NorFish Exporters

Hedging Workshop

International Finance — Session 5

Background

NorFish AS is a Bergen-based salmon exporter. The company farms and processes Atlantic salmon for sale in Europe, North America, and the domestic market. Annual revenues are approximately NOK 800 M, broken down as follows:

Market	Invoice currency	Share of revenue
European Union	EUR	45%
United States	USD	25%
Norway (domestic)	NOK	30%

Costs are approximately 90% NOK-denominated (feed, labor, processing, transport to port). The remaining 10% are imported equipment and packaging materials priced in EUR and USD.

Competitive landscape. NorFish competes directly with Scottish producers (costs in GBP) and Chilean producers (costs in CLP) for European supermarket shelf space. EU buyers are price-sensitive: a 10% increase in NorFish's EUR-denominated price typically leads to a 4–5% loss in volume as buyers shift to Scottish or Chilean supply.

The CFO is evaluating the hedging program for the next 12 months. She is focused on the EUR revenue stream, which represents the largest foreign currency exposure.

Market Data

	NOK/EUR	NOK/USD
Spot rate	11.50	10.80
12-month forward rate	11.70	10.82

	12M rate
NOK (NIBOR)	4.30%
EUR (EURIBOR)	2.50%
USD (SOFR)	4.10%

EUR options (12M)	Strike	Type	Premium (NOK/EUR)
At-the-money forward	11.70	Put	0.40
3% out-of-the-money	11.35	Put	0.25
3% out-of-the-money	12.10	Call	0.25

All rates are annualized with simple compounding. Option premiums are paid upfront. Bid-ask spreads: spot ± 0.02, 12M forward ± 0.04.

Tasks

Work in groups of 3–4. You have approximately 60 minutes for Parts A–D, followed by a 25-minute plenary debrief.

Part A: Exposure classification *(15 min)*

1. Identify NorFish's **transaction exposure** in EUR. What is the notional amount in EUR?
2. Does NorFish have **translation exposure**? Why or why not?
3. Describe NorFish's **operating exposure**. Which exchange rate movements would hurt NorFish's competitive position, and through what channel?
4. Which type of exposure is largest in economic terms? Which is most commonly hedged in practice?

Part B: The CFO's claim *(10 min)*

The CFO tells the board:

> *"The 12-month forward is NOK 11.70 per euro, versus a spot rate of 11.50. So by selling our EUR revenues forward, we lock in 20 øre more per euro than the current market rate. Hedging earns us money — it's a free lunch."*

1. Is the CFO correct that the forward rate exceeds the spot rate? Why does $F > S$ in this case?
2. Is it correct to call the 20 øre premium a "gain" from hedging?
3. What is the actual transaction cost of hedging with a forward contract?

Part C: Hedge design *(25 min)*

NorFish expects to receive EUR 31.3 M over the next 12 months. The CFO considers three strategies to hedge this exposure:

S1. Full forward hedge: sell EUR 31.3 M forward at $F = 11.70$.

S2. Protective put: buy a EUR put with strike $K = 11.35$ at a premium of 0.25 NOK/EUR.

S3. Zero-cost collar: buy the $K = 11.35$ put and sell the $K = 12.10$ call (net premium ≈ 0).

1. Complete the following table, showing the **effective NOK per EUR received** and the **total NOK revenue** from the EUR exposure under each strategy:

	Unhedged		**S1: Fwd**		**S2: Put**		**S3: Collar**	
S_T	NOK/€	M	NOK/€	M	NOK/€	M	NOK/€	M
10.50								
11.50								
12.50								

2. Which strategy would you recommend if NorFish has a high debt-to-equity ratio and faces financial covenants tied to NOK cash flow?
3. Which strategy would you recommend if NorFish is financially strong and views a potential NOK depreciation as likely?

Part D: The real risk *(10 min)*

Suppose NOK appreciates 15% against EUR over the next year: the spot rate moves from NOK/EUR 11.50 to approximately 10.00.

1. What happens to NorFish's cost competitiveness relative to Scottish producers?
2. If NorFish hedged its EUR transaction exposure with a forward contract, is it protected against this scenario?

3. What kind of exposure is this? Can it be hedged with a financial instrument?
4. What should NorFish do about it?

All data in this exercise is fictional but calibrated to realistic market conditions.