



## Breakout session B – Room 1

Thursday, 8 June 2017



# Downside Protection

Presented on: Thursday, 8 June 2017

# Agenda

- 1 Downside protection philosophy & options as a risk management tool
- 2 Equity options – framework and analysis
- 3 Evolving the risk management tools – FX and bond futures options

# Downside protection philosophy – downside levers

## Defensive

- **Core bonds**
- Cash
- FX
- Options

## Diversifying

- Alternative Debt
- Alternatives
- Infrastructure
- Property
- FX

## Growth

- **Equities**
- Private Equity
- Opportunistic Growth

- Using a combination of defensive levers to protect portfolios makes sense
- The mix of “levers” will vary over time

# Options - an additional risk management lever

## Why we suggest options

- Risk reduction
- Small outlay
- Convexity

## Strategic (SAA) or Dynamic (DAA) allocations

- Long term drag: SAA of 0%
- Needs DAA framework

## When to use options

- Total portfolio considerations
- Outlook for the underlying
- Volatility pricing

## Other key considerations

- Investment objectives
- Appetite for complexity

# When to consider using options

## 1. Equity Options

- Portfolios with high equity risk

## 2. Currency Options

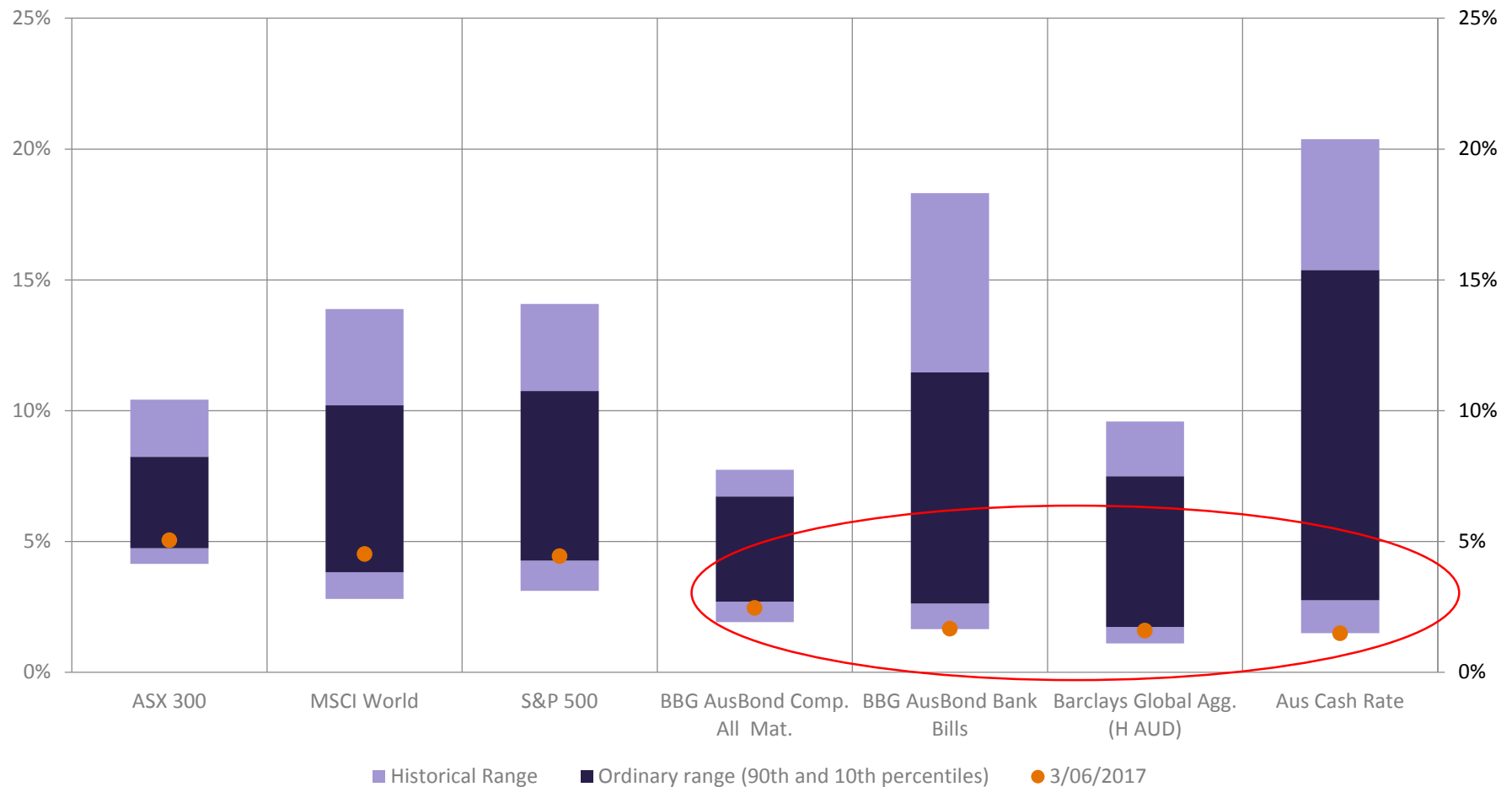
- Portfolios with meaningful non-AUD asset exposure

