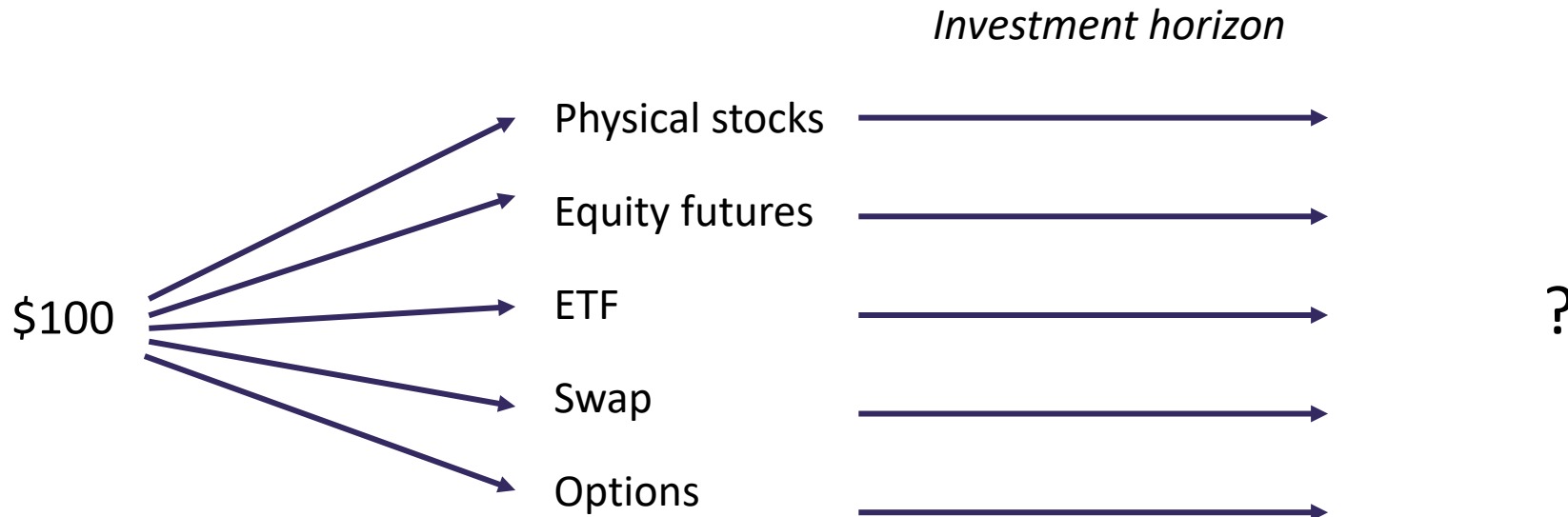


2020 Annual Conference
July 2020

Different methods of exposure management

An implementation choice



Asset owners have a choice for implementation, and each option has both advantages and drawbacks which need to be 1) understood and 2) then tailored for each investor

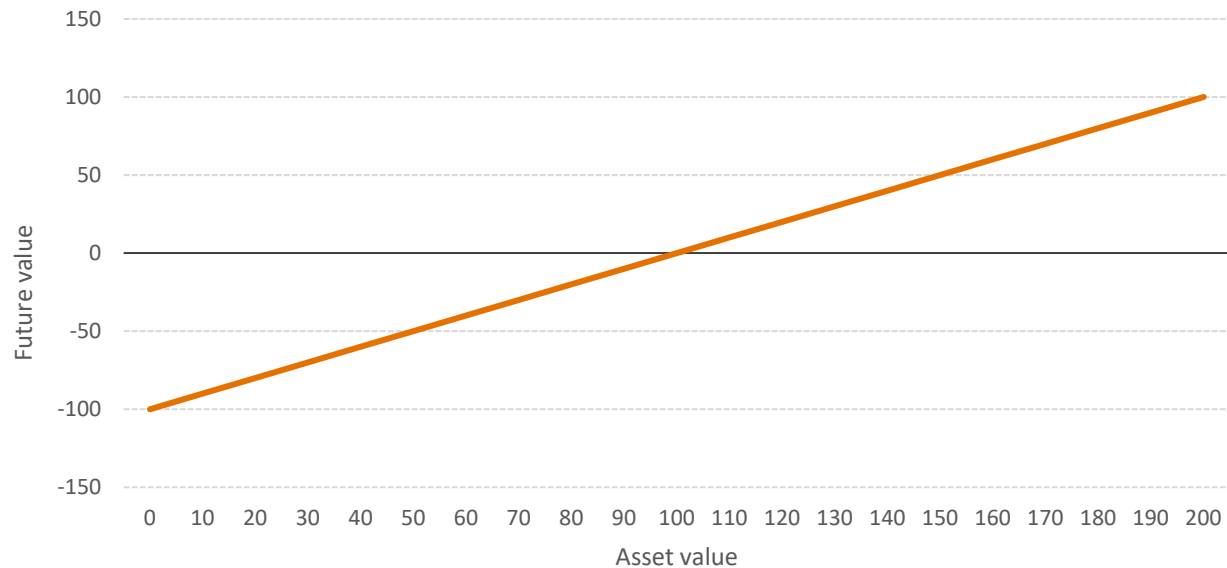
Physical equities

Characteristic	Physical
Funded/unfunded	Funded
Implied/realised dividends	Realised
Tenor	None
Voting/Stock Lending	Yes
Implementation	Difficult
Match to Index	Perfect
Liquidity/trading hours	Good. Cash market
Linear	Yes
Counterparty risk	No

