# InterN.docx International Relationships in Finance

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## Part CR Currency relationships

### CR1a Which sale gives the most USD revenue

Suppose a company in the USA has a chance to sell its product internationally for either (i) 36000 krone or (ii) 43200 rubles. Shipping and other costs are identical. The company bases its decisions on today’s currency exchange rates: 1 USD = 5.60 krone , and 1 USD = 4.38 rubles . Which statement is most accurate?

{ANSWER: E ; xlADDRESS: Intntl!$B$41 }

/\a. the company receives $3,434 more USD if they make the deal in krone

/\b. the company receives $2,986 more USD if they make the deal in krone

/\c. the company receives $3,950 more USD if they make the deal in krone

/\d. the company receives $2,986 more USD if they make the deal in rubles

/\e. the company receives $3,434 more USD if they make the deal in rubles

### CR1b Which purchase costs the least USD

Suppose a company in the USA has a chance to buy its product internationally for either (i) 36000 krone or (ii) 43200 rubles. Shipping and other costs are identical. The company bases its decisions on today’s currency exchange rates: 1 USD = 5.60 krone , and 1 USD = 4.38 rubles . Which statement is most accurate?

{ANSWER: D ; xlADDRESS: Intntl!$F$41 }

/\a. the company pays $3,434 less USD if they make the deal in rubles

/\b. the company pays $4,542 less USD if they make the deal in rubles

/\c. the company pays $3,950 less USD if they make the deal in rubles

/\d. the company pays $3,434 less USD if they make the deal in krone

/\e. the company pays $4,542 less USD if they make the deal in krone

### CR1c Which OR(sale,purchase) is best in USD

Suppose a company in the USA has a chance to buy its product internationally for either (i) 36000 krone or (ii) 43200 rubles. Shipping and other costs are identical. The company bases its decisions on today’s currency exchange rates: 1 USD = 5.60 krone , and 1 USD = 4.38 rubles . Which statement is most accurate?

{ANSWER: E ; xlADDRESS: Intntl!$J$41 }

/\a. the company pays $4,542 less USD if they make the deal in rubles

/\b. the company pays $3,950 less USD if they make the deal in krone

/\c. the company pays $3,950 less USD if they make the deal in rubles

/\d. the company pays $3,434 less USD if they make the deal in rubles

/\e. the company pays $3,434 less USD if they make the deal in krone

### CR5 Contrast futures v. options hedge from selling currency

Your company headquarters in the USA expects revenue of 400,000 koruna from a wholly-owned subsidiary in Slovakia in three months. Today’s exchange rates are:

spot market: 1 koruna = 0.0570 USD

futures market for delivery in 3 months: 1 koruna = 0.0518 USD

options market: put option with strike of 5 US cents on 1 koruna with expiry in 3 months has a price of 1.00 US cents.

Your company exchanges the koruna into USD upon receiving the revenue. Suppose the spot exchange rate that you expect in three months is:

1 koruna = 0.0490 USD.

Select the most accurate statement about the outcomes if your expectation indeed is correct.

{ANSWER: C ; xlADDRESS: Intntl!$B$67 CLUES: revenue at expected spot $19,600 ; revenue at today’s spot: $22,800 ; option cost: $4,000 ; option payoff: $400 ; option net revenue $16,000 }

/\a. hedging the transaction with a short futures position costs the company $1120 relative to the revenue received had no hedging occurred

/\b. hedging the transaction with a long put option position saves the company $3600 relative to the revenue received had no hedging occurred

/\c. the company receives $3200 more revenue if they were able to exchange at the price in today’s spot market instead of exchanging at the spot price expected in three months

/\d. Two choices, A and C, are correct

/\e. The three A-B-C choices are all correct

*Multiple setup (CR4m)*

The company requires revenue of $175,000 USD on a particular export sale in order to cover costs and fair profit. The company accepts payment in the purchaser’s local currency, which is krone. Today’s spot rate is that 1 USD = 7.66 krone. Suppose the company makes a bid in krone to sell the product such that at today’s spot rate the required revenue is obtained. The purchaser agrees to pay the bid.

{xlADDRESS: Intntl!!$A$75 }

### CR4am Find required bid in foreign currency

How much in krone is the bid?

