



Initial & **Dynamic** Hedging Flow Impacts

the dealer is long calls above spot



Trade: Customer sells 100x SPX 20d Calls (Dealer buys)

Hedge at Trade: Dealer Sells 40 ES Futures

Initial Impact: Market lower ↘

GAMMA. . . "What happens when the market moves?"

Market **rallies** dealer **SELLS** futures

Market RALLIES → Delta(C) goes UP... now dealer's total Delta is POSITIVE
Dealer SELLS futures to bring Delta back to 0
This produces RESISTANCE



Market DECLINES → Delta(C) goes DOWN... now dealer's total Delta is NEGATIVE
Dealer BUYS futures to bring Delta back to 0
This produces SUPPORT

Market **declines** dealer **BUYS** futures



CHARM. . . "What happens when time passes?"

Time **passes** dealer **BUYS** futures

Time PASSES → Delta(C) goes DOWN... now dealer's total Delta is NEGATIVE
Dealer BUYS futures to bring Delta back to 0
This pushes the market HIGHER



VANNA. . . "What happens when Implied Volatility Changes?"

IVol goes **up** dealer **SELLS** futures

IVol goes UP → Delta(C) goes UP... now dealer's total Delta is POSITIVE
Dealer SELLS futures to bring Delta back to 0
This pushes the market LOWER



IVol goes DOWN → Delta(C) goes DOWN... now dealer's total Delta is NEGATIVE
Dealer BUYS futures to bring Delta back to 0
This pushes the market HIGHER

IVol goes **down** dealer **BUYS** futures





Initial & **Dynamic** Hedging Flow Impacts

the dealer is long puts below spot



Trade: Customer sells 100x SPX -20d Puts (Dealer buys)

Hedge at Trade: Dealer Buys 40 ES Futures

Initial Impact: Market higher ↗

GAMMA. . . "What happens when the market moves?"

Market **rallies** dealer **SELLS** futures



Market RALLIES → $Abs(\Delta(P))$ goes DOWN... now dealer's total Delta is POSITIVE
Dealer SELLS futures to bring Delta back to 0
This produces RESISTANCE

Market DECLINES → $Abs(\Delta(P))$ goes UP... now dealer's total Delta is NEGATIVE
Dealer BUYS futures to bring Delta back to 0
This produces SUPPORT

Market **declines** dealer **BUYS** futures



CHARM. . . "What happens when time passes?"

Time **passes** dealer **SELLS** futures



Time PASSES → $Abs(\Delta(P))$ goes DOWN... now dealer's total Delta is POSITIVE
Dealer SELLS futures to bring Delta back to 0
This pushes the market LOWER

VANNA. . . "What happens when Implied Volatility Changes?"

IVol goes **up** dealer **BUYS** futures

IVol goes UP → $Abs(\Delta(P))$ goes UP... now dealer's total Delta is NEGATIVE
Dealer BUYS futures to bring Delta back to 0
This pushes the market HIGHER



IVol goes DOWN → $Abs(\Delta(P))$ goes DOWN... now dealer's total Delta is POSITIVE
Dealer SELLS futures to bring Delta back to 0
This pushes the market LOWER

IVol goes **down** dealer **SELLS** futures