## 3. Bond Futures Options

- Portfolios with high duration (interest rate) risk

# The current environment - less defensive defensives!

Earnings yield and current yields as at June 2017



# Defensive levers for growth oriented portfolio

Each defensive lever has risks

Asset Class	Risk
Bonds	<ul style="list-style-type: none"><li>• Likely material performance drag if equities rally</li><li>• Basis risk: bonds could fall in stress</li></ul>
Cash	<ul style="list-style-type: none"><li>• Increasing performance drag as equities rally</li></ul>
FX Exposure	<ul style="list-style-type: none"><li>• Basis risk: AUD may not fall in next equity fall</li></ul>
Downside protection (equity options) <sup>1</sup>	<ul style="list-style-type: none"><li>• Low payoff in steady drift down in equities; drag on performance if markets do not fall</li></ul>

1. Expressed as a budget - % of total portfolio for an equities options program



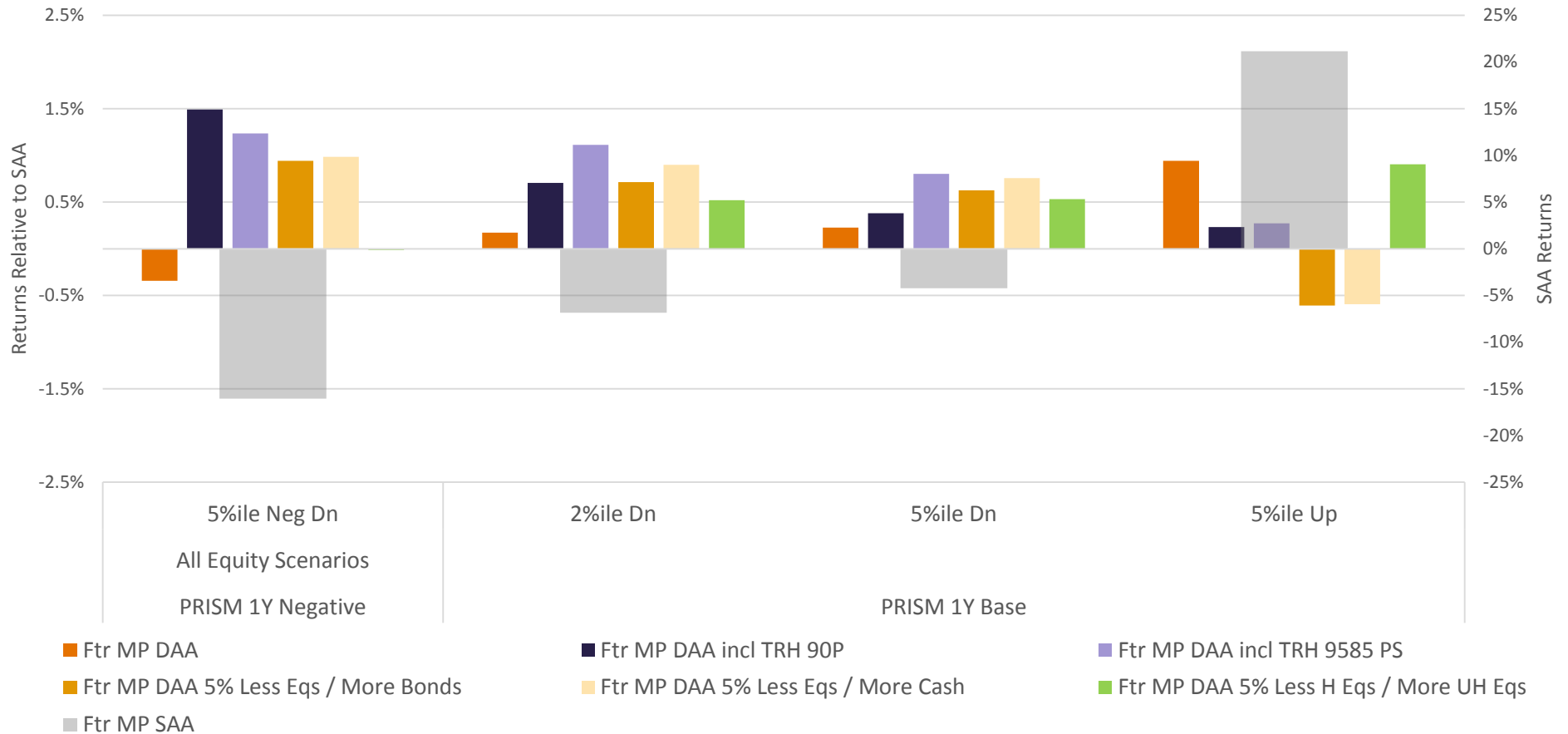
# Bringing it all together – a typical DC equity options framework

