X-LNG CASE STUDY · NOV 2025

The LNG Charter Market

$9.84M

what spot flexibility is worth at a $70k/day charter rate

Primer · how time charters work

Worked book · US-China, 2 × 174k, 2026

Hedging · CME BLNG2-174 futures

How the charter market prices a ship

The time charter is the workhorse: daily hire set where vessel supply meets ton-mile demand

Who pays what

The **charterer** pays a daily hire plus voyage costs: fuel, ports, canal tolls, carbon. The **owner** provides the crew and covers OPEX: wages, maintenance, insurance. Performance warranties pin speed, fuel use and boil-off; EU-ETS duties are allocated in the contract.

Where rates come from

Physical fixtures are private. The Baltic Exchange and Spark publish daily reference rates, broker and PRA reports circulate fixtures, and **ICE and CME list cash-settled freight futures and FFAs** against those indices.

Contract types: time charter (most widespread), voyage charter, COA, bareboat · Deal flow: enquiry, vetting, recap, subjects lifted, charter party.

The book behind the numbers

January to December 2026 · two chartered 174k vessels move everything

11
FOB Long Sabine Pass · 115% HH + $4

11
DES Short Shenzhen · JKM - discount

2
spot outlets: Zeebrugge TTF, Shenzhen JKM

$20k
indifference charter rate by design

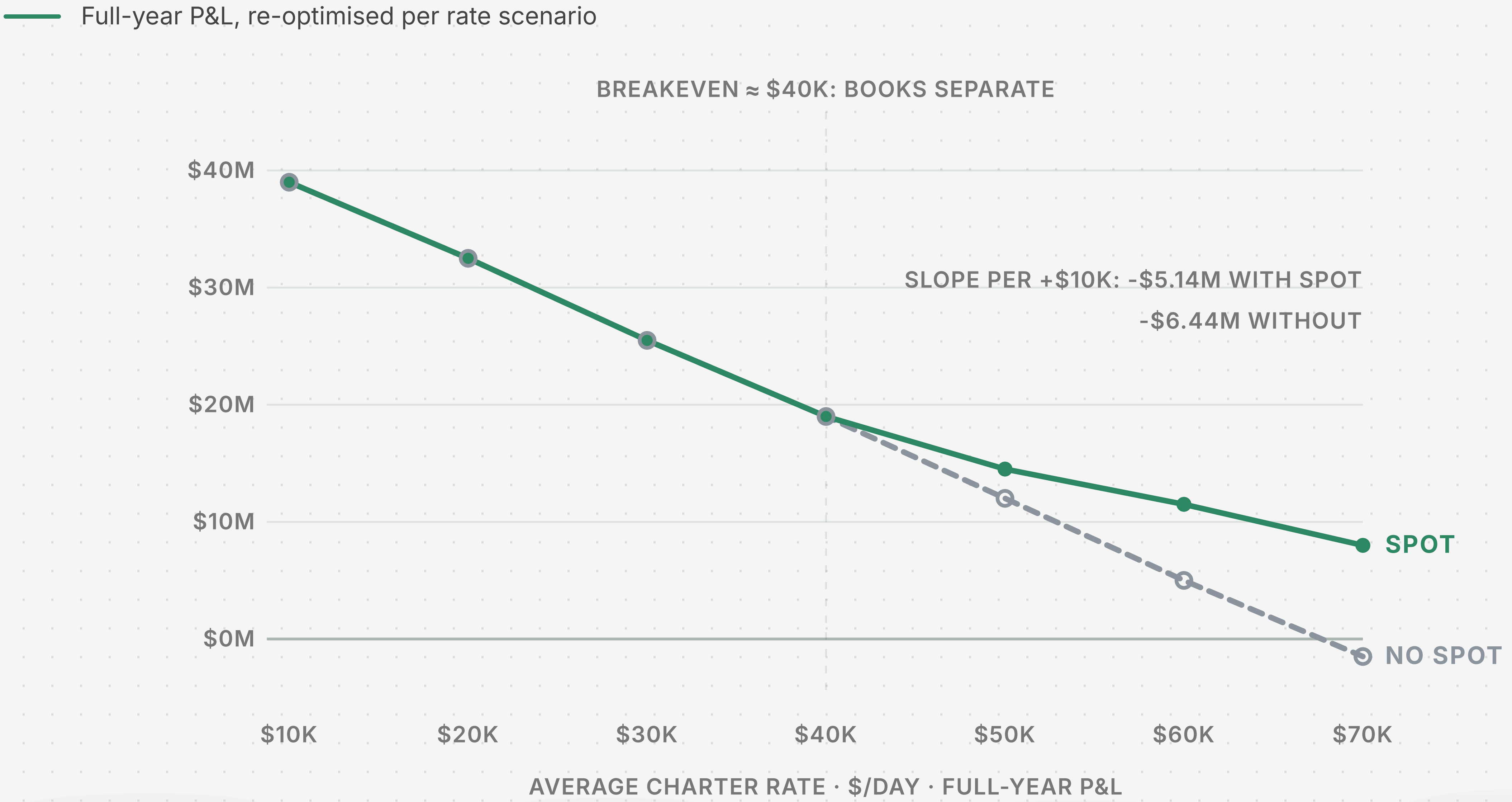
US FOB length default-covers the Chinese DES short. The indexations are tuned to an indifference point at $20k a day: shipping to Asia and diverting to Europe earn exactly the same, **so every rate move from there flips real decisions.** Breakeven inputs: DES Short Asia JKM - $0.20, spot Europe TTF - $0.29, spot Asia JKM + $0.32.