Equity index futures return

=

Equity index price return + expected dividends – funding

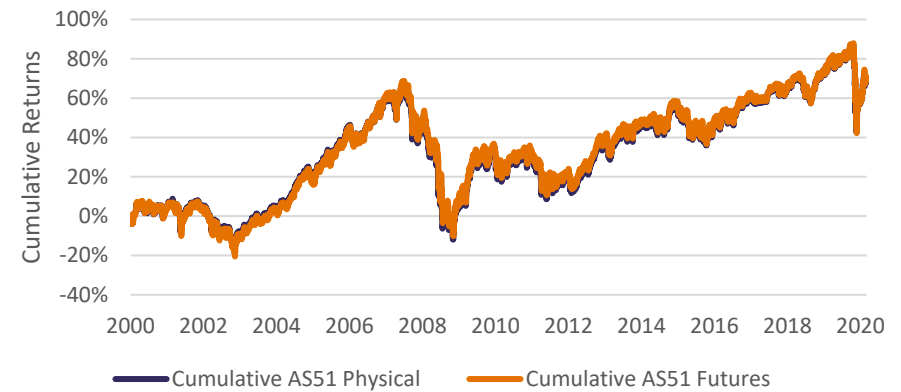


Looks like a perfect linear relationship

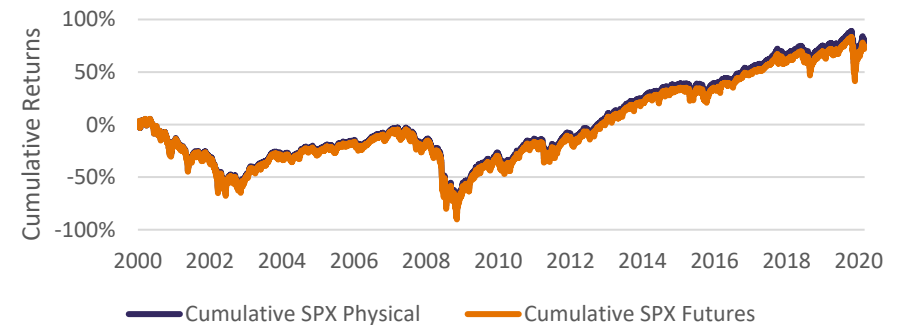
Futures vs physical equities

Characteristic	Futures
Funded/unfunded	Unfunded
Implied/realised dividends	Implied
Tenor	Most liquid 0-3 months
Voting/Stock Lending	No
Implementation	Usually via Derivs Manager
Match to Index	Close but can diverge (e.g. roll trading costs)
Liquidity	Very good. ~24 hours 7 days
Linear	Yes
Counterparty risk	No

