# RiskMgt1.docx Risk management with futures contracts

*This document accompanies Elements of Finance by Tom Downs and permission is granted to any teacher or student to use this content for any non-profit teaching/learning objective.*

## Part FT Futures contracts and relations

### FT2a Find arbitrage profit in futures mispricing

Your company buys, sells, and stores warehouses full of gold. Today, the futures price for gold with delivery in one year is $340 per ounce. The spot price is $280 per ounce. Your company is able to invest and borrow at the risk-free interest rate of 9.2%. Furthermore, your company can, if necessary, store and safeguard an additional 1500 ounces of gold for virtually free. What is the present value of arbitrage profits on 1500 ounces of gold?

{ANSWER: A ; xlADDRESS: Options!$B$181 ; CLUES: $311.36 }

/\a. $47,033 b. $51,736 c. $62,601 d. $42,757 e. $56,910

### FT2b Find arbitrage profit and strategy in futures mispricing

Your company buys, sells, and stores warehouses full of gold. Today, the futures price for gold with delivery in one year is $340 per ounce. The spot price is $280 per ounce. Your company is able to invest and borrow at the risk-free interest rate of 9.2%. Furthermore, your company can, if necessary, store and safeguard an additional 1500 ounces of gold for virtually free. Which statement about the present value of arbitrage profits on 1500 ounces of gold is correct?

{ANSWER: E ; xlADDRESS: Options!$F$181 ; CLUES: $311.36 }

/\a. the total arbitrage profit of $62,201 is obtained by taking a long position in the futures market and a short position in the spot market

/\b. the total arbitrage profit of $62,201 is obtained by taking a short position in the futures market and a long position in the spot market

/\c. the total arbitrage profit of $47,033 is obtained by taking a long position in the futures market and a short position in the spot market

/\d. the total arbitrage profit of $54,088 is obtained by taking a short position in the futures market and a long position in the spot market

/\e. the total arbitrage profit of $47,033 is obtained by taking a short position in the futures market and a long position in the spot market

### FT1a What is the profit on a speculative futures position

Awhile ago futures contracts for crawdads (1750 lbs. per contract) traded at a futures price of $2.60 per lb. Today the futures price is $2.48 . The margin on the contract is 1.00%. For an investor that was long one contract during this period, what is the profit (or loss)?

{ANSWER: E ; xlADDRESS: Options!$B$197 ; CLUES: margin = $45.50 }

/\a. ($158) b. ($191) c. ($174) d. ($143) e. ($210)

### FT1b What is the ROR on a speculative futures position

Awhile ago futures contracts for crawdads (1750 lbs. per contract) traded at a futures price of $2.60 per lb. Today the futures price is $2.48 . The margin on the contract is 1.00%. For an investor that was long one contract during this period, what is the rate of return?

{ANSWER: E ; xlADDRESS: Options!$F$197 ; CLUES: margin = $45.50 }

/\a. -420% b. -614% c. -558% d. -508% e. -462%

### FT1c What is the AND(profit,ROR) on a speculative futures position

Awhile ago futures contracts for crawdads (1750 lbs. per contract) traded at a futures price of $2.60 per lb. Today the futures price is $2.48 . The margin on the contract is 1.00%. For an investor that was long one contract during this period, which statement is correct?

{ANSWER: B ; xlADDRESS: Options!$J$197 ; CLUES: margin = $45.50 }

/\a. the profit (or loss) is ($210) and the rate of return is -531%

/\b. the profit (or loss) is ($210) and the rate of return is -462%

/\c. the profit (or loss) is ($278) and the rate of return is -462%

/\d. the profit (or loss) is ($278) and the rate of return is -531%

/\e. the profit (or loss) is ($242) and the rate of return is -462%

*Multiple setup (FT4m)*

The Company hopes to win a job for delivering its product to an overseas client. The Company must submit a bid to the client stating the cost of the job, and the client decides whether or not to hire the Company. The Company estimates they can produce the product over the next few months at a pretax cost of $100,000 ; their target pretax profit margin (= Pretax profit ÷ Sales revenue ) for this job is 23%. The Company is willing to accept payment from the client in foreign currency (peso). The spot exchange rate today is 1 USD = 1.1700 peso.

{xlADDRESS: Options!R205C1 ; CLUES: bid in USD= $129,870 ; new exchange rate = 1.2316 }

### FT4am Find international bid in foreign currency required to get target profit margin

The company makes a bid such that if exchange rates remain constant the company gets the target pretax profit margin. How much, in peso, does the bid equal?

{ANSWER: A ; xlADDRESS: Options!$B$214 }

/\a. 151,948 b. 167,143 c. 114,161 d. 125,577 e. 138,135

### FT4bm Find actual profit on international bid given a change in exchange rates

The client agrees to pay the Company its requested bid, but by the time the Company receives the payment, the price of the peso has depreciated by 5 percent relative to the dollar. How much is the actual pretax profit in USD?

{ANSWER: D ; xlADDRESS: Options!$F$214 }

/\a. $21,251 b. $19,320 c. $25,714 d. $23,377 e. $28,286

### FT4cm Find actual profit margin on international bid given a change in exchange rates

The client agrees to pay the Company its requested bid, but by the time the Company receives the payment, the price of the peso has depreciated by 5 percent relative to the dollar. How much is the actual pretax profit margin?

{ANSWER: D ; xlADDRESS: Options!$J$214 }

/\a. 22.9% b. 17.2% c. 20.8% d. 18.9% e. 15.7%

### FT5a Find profit on speculative currency futures given a change in exchange rates

A futures contract provides the opportunity to lock-in the exchange rate at which you can buy or sell 200,000 sucre . The futures price, quoted in U.S. cents per sucre, currently is 94.30 . The margin requirement is 2.75%. You enter short on one contract. Thereafter, the price of the sucre depreciates 3% relative to the USD. You then close your futures position. What was your profit (loss)?

