Different Types of Swaps
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Swaps are derivative instruments that represent an agreement between two parties to exchange a series of cash flows over a specific period of time. (See related: An Introduction To Swaps.)

There are multiple reasons why parties agree to such an exchange:

- Investment objectives or repayment scenarios may have changed.
- There may be increased financial benefit in switching to newly available or alternative cash flow streams.
- The need may arise to hedge or mitigate risk associated with a floating rate loan repayment.

Swaps offer great flexibility in designing and structuring contracts based on mutual agreement. This flexibility generates many swap variations, with each serving a specific purpose. We will look at different types of swaps and how each participant in the swap may benefit.

Interest Rate Swaps

The most popular types of swaps are plain vanilla interest rate swaps. They allow two parties to exchange fixed and floating cash flows on an interest-bearing investment or loan.

Businesses or individuals attempt to secure cost-effective loans but their selected markets may not offer preferred loan solutions. For instance, an investor may get a cheaper loan in a floating rate market, but he prefers a fixed rate. Interest rate swaps enable the investor to switch the cash flows, as desired.

Assume Paul prefers a fixed rate loan and has loans available at floating
rate (LIBOR+0.5%) or at fixed rate (10.75%). Mary prefers a floating rate loan and has loans available at floating rate (LIBOR+0.25%) or at fixed rate (10%). Due to a better credit rating, Mary has the advantage over Paul in both the floating rate market (by 0.25%) and in the fixed rate market (by 0.75%). Her advantage is greater in the fixed rate market so she picks up the fixed rate loan. However, since she prefers the floating rate, she gets into a swap contract with a bank to pay LIBOR and receive a 10% fixed rate.

Paul borrows at floating (LIBOR+0.5%), but since he prefers fixed, he enters into swap contract with the bank to pay fixed 10.10% and receive the floating rate.

![Diagram of a swap contract]

**Benefits**: Paul pays (LIBOR+0.5%) to the lender and 10.10% to the bank, and receives LIBOR from the bank. His net payment is 10.6% (fixed). The swap effectively converted his original floating payment to a fixed rate, getting him the most economical rate. Similarly, Mary pays 10% to the lender and LIBOR to the bank, and receives 10% from the bank. Her net payment is LIBOR (floating). The swap effectively converted her original fixed payment to the desired floating, getting her the most economical rate. The bank takes a cut of 0.10% from what it receives from Paul and pays to Mary. (See related: [How To Value Interest Rate Swaps](https://www.investopedia.com/articles/investing/052915/differen...alized&utm_campaign=bouncex&utm_term=14451885&utm_medium=email).)

**Currency Swaps**
The transactional value of capital that changes hands in currency markets surpasses that of all other markets. **Currency swaps** offer efficient ways to **hedge forex risk**.

Assume an Australian company is setting up business in the UK and needs **GBP** 10 million. Assuming **AUD/GBP** exchange rate at 0.5, the total comes to AUD 20 million. Similarly, a UK-based company wants to set up a plant in Australia and needs AUD 20 million. The cost of a loan in the UK is 10% for foreigners and 6% for locals, while in Australia it's 9% for foreigners and 5% for locals. Apart from the high loan cost for foreign companies, it might be difficult to get the loan easily due to procedural difficulties. Both companies have the competitive advantage in their domestic loan markets. The Australian firm can take a low-cost loan of AUD 20 million in Australia, while the English firm can take a low-cost loan of GBP 10 million in the UK. Assume both loans need six monthly repayments.

Both companies then execute a currency swap agreement. At the start, the Australian firm gives AUD 20 million to the English firm and receives GBP 10 million, enabling both firms to start business in their respective foreign lands. Every six months, the Australian firm pays the English firm the interest payment for the English loan = (notional GBP amount * interest rate * period) = (10 million * 6% * 0.5) = GBP 300,000 while the English firm pays the Australian firm the interest payment for the Australian loan = (notional AUD amount * interest rate * period) = (20 million * 5% * 0.5) = AUD 500,000. Interest payments continue until the end of the swap agreement, at which time the original notional forex amounts will be exchanged back to each other.