{ANSWER: C ; xlADDRESS: Intntl!$B$85 }

/\a. 1,474,600 b. 1,007,100 c. 1,340,500 d. 1,107,900 e. 1,218,600

#### *CR4bm Find revenue from export sale given x-rate fluctuation*

Several weeks later at time of delivery the purchaser makes the agreed upon payment in krone. By that time, however, the price of the krone appreciates 10% relative to the USD. How much does the company receive in USD from the sale?

{ANSWER: E ; xlADDRESS: Intntl!$F$85 ; CLUES: New currency per USD: 6.964 }

/\a. $144,600 b. $131,500 c. $175,000 d. $159,100 e. $192,500

### CR4cm Find surplus/shortfall from export sale given x-rate fluctuation

Several weeks later at time of delivery the purchaser makes the agreed upon payment in krone. By that time, however, the price of the krone appreciates 10% relative to the USD. How much does the company receive in USD from the sale?

{ANSWER: E ; xlADDRESS: Intntl!$F$85 ; CLUES: New currency per USD: 6.964 }

/\a. The company realizes a shortfall of $17,500 .

/\b. The company realizes a surplus of $13,200 .

/\c. The company realizes a surplus of $15,200 .

/\d. The company realizes a shortfall of $15,200 .

/\e. The company realizes a surplus of $17,500 .

TWD: FOR CR6:

The table below indicates the quantity of currency in each row required to purchase 1 unit of the currency in each column.

koruna dinar

franc 7.30 5.45

dinar 1.07

### CR6 Triangle arbitrage and valuation inferences

One koruna is worth 7.30 franc and 1.07 dinar. One dinar is worth 5.45 franc. Which statement is most consistent with the triangle arbitrage equilibrium condition?

{ANSWER: B ; xlADDRESS: Intntl!$B$112 }

/\a. the koruna is overvalued relative to the dinar

/\b. the koruna is overvalued relative to the franc

/\c. the dinar is overvalued relative to the franc

/\d. Two choices, A and C, are correct

/\e. None of the A-B-C choices are correct

TWD: FOR CR2m

Listed below is the price measured in peso required for purchasing one unit of the currency in each column heading.

rupee krone

peso 4.90 6.76

*Multiple setup (CR2m)*

One rupee is worth 4.90 peso and one krone is worth 6.76 peso.

{xlADDRESS: Intntl!R120C1 }

### CR2am Triangle arbitrage, find initial equilibrium exchange rate

Which statement about current exchange rates is most consistent with the concept of triangle arbitrage?

{ANSWER: B ; xlADDRESS: Intntl!$B$134 }

/\a. the price for one rupee probably is 1.38 krone

/\b. the price for one krone probably is 1.38 rupee

/\c. the price for one krone probably is 0.72 rupee

/\d. the price for one rupee probably is 0.78 krone

/\e. the price for one krone probably is 0.78 rupee

### CR2bm Triangle arbitrage, find equilibrium exchange rate given appreciation

Because of differences in economic prospects, the price of the rupee is expected to appreciate 20% relative to the peso, and the price of the krone is expected to depreciate 25% relative to the peso. Which statement about expected exchange rates is most consistent with the concept of triangle arbitrage?

{ANSWER: A ; xlADDRESS: Intntl!$G$134; CLUES: new entries in table: 5.88 , 5.07 }

/\a. the price for one krone probably will be 0.86 rupee

/\b. the price for one rupee probably will be 0.72 krone

/\c. the price for one krone probably will be 1.16 rupee

/\d. the price for one krone probably will be 0.72 rupee

/\e. the price for one rupee probably will be 0.86 krone

TWD: FOR ALL CR3

Today’s currency exchange rates are:

*price in marrka for*

*currency 1 currency listed at left*

franc 7.00

koruna 5.26

### CR3a Triangle arbitrage, find equilibrium cross-rate

Today one franc is worth 7.00 marrka and one koruna is worth 5.26 marrka. Find the equilibrium cross-price in franc for one koruna.

{ANSWER: C ; xlADDRESS: Intntl!$B$161 }

/\a. 0.83 b. 1.00 c. 0.75 d. 0.91 e. 1.10

### CR3b Triangle arbitrage, find equilibrium rate and overvalued currency

Today one franc is worth 7.00 marrka and one koruna is worth 5.26 marrka. Furthermore, the actual market exchange rate is that 1 franc = 1.45 koruna . Which statement is most consistent with the triangle arbitrage concept?