The sweep

The same book from $10k to $70k a day, with and without spot outlets

01

P&L across the charter curve

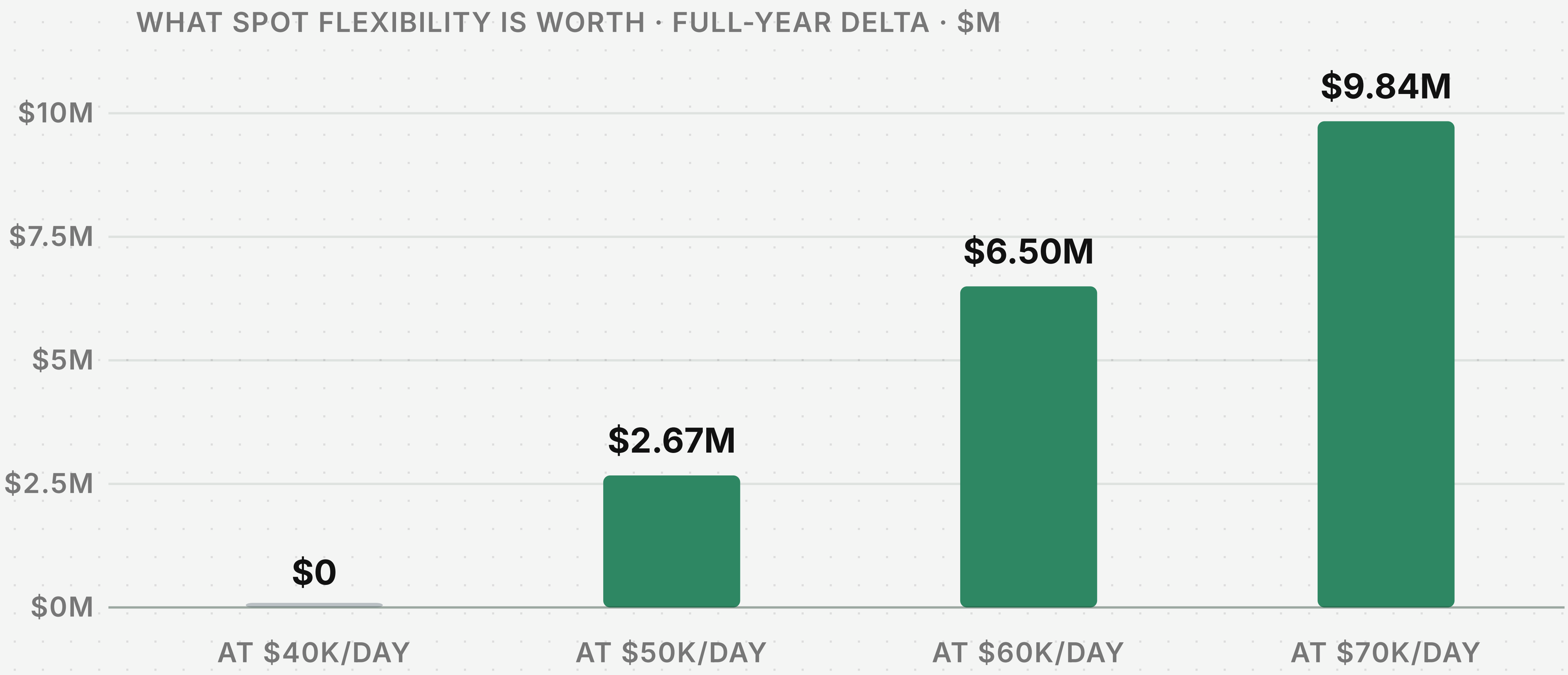


CONSTANT ANNUAL CHARTER RATE, VALID $10K TO $70K/DAY · CHARTER COST ON ON-HIRE DAYS ONLY

Below roughly $40k both books are identical and everything sails to Asia. Above $50k, diversions to Europe make the flexible book decline far more slowly.

What flexibility is worth, in dollars

The spot premium is zero up to $40k and grows sharply beyond it



EXACT ENGINE DELTAS: $2,666,674 AT $50K · $6,495,719 AT $60K · $9,838,127 AT $70K

In per-MMBtu terms the flexible book never goes negative; the rigid one turns negative at $70k a day, -$0.04 per MMBtu.

THE VERDICT

Below about $40k a day, route everything to Asia: above it, diversions and freight futures protect the book.

Operational flexibility and financial hedging are complements, not substitutes. Spot outlets soften the slope; the futures strip removes it. Where on that line a book should sit is a risk-appetite decision, and now a quantified one.