Element	Proposal
Protection Objective	Provide downside protection to a portion of the equities portfolio
Equity Fall Range	Protect against “shallow” equity market falls (e.g. 5% to 15%)
Strategic or Dynamic	Strategic allocation should be 0% given long-term drag. Implement using a DAA approach
Option strategy	Use mix of put and put spreads consistent with equity fall range
Cost/budget	Budget between 0% and 0.5% depending on DAA and portfolio risks A dynamic approach to budget spend may make sense
Monetisation	Systematic but can have discretion overlaid
Implementation	Outsourced via a specialist manager

*Putting 0.5% option budget in context*

# Performance in the tails

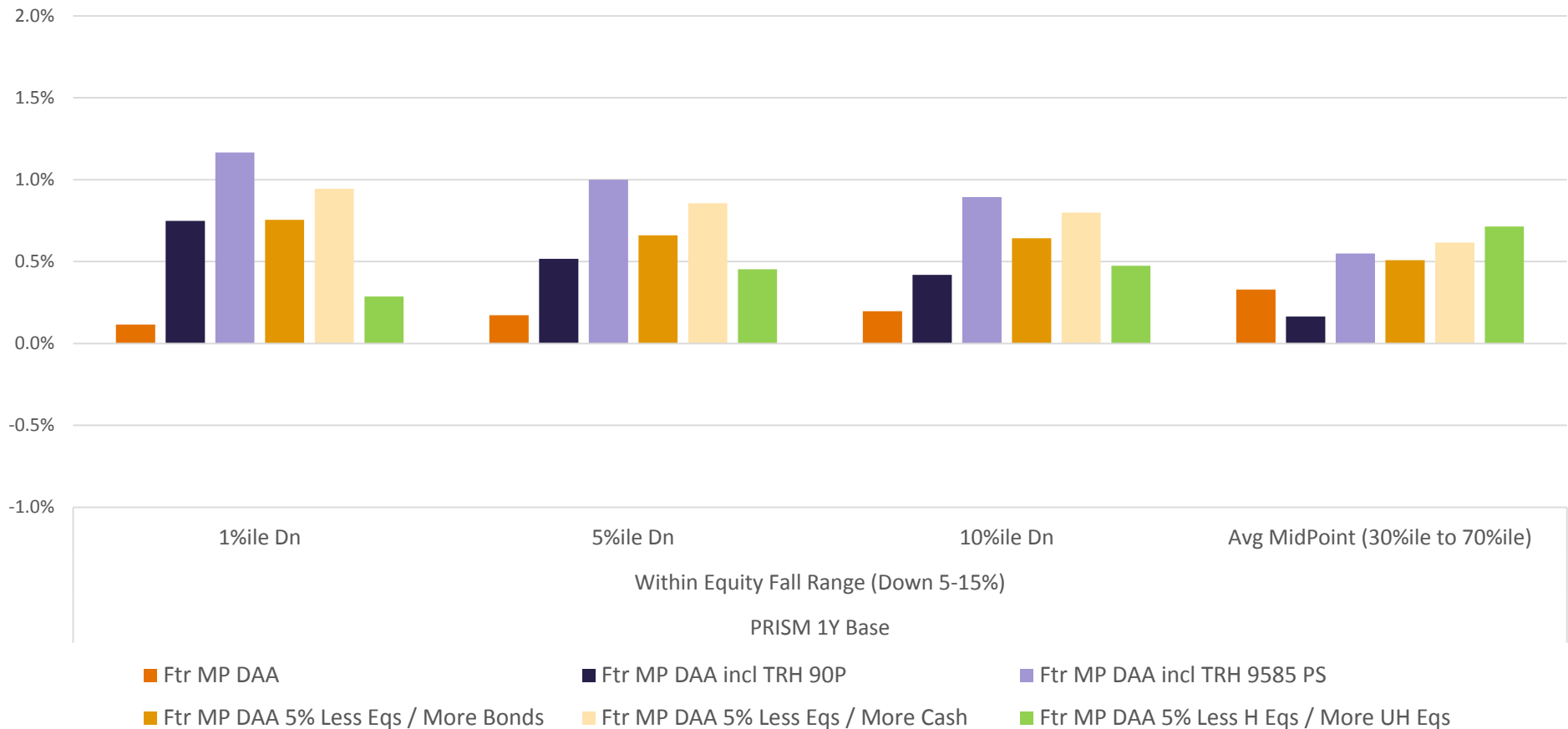
Relative defensive lever performance



Source: PRISM Advanced SAA Module

# Downside protection in “shallow” equity market falls

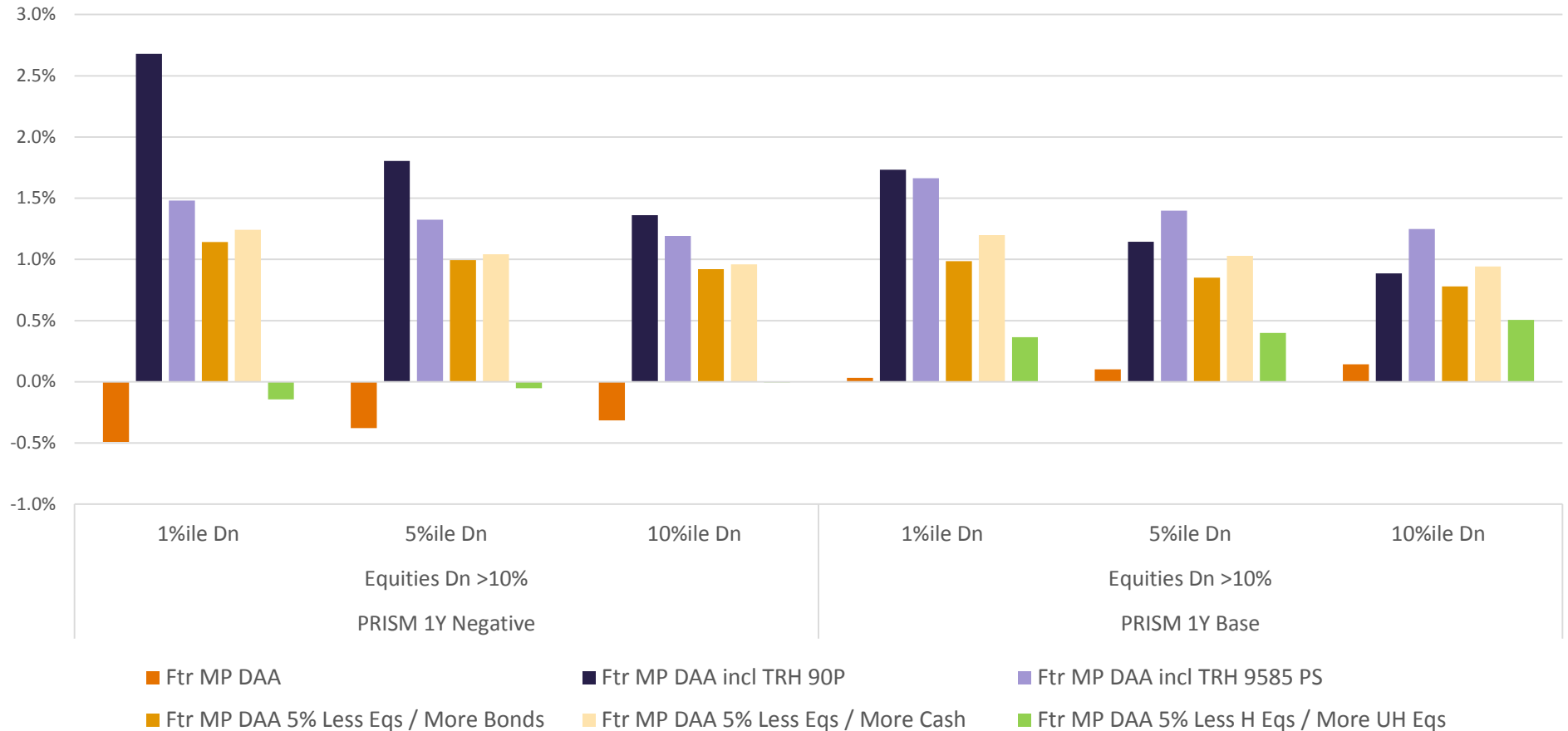
Defensive lever performance relative to SAA when Equities down between 5% to 15%



