Strait Insurance vs. Pipeline Tariff Break-Even Model

CFO Financial Decision Framework: Quantifying War Risk Premiums, Hidden Transit Costs & Pipeline Bypass Arbitrage

1. CFO COST MATRIX: HORMUZ LOADING VS. FUJAIRAH / YANBU BYPASS

A comprehensive financial audit requires comparing all direct and hidden cost factors associated with passing through the Strait of Hormuz against utilizing bypass pipeline infrastructure.

HORMUZ STRAIT TRANSIT (DIRECT IN-GULF)

- **Base Tanker Freight Rate:** Standard Worldscale / TCE.
- **War Risk Insurance (AP WR):** Additional Premium based on Hull & Machinery (H&M) value per 7-day transit window.
- **Crew War Zone Bonus:** 100% wage premium mandated for JWLA listed risk zones.
- **Offshore Anchorage Waiting Cost:** $40,000–$75,000/day in demurrage during security delays.

BYPASS PIPELINE TRANSIT (FUJAIRAH / YANBU)

- **Pipeline Tariff Fee:** $1.50 – $2.20 per barrel flat throughput fee (Habshan-Fujairah / Petroline).
- **Terminal Storage & Handling:** ~$0.25–$0.40/bbl for tankage and manifold connections.
- **Zero Additional War Risk Premium:** Standard marine hull insurance rate applies outside high-risk zone.
- **Shorter Voyage Days:** Saves 3–5 days steaming time (lower total bunker burn).

2. ADDITIONAL PREMIUM WAR RISK (AP WR) TARIFF MATRIX

War Risk insurance premiums are calculated as a percentage of the vessel's insured Hull & Machinery (H&M) value for a standard 7-day breach period into the Arabian Gulf.

Threat Level	AP WR Rate (% of H&M Value)	Cost on VLCC ($100M H&M Value)	Cost on Suezmax ($65M H&M Value)	Per-Barrel Impact (VLCC - 2M bbl)
Low / Baseline Risk	0.05%	$50,000	$32,500	$0.025 / bbl
Elevated Threat	0.25%	$250,000	$162,500	$0.125 / bbl
High Conflict / Active Threats	0.75%	$750,000	$487,500	$0.375 / bbl
Severe Crisis / Restricted Passage	1.50%	$1,500,000	$975,000	$0.750 / bbl

3. BREAK-EVEN DECISION MODEL & CALCULATION STEPS

The financial tipping point occurs when the total cost of war risk insurance plus hidden delay overhead equals the bypass pipeline throughput tariff.

Core Break-Even Equation:

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Break-Even Threshold ($/bbl) = [(H&M Value × AP WR Rate) + Cargo Risk Premium + Demurrage Delay] ÷ Total Cargo Volume (bbl)
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Decision Rule: If the calculated *Hormuz Exposure Risk ($/bbl)* exceeds the *Pipeline Throughput Tariff ($1.50 - $2.20/bbl)*, immediate rerouting to Fujairah/Yanbu is financially mandatory.

Step	Analytical Task	Variable / Input Parameter
Step 1	Determine Total Insured Value	Input Vessel H&M Value ($) + Total Cargo Value ($).
Step 2	Calculate War Risk Premium (AP WR)	Multiply Insured Value by Underwriter's quoted AP WR % rate.

Step	Analytical Task	Variable / Input Parameter
Step 3	Add Delay & Operational Overhead	Estimate anchorage wait time (days) × daily demurrage charter rate ($/day).
Step 4	Calculate Per-Barrel Hormuz Risk Cost	Divide Total Risk Cost (Sum of Steps 2 & 3) by total barrels loaded.
Step 5	Compare Against Pipeline Terminal Fee	Compare Step 4 output against Fujairah / Yanbu total tariff ($/bbl).