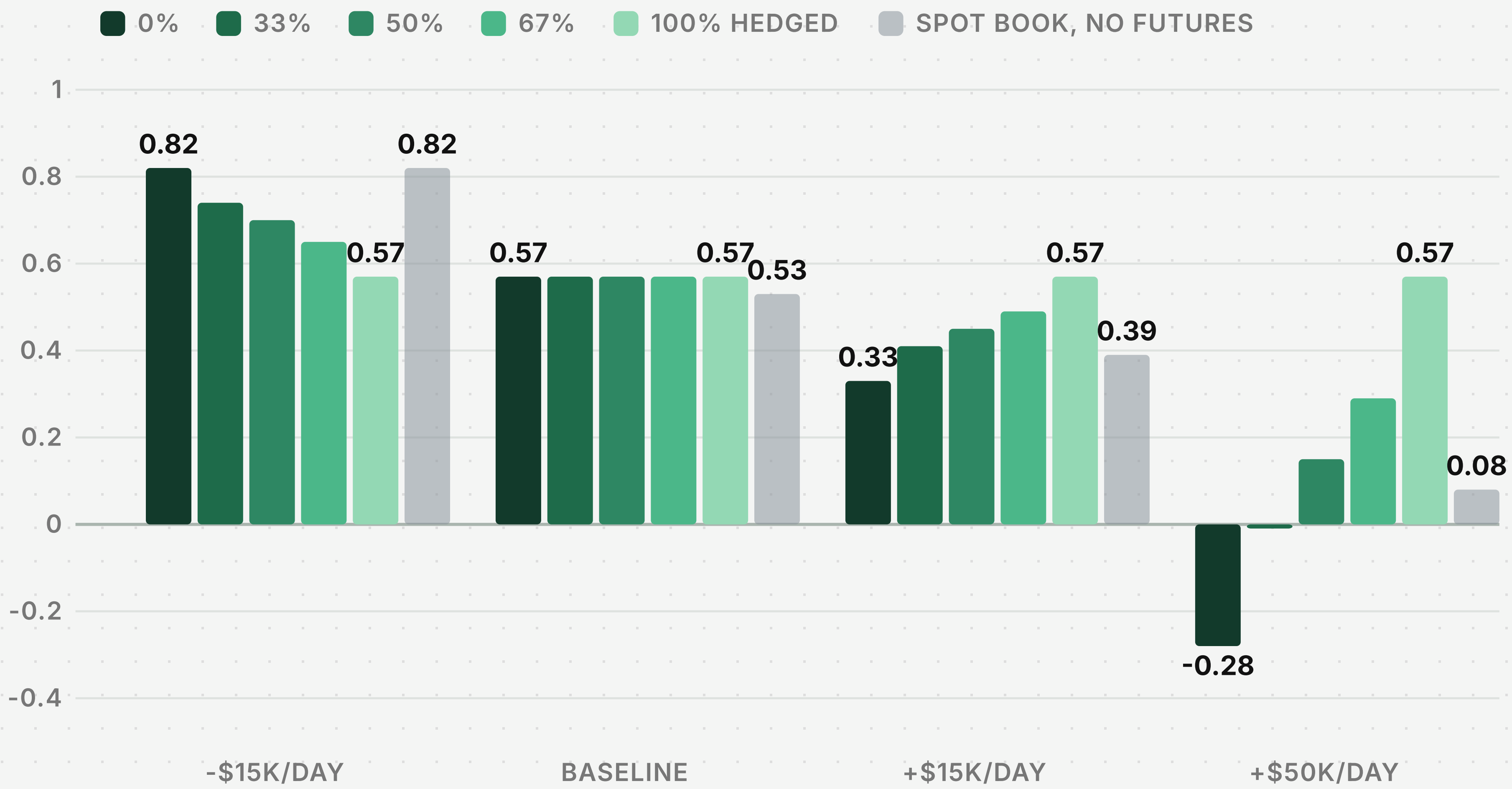
The hedge

CME BLNG2-174 freight futures on the rigid book, 0 to 100% of ship-days

02

Freight futures take the wheel

P&L per MMBtu under parallel charter-curve shifts, per hedge ratio



PARALLEL CHARTER-CURVE SHIFT VS BLNG2-174 STRIP · P&L $/MMBTU

FUTURES BASELINE $62,831/DAY (BLNG2-174, NOV 2025) · HEDGE SIZED ON MONTHLY ON-HIRE SHIP-DAYS · INTERMEDIATE RATIOS LINEAR

At full ratio the book is flat at $0.57/MMBtu whatever freight does. The spot-enabled book is a partial natural hedge, but no substitute for futures in a severe up-move.

Takeaways

What covers freight risk, and when

✓ **The breakeven sits near $40k a day**
Below it both book variants are identical and every cargo sails US to China; above roughly $50k the optimiser progressively diverts to Europe.

✓ **Spot flexibility is a partial natural hedge**
It softens the slope from -$6.44M to -$5.14M per +$10k/day and is worth $9.84M at $70k; the flexible book never goes negative.

! **Flexibility does not replace futures in a spike**
At +$50k/day the unhedged rigid book sits at -$0.28/MMBtu, the spot book at $0.08; the 100% hedge stays flat at $0.57 whatever freight does.

Modelled with X-LNG

Whole-portfolio optimisation for LNG books

1

Your world goes in

Contracts, vessels, charter rates, prices, spot assumptions and constraints, the full book, not a slice.

2

One optimal plan comes out

Feasible, P&L-maximising and constraint-compliant, re-solved for every scenario in minutes.

3

Every number checks out

Each result can be recalculated by hand, transparency your risk committee can audit.

Cloud-based, any portfolio size · built and advanced daily by ~25 mathematicians, physicists and computer scientists.

See what freight does to your book

Calypso Ventures GmbH

www.calypso-commodities.com · ms@calypso-commodities.com

+49 157 769 40574

Bismarckstraße 10-12, 10625 Berlin · HRB 239736 B, Amtsgericht Charlottenburg