ASX 200 Physical v futures



S&P 500 Physical v futures

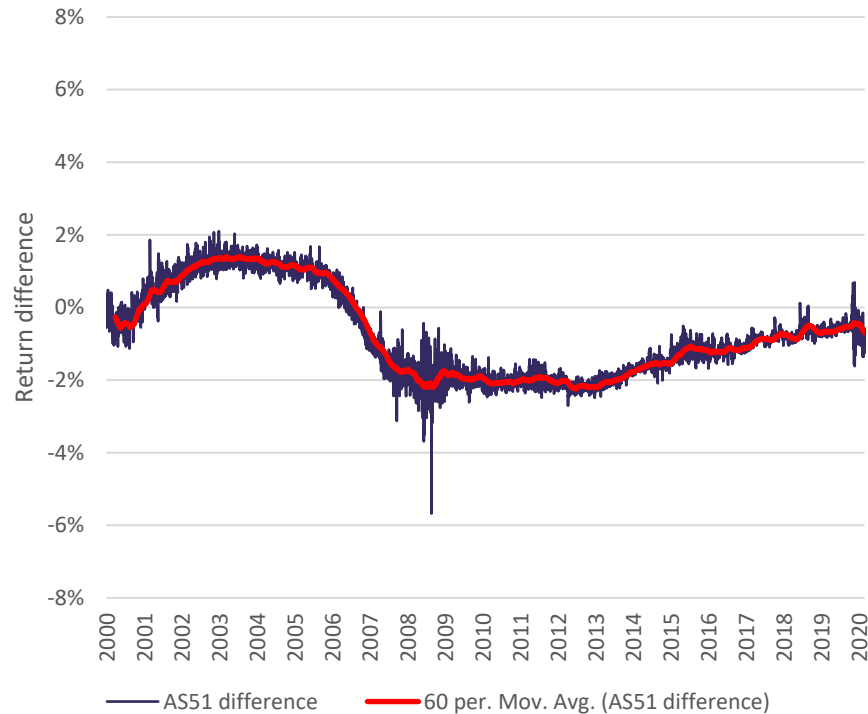


Source: Frontier, Bloomberg. AS51 refers to ASX200. SPX refers to S&P500

On the surface it looks like futures always match the physical market

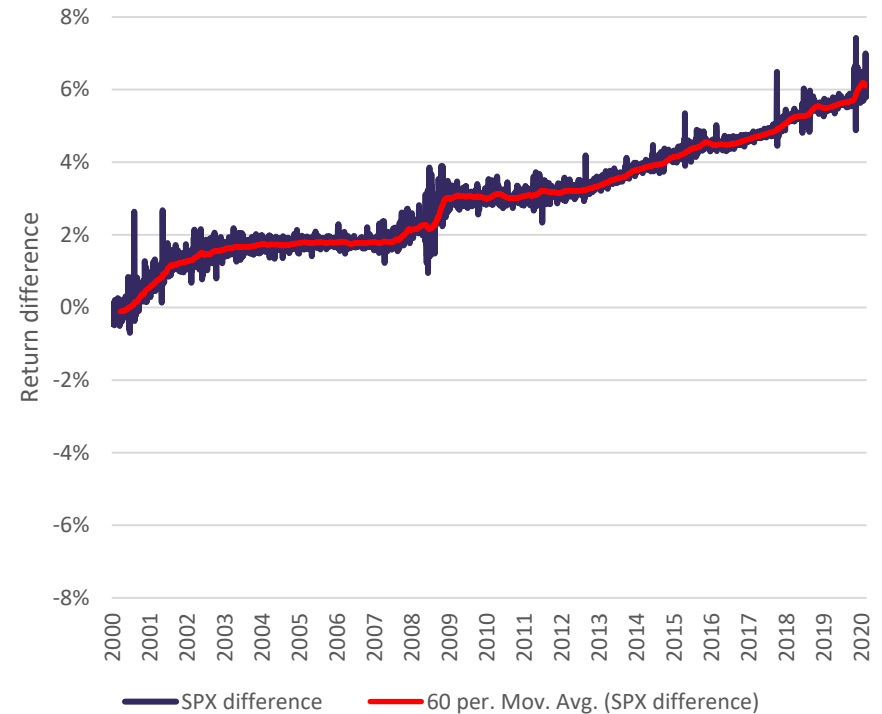
Futures vs physical equities

ASX 200 Physical - futures



Source: Frontier, Bloomberg. AS51 refers to the ASX200

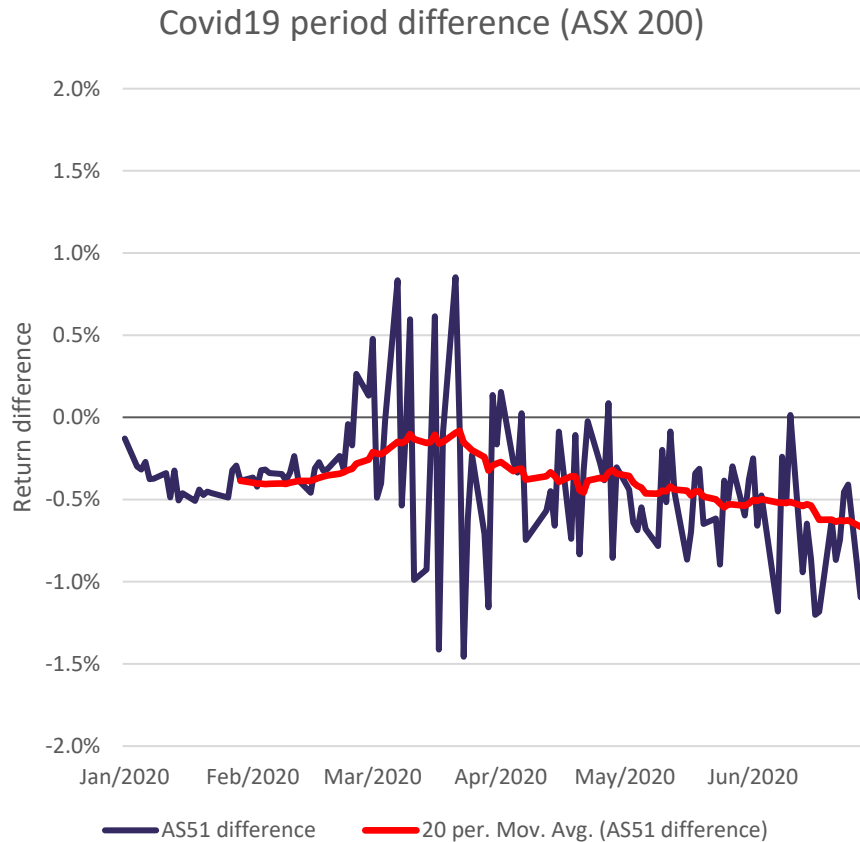
S&P 500 Physical - futures