{ANSWER: E ; xlADDRESS: Options!$B$231 ; new futures price = 91.47 ; margin = $5,187 }

/\a. $5,144 b. $4,676 c. $3,864 d. $4,251 e. $5,658

### FT5b Find ROR on speculative currency futures given a change in exchange rates

A futures contract provides the opportunity to lock-in the exchange rate at which you can buy or sell 200,000 sucre . The futures price, quoted in U.S. cents per sucre, currently is 94.30 . The margin requirement is 2.75%. You enter short on one contract. Thereafter, the price of the sucre depreciates 3% relative to the USD. You then close your futures position. What was your rate of return?

{ANSWER: D ; xlADDRESS: Options!$F$231 ; new futures price = 91.47 ; margin = $5,187 }

/\a. 132% b. 145% c. 99% d. 109% e. 120%

### FT5c Find AND(profit,ROR) on speculative currency futures

A futures contract provides the opportunity to lock-in the exchange rate at which you can buy or sell 200,000 sucre . The futures price, quoted in U.S. cents per sucre, currently is 94.30 . The margin requirement is 2.75%. You enter short on one contract. Thereafter, the price of the sucre depreciates 3% relative to the USD. You then close your futures position. Which statement is true?

{ANSWER: B ; xlADDRESS: Options!$J$231 ; new futures price = 91.47 ; margin = $5,187 }

/\a. your profit is $4,278 and rate of return is 125%

/\b. your profit is $5,658 and rate of return is 109%

/\c. your profit is $4,920 and rate of return is 125%

/\d. your profit is $4,920 and rate of return is 109%

/\e. your profit is $4,278 and rate of return is 109%

### FT3a Find net cost/revenues of a hedged transaction

Today is Jan. 2, 2525, and the Company plans on buying 24,000 bushels of soybeans in October. Currently, soybeans cost $3.00 per bushel in the cash market, and $2.70 in the futures market for November delivery. The Company today goes long on 2 contracts (12,000 bushels each). In October, the Company buys 24,000 bushels in the local market for the cash price of $2.00 . Also in October, the Company closes its futures position on the November contracts at a futures price of $1.90 . What is the Company’s net cost?

{ANSWER: D ; xlADDRESS: Options!$B$265 ; CLUES: profit on futures = ($19,200) }

/\a. $55,537 b. $45,899 c. $61,091 d. $67,200 e. $50,488

### FT3b Find net benefit and strategy from a hedged transaction

Today is Jan. 2, 2525, and the Company plans on buying 24,000 bushels of soybeans in October. Currently, soybeans cost $3.00 per bushel in the cash market, and $2.70 in the futures market for November delivery. The Company today enters an appropriate position on 2 of these futures contracts (12,000 bushels each). The Company intends to close the futures position in October, settle in cash, and use the cash flows from the futures market to hedge movements in soybean prices at the local market. In October, the Company buys 24,000 bushels in the local market for the cash price of $2.00 . Also in October, the Company closes its futures position on the November contracts at a futures price of $1.90 . Which statement about this hedging activity is correct?

{ANSWER: D ; xlADDRESS: Options!$F$265 ; CLUES: profit on futures = ($19,200) }

/\a. the Company takes a long position and it eventually costs them $22,080

/\b. the Company takes a long position and it eventually costs them $25,392

/\c. the Company takes a short position and it eventually saves them $22,080

/\d. the Company takes a long position and it eventually costs them $19,200

/\e. the Company takes a short position and it eventually saves them $25,392

### FT6a Find net cost/revenue of a hedged currency transaction

Today is Jan. 2, 2525, and the Company plans on sending its foreign subsidiary 16,000 rupee in June. Today’s exchange rate, quoted in U.S. cents per rupee, currently is 91.80 in the local spot market, and 92.40 in the futures market for July delivery. The Company today goes long on 2 contracts (8,000 rupee each). By June the price of the rupee has depreciated 11% relative to the USD, and this percentage change is reflected in both the spot and futures prices. So in June the Company buys in the local spot market and, also, the Company closes its futures position with a cash settlement. What is the Company’s net cost associated with these transactions?

{ANSWER: C ; xlADDRESS: Options!$B$248 ; CLUES: profit on futures = ($1,626) }

/\a. $16,168 b. $17,785 c. $14,699 d. $13,362 e. $12,148

### FT6b Find net benefit and strategy from a hedged currency transaction

Today is Jan. 2, 2525, and the Company plans on sending its foreign subsidiary 16,000 rupee in June. Today’s exchange rate, quoted in U.S. cents per rupee, currently is 91.80 in the local spot market, and 92.40 in the futures market for July delivery. The Company today enters an appropriate position on 2 contracts (8,000 rupee each). The Company intends to close the futures position in June, settle in cash, and use the cash flows from the futures market to hedge movements in exchange rates at the local market. By June the price of the rupee has depreciated 11% relative to the USD, and this percentage change is reflected in both the spot and futures prices. So in June the Company exchanges 16,000 rupee in the local spot market and, also, the Company closes its futures position with a cash settlement. Which statement about this hedging activity is correct?

{ANSWER: C ; xlADDRESS: Options!$F$248 ; CLUES: profit on futures = ($1,626) }

/\a. the Company takes a short position and it eventually saves them $1,417

/\b. the Company takes a long position and it eventually costs them $1,875

/\c. the Company takes a long position and it eventually costs them $1,630

/\d. the Company takes a short position and it eventually saves them $1,875

/\e. the Company takes a short position and it eventually saves them $1,630

## END OF DOCUMENT