Source: PRISM Advanced SAA Module

# Downside protection in “deep” equity market falls

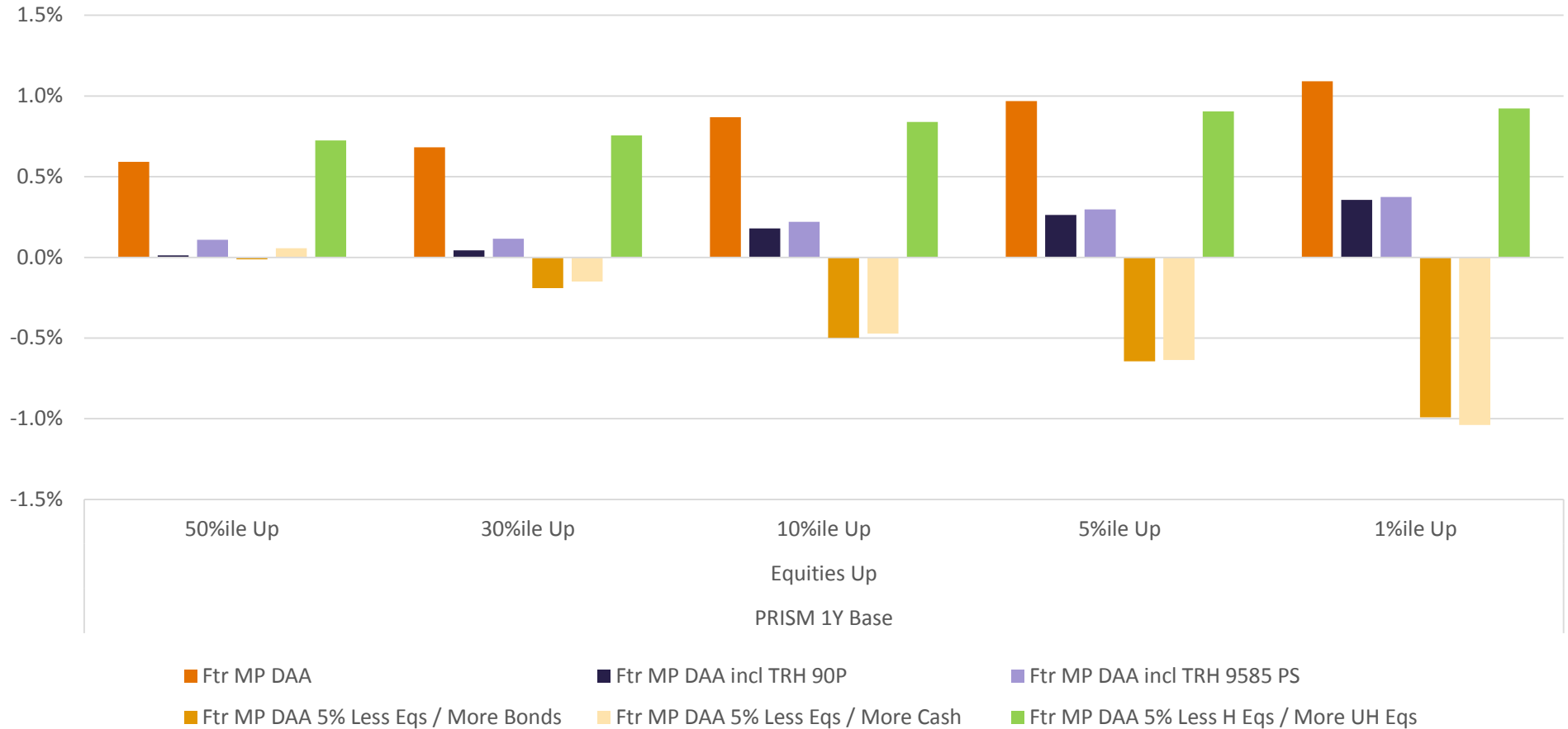
Defensive lever performance when equities down more than 10%