{ANSWER: E ; xlADDRESS: Intntl!$F$161 }

/\a. the equilibrium rate is 1 franc = 0.75 koruna and the koruna is relatively undervalued

/\b. the equilibrium rate is 1 franc = 0.86 koruna and the koruna is relatively undervalued

/\c. the equilibrium rate is 1 koruna = 0.99 franc and the franc is relatively overvalued

/\d. the equilibrium rate is 1 koruna = 0.86 franc and the franc is relatively overvalued

/\e. the equilibrium rate is 1 koruna = 0.75 franc and the franc is relatively overvalued

### CR3c Triangle arbitrage, find %change wealth due to arbitrage

Today one franc is worth 7.00 marrka and one koruna is worth 5.26 marrka. Furthermore, the actual market exchange rate is that 1 franc = 1.45 koruna . How much can you increase your wealth by executing a triangle arbitrage?

{ANSWER: C ; xlADDRESS: Intntl!$K$161 }

/\a. 10.8% b. 8.1% c. 9.0% d. 9.9% e. 11.9%

TWD: FOR CR7

Today’s *Wall Street Journal* shows the following:

USD equivalence

currency per unit of currency

bhat 4.30

krone 5.72

### CR7 Exchange rates with triangle arbitrage and appreciation/depreciation

Today’s *Wall Street Journal* shows that one bhat is worth 4.30 USD and one krone is worth 5.72 USD. Over the next one year the price of the bhat is expected to depreciate 4% relative to the USD, and the price of the krone will depreciate 11% relative to the USD. According to the triangle arbitrage equilibrium, find the prices today and next year measured in bhat of acquiring one krone.

{ANSWER: B ; xlADDRESS: Intntl!$B$19 }

/\a. today one krone is worth 1.53 bhat whereas next year’s price is 1.07

/\b. today one krone is worth 1.33 bhat whereas next year’s price is 1.23

/\c. today one krone is worth 1.33 bhat whereas next year’s price is 1.07

/\d. today one krone is worth 1.76 bhat whereas next year’s price is 1.23

/\e. today one krone is worth 1.76 bhat whereas next year’s price is 1.07

## Part PR Parity relationships

### PR1a Relative purchasing power parity, find next year's rate

Today’s spot exchange rate is that 1 zloty = 6.30 yuan. Everybody correctly knows that over the next year inflation will equal 10% in Poland (zloty) and 13% in China (yuan). If exchange rate movements strictly adhere to the Purchasing Power Parity relation (PPP), how many yuan next year will equal 1 zloty?

ANSWER: E ; xlADDRESS: Intntl!$B$206 }

/\a. 5.88 b. 7.12 c. 5.35 d. 7.83 e. 6.47

### PR1b Relative purchasing power parity, find next year's rate and inference

Today’s spot exchange rate is that 1 zloty = 6.30 yuan. Everybody correctly knows that over the next year inflation will equal 10% in Poland (zloty) and 13% in China (yuan). If exchange rate movements strictly adhere to the Purchasing Power Parity relation (PPP), which selection best completes the following statement:

PPP implies an exchange rate next year of \_\_\_\_(i)\_\_\_\_\_\_\_ yuan per zloty, and the yuan is expected to \_\_\_\_\_(ii)\_\_\_\_\_\_ relative to the zloty.

Fill in the blanks above with the correct selection.

{ANSWER: C ; xlADDRESS: Intntl!$F$206 }

/\a. i) 7.44 and ii) appreciate

/\b. i) 5.63 and ii) appreciate

/\c. i) 6.47 and ii) depreciate

/\d. i) 5.63 and ii) depreciate

/\e. i) 7.44 and ii) depreciate

### PR2 BigMac purchasing power parity, find next year's rate

A BigMac costs 22.2 zloty in Poland and 202.1 yuan in China. Suppose that business and other costs for the McDonalds in both countries are identical. Inflation over the next year is 20% in Poland and 15% in China. If exchange rate movements over the next year reestablish the Purchasing Power Parity relation, what is the exchange rate (yuan per zloty) for next year?

{ANSWER: D ; xlADDRESS: Intntl!$B$184 }

/\a. 11.61 b. 10.56 c. 12.77 d. 8.72 e. 9.60

### PR4a BigMac PPP, find today’s intrinsic cross-rate

A BigMac costs 6.5 dinar in Bahrain and 7.8 yuan in China. Suppose that business and other costs for the McDonalds in both countries are identical. The actual cross-rate between the two currencies is that one yuan is worth 0.54 dinar. According to relative purchasing power parity for BigMacs, find the “intrinsic” spot price measured in dinar for one yuan.