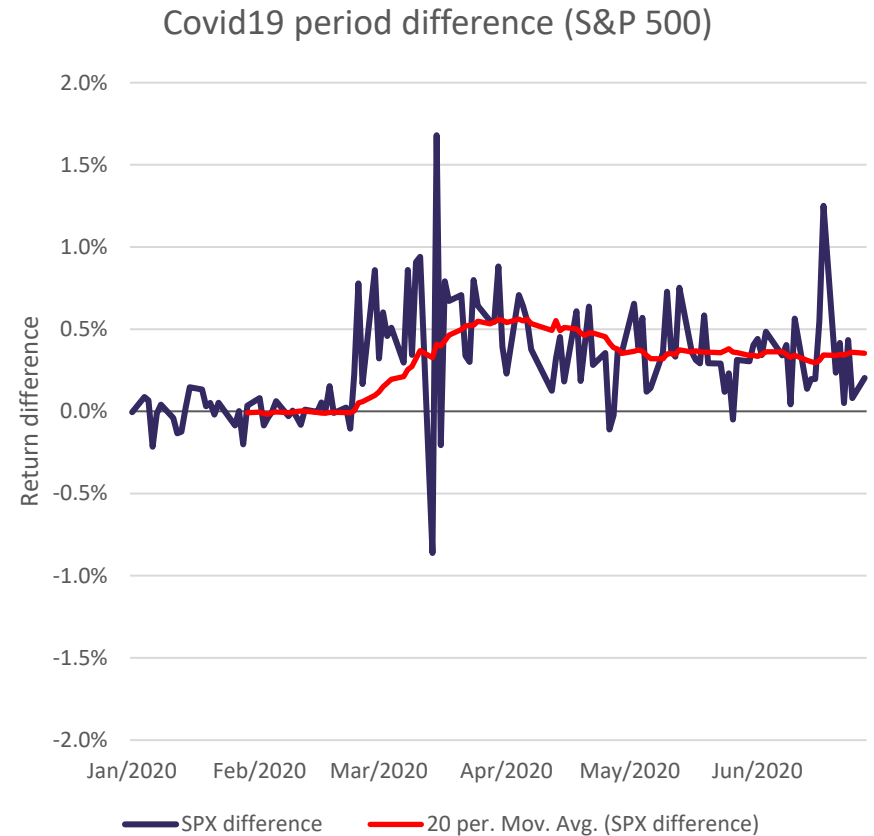
Source: Frontier, Bloomberg. SPX refers to the S&P500

Incremental differences in performance and costs can compound over time

Futures vs physical equities – Covid19 period



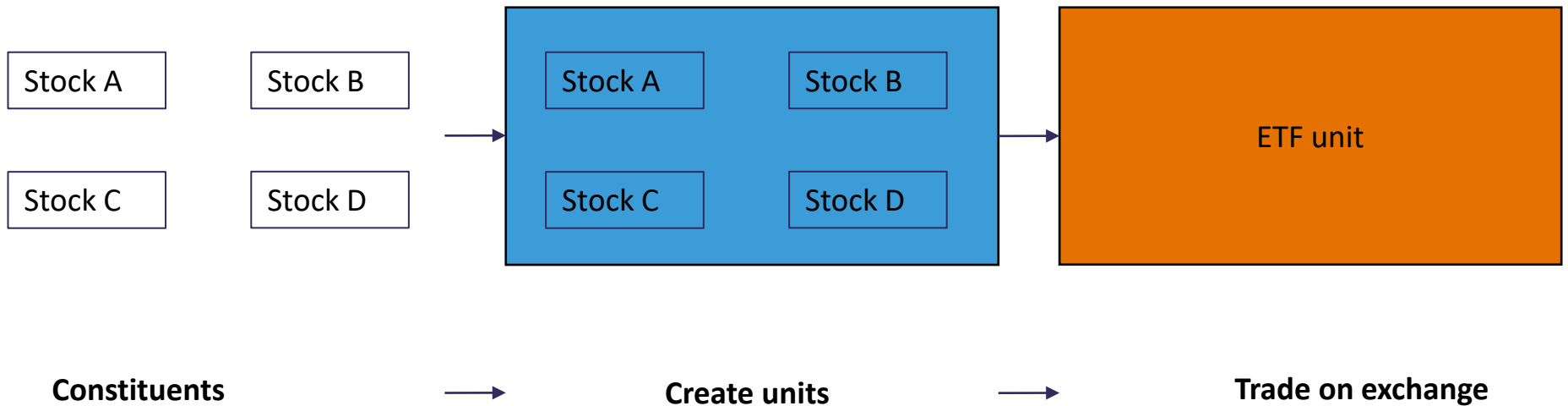
Source: Frontier, Bloomberg



Source: Frontier, Bloomberg

Performance differences emerge when markets are more volatile

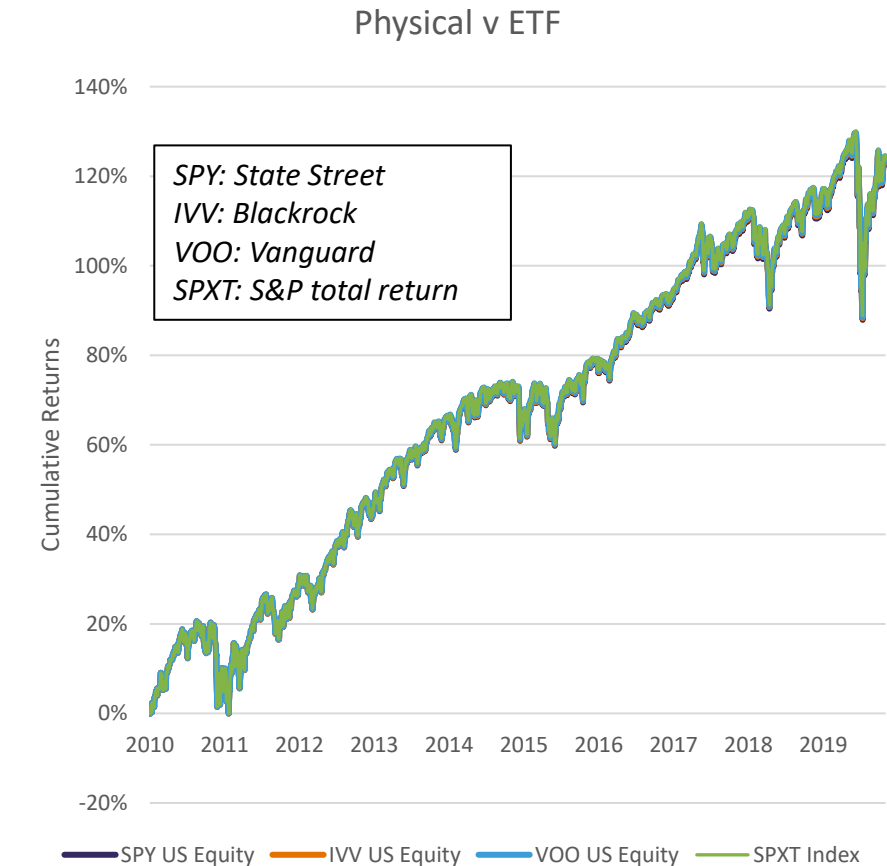
Exchange Traded Funds (ETFs)



