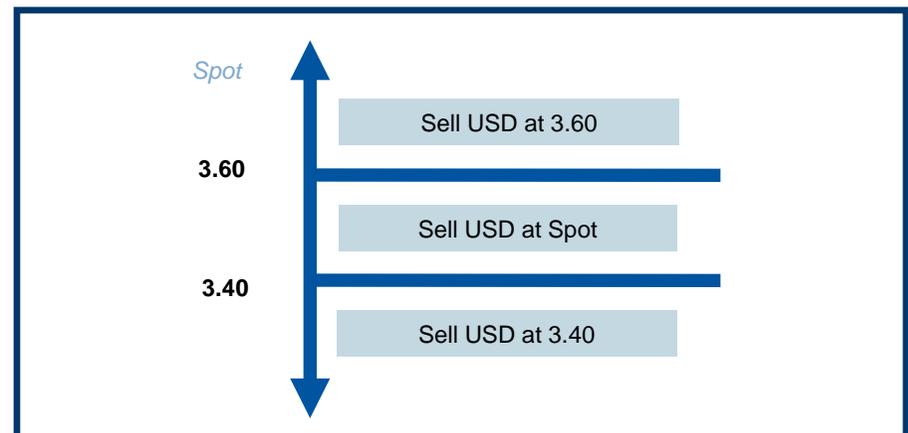
Risks and Benefits

- **Benefits**
 - ▶ Protection against unfavourable FX movements
 - ▶ No premium payable
 - ▶ Participation in favourable market movements down to the sold option strike
- **Risks**
 - ▶ Participation in favourable market movements is limited by the optionality sold (i.e., no participation beyond the sold option strike)
 - ▶ Protection level is typically less advantageous than that of the forward

Identifying the Opportunity

- A company has known costs in foreign currency without corresponding revenues and is concerned about the value of the transaction in its home currency
 - ▶ The same would apply for revenues in foreign currency without corresponding costs
- Company would like to obtain protection from adverse changes in FX rates but does not want to pay the premium

Payoff Example – Selling USD for ILS

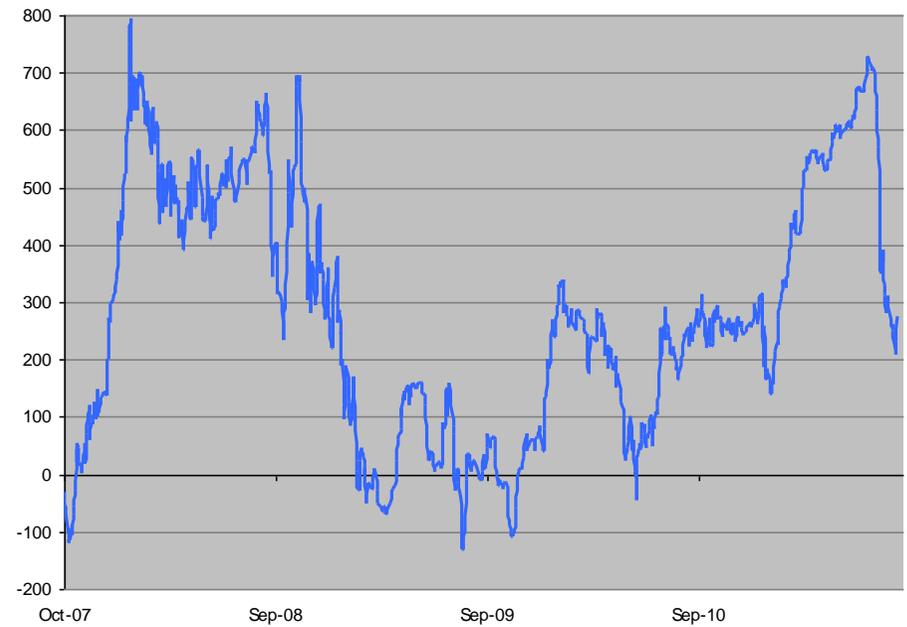


ILS Foreign Exchange Market

USDILS Spot



ILS 1 year Forward Points



- USDILS spot is now at 3.70. ILS has depreciated against USD from 3.40 in only a couple of months.
- The 1 year USDILS forward points are now at 275. These have fallen dramatically from 720 in just a couple of months.

FX Products (continued) – FX TARF

FX TARF

Tenor	6 Months, subject to early Redemption
Currency	USD ILS
USD Notional	5 million (For each Fixing)
Fixing Frequency	Monthly
Ref Spot	3.60
Target Pickup	0.50
Strike	3.80
Ratio	1 : 2
Pickup	For each fixing, Pickup is $\text{MAX}(0, \text{Strike} - \text{Spot on Fixing Date})$
Early Redemption	If the sum of the Pickup on each fixing hits the Target Pickup, the structure terminates with no further exchange of cash flows

- A TARF has cash flows settling on each fixing date
- On every Fixing date, the Spot is compared with the Strike.
 - If the USDILS spot is less than the Strike, Client sells USD Notional and receives ILS @ Strike
 - If the USDILS spot is greater than the Strike, Client sells **twice** the USD Notional and receives ILS @ Strike
- For every fixing, the Pickup is calculated as the difference between the Strike and the spot level (Pickup can only be positive)
- If the Target Pick up is reached, the structure is terminated early
- The structure parameters are flexible to suit the client requirements (fixing frequency, Target pickup, strike and Ratio)

FX Products (continued) – FX TARF

1) The target pick up is achieved after 4 fixings and the structure terminates

Fixing	USDILS spot	Pick up (Cumulative)	Target reached?	Settlement
1 month	3.60	0.20	No	Client sells USD 5M @ 3.80
2 months	3.70	0.10	No	Client sells USD 5M @ 3.80
3 months	3.85	0	No	Client sells USD 10M @ 3.80
4 months	3.60	0.20	Yes	Client sells USD 5M @ 3.80
5 months	1.25			Terminated
6 months	1.30			Terminated

2) The target pick up is never achieved (Worst case scenario)

Fixing	USDILS spot	Pick up (Cumulative)	Target reached?	Settlement
1 month	3.85	0	No	Client sells USD 10M @ 3.80
2 months	3.90	0	No	Client sells USD 10M @ 3.80
3 months	4.00	0	No	Client sells USD 10M @ 3.80
4 months	4.00	0	No	Client sells USD 10M @ 3.80
5 months	4.10	0	No	Client sells USD 10M @ 3.80
6 months	4.10	0	No	Client sells USD 10M @ 3.80

3) The target pick up is achieved in the first fixing and the structure terminates (Best case scenario)

Fixing	USDILS spot	Pick up (Cumulative)	Target reached?	Settlement
1 month	3.30	0.50	Yes	Client sells USD 5M @ 3.80
2 months	1.25			Terminated
3 months	1.30			Terminated
4 months	1.30			Terminated
5 months	1.35			Terminated
6 months	1.40			Terminated

Q & A