**Understanding Swaps: A Comprehensive Guide to Financial Agreements Between Counterparties**

Didem B. Aykurt

Colorado State University Global

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Dr. Mustafa Sayim

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**Navigating Swaps In-Depth Look at Interest Rate, Currency, and Commodity Swaps**

A swap is a derivative contract through which two parties exchange financial instruments, typically cash flows, based on a specified notional amount or other financial instruments over a specified period. The most common types of swaps are interest rate, currency, and commodity. Interest Rate Swaps are when one party exchanges a fixed interest rate payment for a floating interest rate payment with another party. These involve exchanging cash flows based on different interest rates. Typically, one party pays a fixed rate while the other pays a floating rate. This can help manage interest rate risk. Currency Swaps are two parties exchanging principal and interest payments in different currencies.  The principal and interest payments are traded in other currencies in these swaps. They are often used to hedge against currency risk or to obtain more favorable loan terms in a foreign currency.

Commodity swaps are parties that exchange cash flows related to commodity prices, such as oil or gold. They are used to hedge against price fluctuations in commodities. Credit Default Swaps are when one party pays a periodic fee in exchange for compensation if a specified credit event or these are used to transfer the credit exposure of fixed income products between parties. One party pays a periodic fee in exchange for compensation if a specified credit event, such as a default, occurs. Swaps are used for various purposes, including hedging against risks, speculating on financial markets, and managing cash flows. Swaps are typically structured as follows:

* Notional Principal: The amount on which the exchanged cash flows are based. This principle is not usually exchanged.
* Payment Dates: The dates on which the cash flows are exchanged.
* Fixed and Floating Rates: In interest rate swaps, one leg of the swap pays a fixed rate, while the other pays a floating rate, often tied to a benchmark like LIBOR.

**Example of an Interest Rate Swap**

1. To determine how many Pakistani rupees (PKR) Nevermore, Inc. needs to raise USD 1 million, we can use the given exchange rate of $0.02 per PKR. Here’s the calculation:

Exchange Rate: $0.02 per PKR

Amount Needed in USD: $1,000,000

To find the amount in PKR, we divide the amount needed in USD by the exchange rate:

Amount in PKR =

Amount in PKR = = 50,000,000 PKR

So, Nevermore, Inc. needs to obtain 50,000,000 PKR to raise USD 1 million.

1. To determine the financial cost of the bonds issued by Dakota Corporation, we need to calculate the total amount paid in USD over the three years, considering the expected appreciation of the Russian ruble (RUB). Here’s the step-by-step process:

Initial Bond Amount: 5 million RUB

Coupon Rate: 17%

**Year 1**

Coupon Payment in RUB= 5,000,000 \* 0.17 = 850,000 RUB

Exchange Rate: $0.03 per RUB

Coupon Payment in USD: 850,000 \* 0.03 = 25,500

**Year 2**

Coupon Payment in RUB: 850,000 RUB

Exchange Rate: 0.032 per RUB

Coupon payment in USD = 850,000\*0.032 = 27,200 USD

**Year 3**

Coupon Payment in RUB: 850,000 RUB

Exchange Rate: $0.034 per RUB

Coupon Payment in USD = 850,000\*0.034 = 28,900 USD

Principal Repayment in RUB: 5,000,000 RUB

Exchange Rate: $0.035 per RUB

Principal Repayment in USD = 5,000,000 \* 0.035 = 175,000 USD

**Total Payment in USD**

Year 1: $25,500

Year 2: $27,200

Year 3: $28,900 (coupon) + $175,000 (principal)= $203,900

Total Financial Cost = $25,500 + $27,200 + $203,900 = $256,600 USD

1. Since Waddell, Inc. negotiated a forward contract to sell €200,000 at a forward rate of $1.10 per euro, the spot rate on September 1 does not affect the transaction. The forward contract locks in the exchange rate, providing certainty about the amount Waddell will receive. Here’s the calculation:

Forward Rate: $1.10 per euro

Amount in Euros: €200,000

To find the amount in USD, we multiply the amount in euros by the forward rate:

Amount in USD = Amount in Euros \* Forward Rate

Amount in USD = €200,000 \* $1.10 = $220,000 USD

So, Waddell, Inc. will receive USD 220,000 for the €200,000

1. To determine whether the forward rate is at a discount or a premium, we compare the forward rate to the spot rate. If the forward rate is lower than the spot rate, the forward rate is at a discount. If it is higher, it is at a premium. In this case:

Spot Rate: $1.63

Forward Rate: $1.60

Since the forward rate ($1.60) is lower than the spot rate ($1.63), the forward rate is at a discount. To calculate the percentage discount, we use the following formula:

Percentage Discount = \* 100

Plugging in the values:

Percentage Discount = ( ) \*100

Percentage Discount = () \* 100 ᵙ 1.84%

So, the forward rate is at a discount of approximately 1.84%.

1. To determine the euro's annualized forward premium or discount, we need to calculate the difference between the forward rate and the spot rate and then annualize this difference. Here are the solutions:

Spot Rate: $1.05

Forward rate: $1.07

Period: 90 days (or 0.25 years)

**Calculate the Forward Premium/Discount**

Forward Premium/Discount =

Forward Premium/Discount = = ᵙ 0.01905

**Annualize the Forward Premium/Discount**

Since the period is 90 days, we annualize it by multiplying by the number of such periods in a year (365/90):

Annualize the Forward Premium/Discount = 0.01905 \* 365/90 ᵙ 0.0773

**Convert to Percentage**

Annualize the Forward Premium/Discount = 0.773 \*100 ᵙ 7.73%

So, the euro is trading at an annualized forward premium of approximately 7.73%.

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