Price of the ETF roughly equals the total price of underlying stocks

Physical vs ETF

Characteristic	ETFs
Funded/unfunded	Funded
Implied/realised dividends	Realised
Tenor	None
Voting/Stock Lending	Proxied
Implementation	Easy
Match to Index	Close but can diverge
Liquidity	Good except in a stress
Linear	Yes
Counterparty risk	No

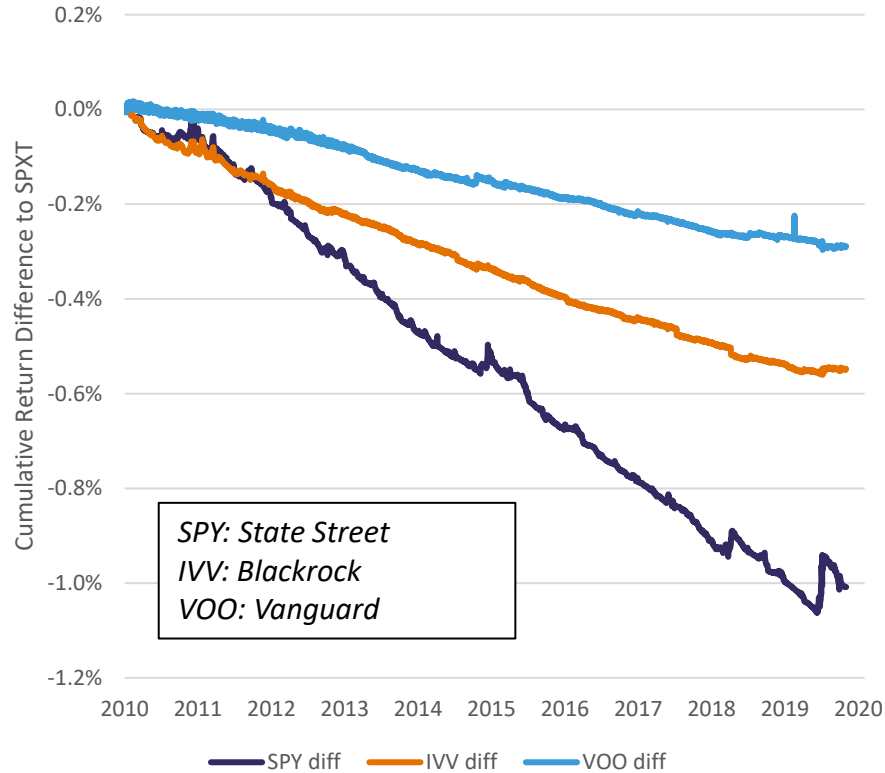


Source: Frontier, Bloomberg

Once again, on the surface it looks like ETFs always match the physical market

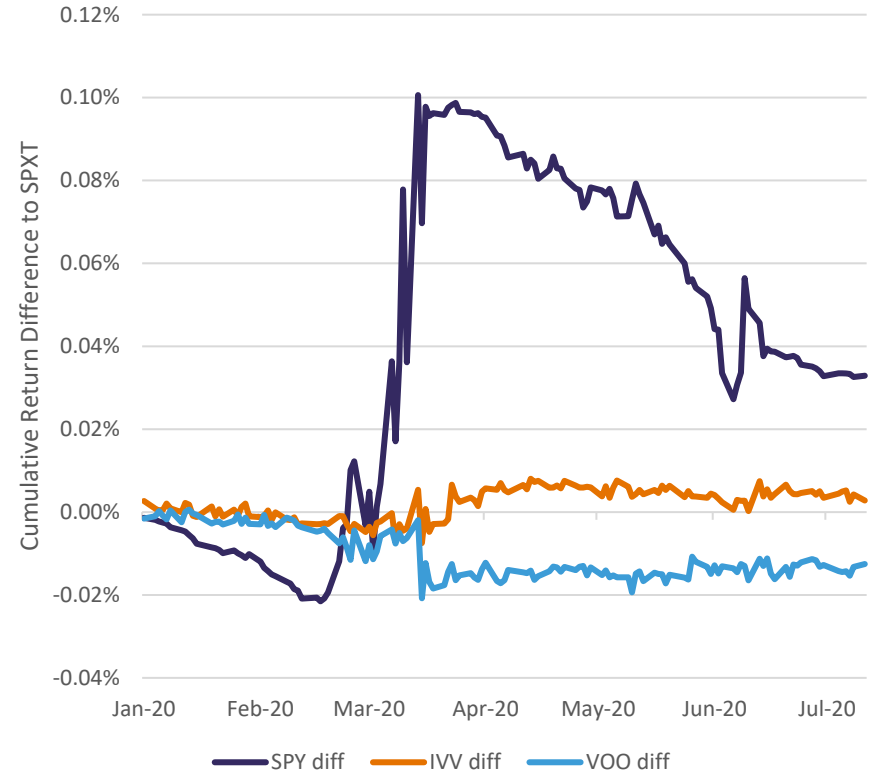
Physical vs ETF – Not all ETFs created equally