**Benefits:** By getting into a swap, both firms were able to secure low-cost loans and hedge against interest rate fluctuations. Variations also exist in currency swaps, including fixed vs. floating and floating vs.floating. In sum, parties are able to hedge against volatility in forex rates, secure improved lending rates, and receive foreign capital.
Commodity Swaps

Commodity swaps are common among individuals or companies that use raw materials to produce goods or finished products. Profit from a finished product may suffer if commodity prices vary, as output prices may not change in sync with commodity prices. A commodity swap allows receipt of payment linked to the commodity price against a fixed rate.

Assume two parties get into a commodity swap over one million barrels of crude oil. One party agrees to make six-monthly payments at a fixed price of $60 per barrel and receive the existing (floating) price. The other party will receive the fixed and pay the floating.

If crude oil rises to $62 at the end of six months, the first party will be liable to pay the fixed ($60 * 1 million) = $60 million and receive the variable ($62 * 1 million) = $62 million from the second party. Net cash flow in this scenario will be $2 million transferred from the second party to the first. Alternatively, if crude oil drops to $57 in the next six months, the first party will pay $3 million to the second party.

Benefits: The first party has locked in the price of the commodity by using a currency swap, achieving a price hedge. Commodity swaps are effective hedging tools against variations in commodity prices or against variation in spreads between final product and raw material prices.

Credit Default Swaps (CDS)

The credit default swap offers insurance in case of default by a third-party borrower. Assume Peter bought a 15-year long bond issued by ABC, Inc. The bond is worth $1,000 and pays annual interest of $50 (i.e., 5% coupon rate). Peter worries that ABC, Inc. may default so he executes a credit default swap contract with Paul. Under the swap agreement, Peter (CDS buyer) agrees to pay $15 per year to Paul (CDS seller). Paul trusts ABC, Inc. and is ready to take the default risk on its behalf. For the $15 receipt per
year, Paul will offer insurance to Peter for his investment and returns. If ABC, Inc. defaults, Paul will pay Peter $1,000 plus any remaining interest payments. If ABC, Inc. does not default during the 15-year long bond duration, Paul benefits by keeping the $15 per year without any payables to Peter.

**Benefits:** The CDS works as insurance to protect lenders and bondholders from borrowers’ default risk. (Related: [Credit Default Swaps: An Introduction](https://www.investopedia.com/articles/investing/052915/differentiated_securities_cds_swap.htm))

### Zero Coupon Swaps (ZCS)

Similar to the interest rate swap, the zero coupon swap offers flexibility to one of the parties in the swap transaction. In a fixed-to-floating zero coupon swap, the fixed rate cash flows are not paid periodically, but just once at the end of the maturity of the swap contract. The other party who pays floating rate keeps making regular periodic payments following the standard swap payment schedule.

A fixed-fixed zero coupon swap is also available, wherein one party does not make any interim payments, but the other party keeps paying fixed payments as per the schedule.

**Benefits:** The zero coupon swap (ZCS) is primarily used by businesses to hedge a loan in which interest is paid at maturity, or by banks that issue bonds with end-of-maturity interest payments.

### Total Return Swaps (TRS)

A total return swap gives an investor the benefits of owning a security, without actual ownership. A TRS is a contract between a total return payer and total return receiver. The payer usually pays the total return of an agreed security to the receiver, and receives a fixed/floating rate payment in exchange. The agreed (or referenced) security can be a bond, index,
equity, loan, or commodity. The total return will include all generated income and **capital appreciation**.

Assume Paul (the payer) and Mary (the receiver) enter into a TRS agreement on a bond issued by ABC Inc. If ABC Inc.’s share price rises (capital appreciation) and pays a dividend (income generation) during the swap's duration, Paul will pay Mary those benefits. In return, Mary has to pay Paul a pre-determined fixed/floating rate during the duration.

**Benefits**: Mary receives total **rate of return** (in absolute terms) without owning the security and has the advantage of **leverage**. She represents a **hedge fund** or a bank that benefits from the leverage and additional income without owning the security. Paul transfers the credit risk and market risk to Mary, in exchange for a fixed/floating stream of payments. He represents a trader whose long positions can be converted to a short-hedged position while also deferring the loss or gain to the end of swap maturity.

**The Bottom Line**

Swap contracts can be easily customized to meet the needs of all parties. They offer win-win agreements for participants, including intermediaries like banks that facilitate the transactions. Even so, participants should be aware of potential pitfalls because these contracts are executed over the counter without regulations.

https://www.investopedia.com/articles/investing/052915/different-types-swaps.asp