{ANSWER: E ; xlADDRESS: Intntl!$B$248 }

/\a. 0.69 b. 0.75 c. 0.62 d. 0.91 e. 0.83

### PR4b BigMac PPP, find today’s intrinsic cross-rate and make inference

A BigMac costs 6.5 dinar in Bahrain and 7.8 yuan in China. Suppose that business and other costs for the McDonalds in both countries are identical. The actual cross-rate between the two currencies is that one yuan is worth 0.54 dinar. According to relative purchasing power parity for BigMacs, find the “intrinsic” spot price measured in dinar for one yuan. Determine whether the yuan is predicted to appreciate or depreciate.

{ANSWER: A ; xlADDRESS: Intntl!$F$248 }

/\a. the price is 0.83 dinar and the yuan should appreciate

/\b. the price is 0.72 dinar and the yuan should appreciate

/\c. the price is 0.95 dinar and the yuan should appreciate

/\d. the price is 0.72 dinar and the yuan should depreciate

/\e. the price is 0.83 dinar and the yuan should depreciate

### PR3a Interest rate parity, find no-arb forward rate

The one-year risk-free interest rate is 4.00% in Slovakia (currency is the koruna) and 5.00% in Poland (currency is the zloty). Today’s spot exchange rate (zloty per koruna) is 4.10. According to the Interest Rate Parity relation, what is today’s equilibrium 1-year forward exchange rate (zloty per koruna)?

{ANSWER: A ; xlADDRESS: Intntl!$B$227 }

/\a. 4.14 b. 5.01 c. 4.55 d. 3.76 e. 3.42

### PR3b Interest rate parity, find no-arb forward rate and inference

The one-year risk-free interest rate is 4.00% in Slovakia (currency is the koruna) and 5.00% in Poland (currency is the zloty). Today’s spot exchange rate (zloty per koruna) is 4.10. and the one-year forward rate is 3.45. Choose the statement about today’s equilibrium 1-year forward exchange rate (zloty per koruna) that is most consistent with the Interest Rate Parity relation.

{ANSWER: A ; xlADDRESS: Intntl!$B$227R6 }

/\a. the equilibrium forward rate is 4.14 and in the forward market the koruna is relatively undervalued

/\b. the equilibrium forward rate is 5.47 and in the forward market the koruna is relatively undervalued

/\c. the equilibrium forward rate is 4.76 and in the forward market the koruna is relatively overvalued

/\d. the equilibrium forward rate is 5.47 and in the forward market the koruna is relatively overvalued

/\e. the equilibrium forward rate is 4.76 and in the forward market the koruna is relatively undervalued

### PR3c Find no-arb spot price with IRP

The one-year risk-free interest rate is 4.00% in Slovakia (currency is the koruna) and 5.00% in Poland (currency is the zloty). Today’s spot exchange rate (zloty per koruna) is 4.10. and the one-year forward rate is 3.45. Find today’s equilibrium spot exchange rate (zloty per koruna) that is most consistent with the Interest Rate Parity relation.

{ANSWER: D ; xlADDRESS: Intntl!$J$227 }

/\a. 4.55 b. 3.76 c. 5.00 d. 3.42 e. 4.13

### PR3d Find no-arb spot price & inference with IRP

The one-year risk-free interest rate is 4.00% in Slovakia (currency is the koruna) and 5.00% in Poland (currency is the zloty). Today’s spot exchange rate (zloty per koruna) is 4.10. and the one-year forward rate is 3.45. Choose the statement about today’s equilibrium spot exchange rate (zloty per koruna) that is most consistent with the Interest Rate Parity relation.

{ANSWER: B ; xlADDRESS: Intntl!$N$227 }

/\a. the equilibrium spot rate is 3.42 and in the spot market the koruna is relatively undervalued

/\b. the equilibrium spot rate is 3.42 and in the spot market the koruna is relatively overvalued

/\c. the equilibrium spot rate is 3.93 and in the spot market the koruna is relatively undervalued

/\d. the equilibrium spot rate is 2.97 and in the spot market the koruna is relatively overvalued

/\e. the equilibrium spot rate is 2.97 and in the spot market the koruna is relatively undervalued

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