Difference between ETF and physical



Source: Frontier, Bloomberg. SPXT refers to S&P500 total return index

Difference during COVID19 period



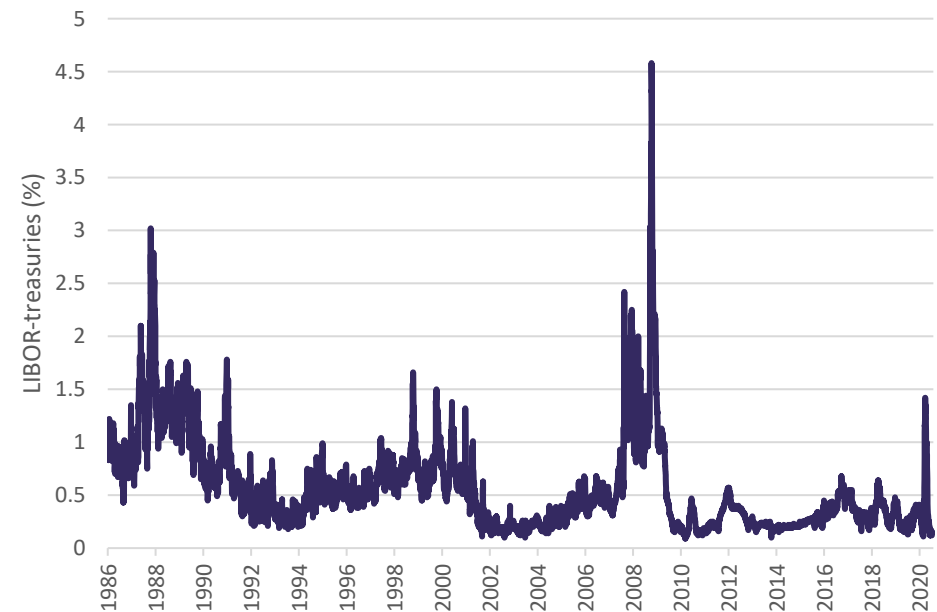
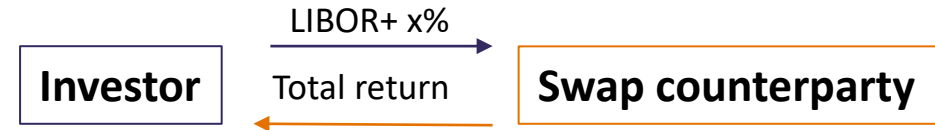
Source: Frontier, Bloomberg. SPXT refers to S&P500 total return index

Again, incremental differences in performance and costs compound over time
Can be different for different markets and market conditions

Swaps

Characteristic	Swaps	
Funded/unfunded	Unfunded	
Implied/realised dividends	Realised	
Tenor	Tailorable	
Voting/Stock Lending	No	
Implementation	Direct with bank or via derivs manager for collateral management	
Match to Index	Perfect	
Liquidity	Yes but not intraday price	Break costs
Linear	Yes	
Counterparty risk	Yes	

Physical vs Swap

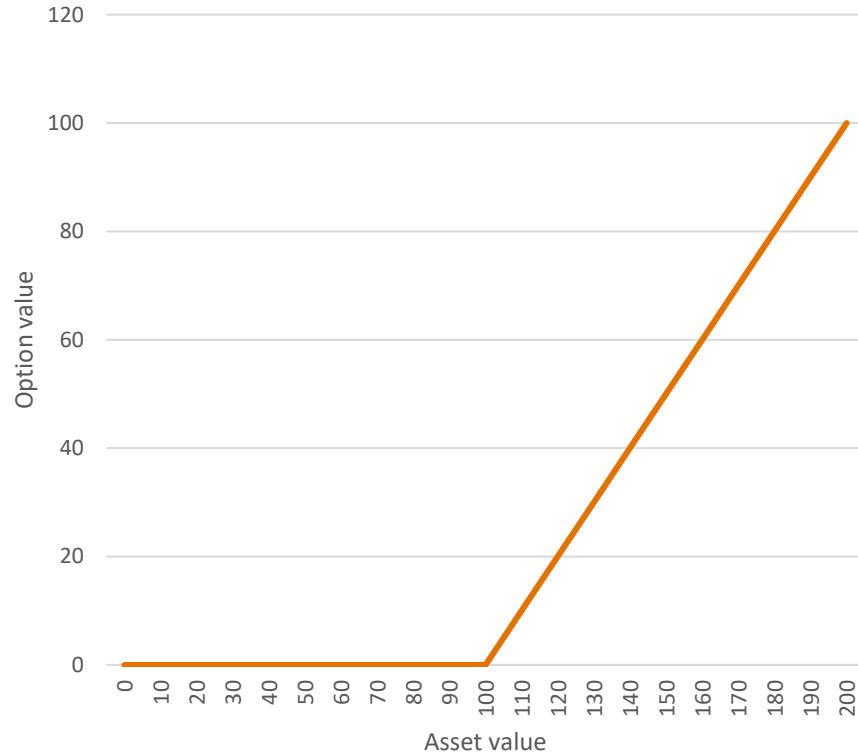


Source: www.macrotrends.net

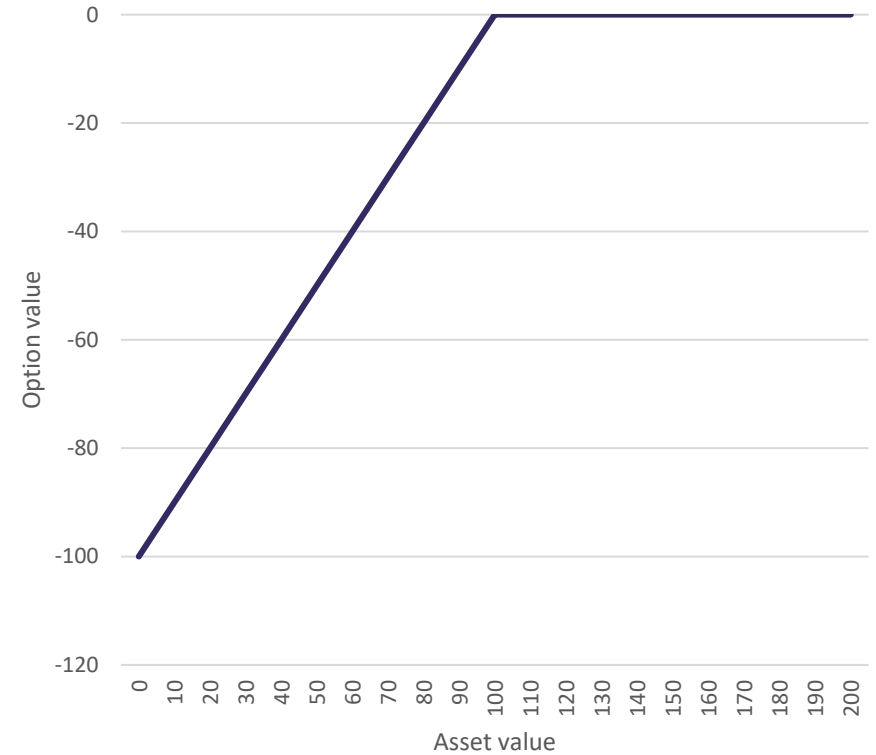
Funding costs are key

Options

Long call option



Short put option



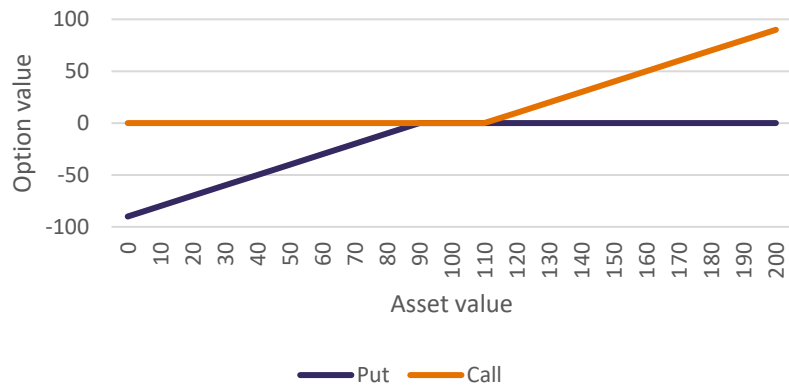
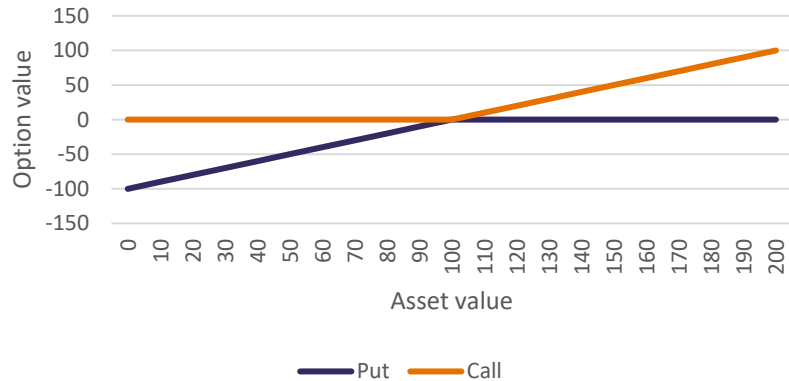
Options are like futures beyond their strike

Source: Frontier. Option cost has not been included

Source: Frontier. Option cost has not been included

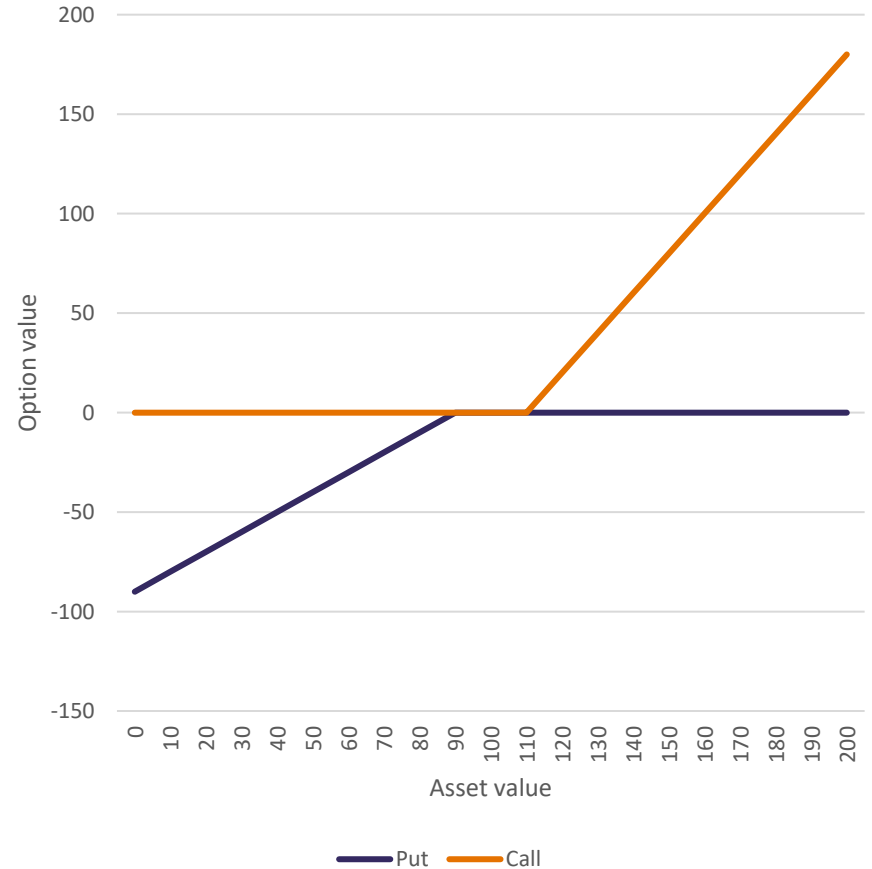
Combining options to look like futures

Payoffs when calls and puts are combined



Source: Frontier. Option cost has not been included

Payoff when buying 2 calls for each single sold put

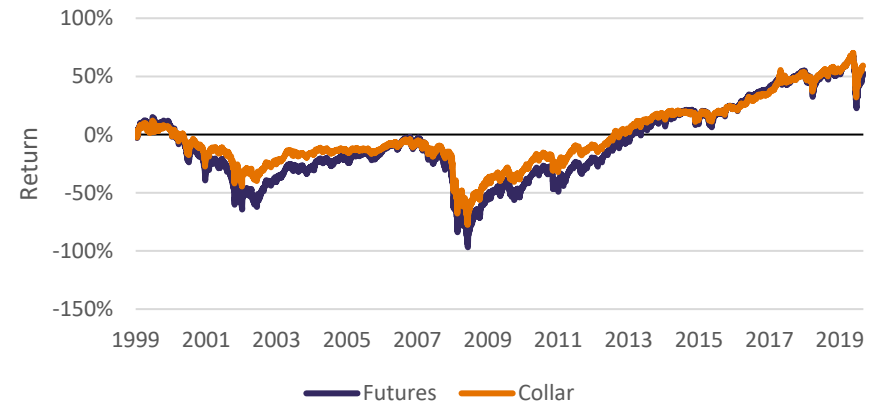


Source: Frontier, Citi. Option cost has not been included

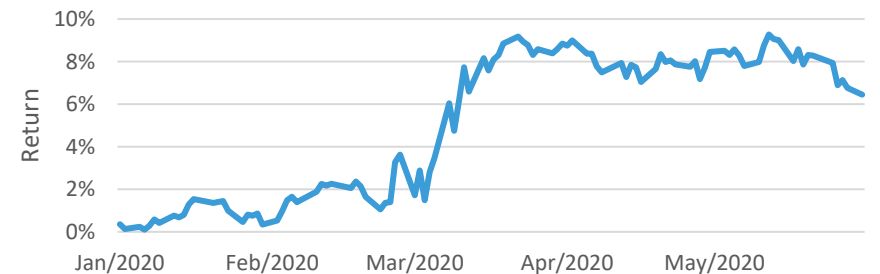
Futures vs options

Characteristic	Options
Funded/unfunded	Unfunded
Implied/realised dividends	Implied
Tenor	Tailorable
Voting/Stock Lending	No
Implementation	Direct with bank or via derivs manager
Match to Index	Predictable
Liquidity	Relatively liquid
Linear	No
Counterparty risk	Depends on asset class

Options structure vs futures



Options - futures



Source: Frontier, Citi, Bloomberg

Options allow different exposure at different prices

COVID19 period – Wanted extra equities but cash was king!

- Cash efficient approaches were crucial
- Futures quickest way to establish a position
- Swaps to gain medium term customised exposure
- Options to take advantage of selling puts and buying extra calls

Lessons?

- **Additional methods were valuable**
- **Establish your strategies and relationships now**

Which is best? Depends on the scenario

Method	Stress market (e.g. COVID19)	Short term tilt (e.g. 3-6 months)	Medium term tilt (e.g. 3 years)
Passive	Light Orange	Light Orange	Light Green
Futures	Light Green	Dark Green	Light Green
ETFs	Light Orange	Light Orange	Light Green
Swaps	Light Green	Light Orange	Light Green
Options	Dark Green	Light Green	Light Orange

Different avenues for gaining exposure have different merits at different points in time

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