Source: PRISM Advanced SAA Module

# All levers have a cost when equities rally

Assessing the “Cost” of Protection - Relative Defensive Lever Performance when Equities up



Source: PRISM Advanced SAA Module

## *Currency Options*

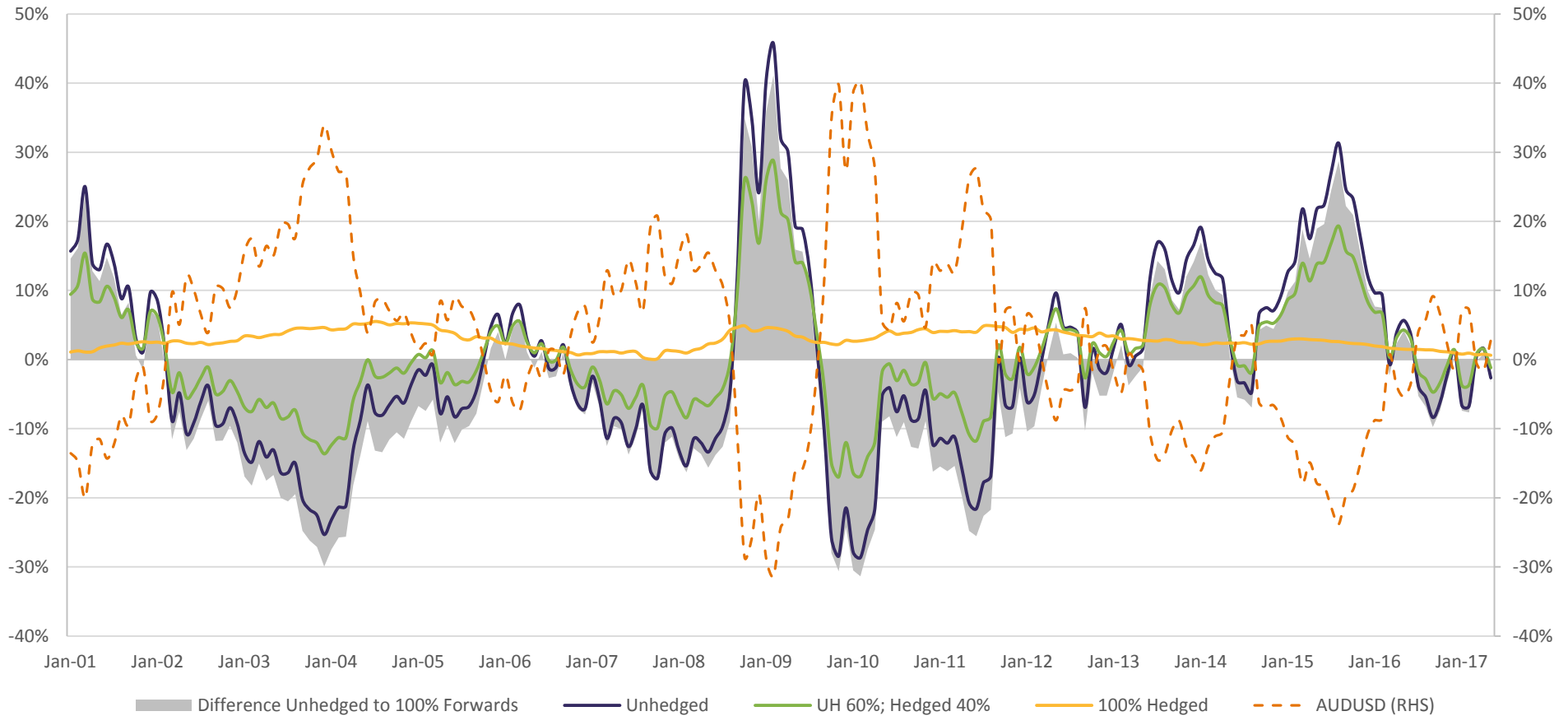
# Currency management

- Frontier's strategic hedge ratio is 15%
- On an international equities allocation of circa 25%, this translates to 40% of the foreign currency exposure being hedged
- Using forwards locks in foreign currency returns
- AUD Call options:
  - Reduce losses should the AUD rally
  - Participate in returns if the AUD falls



# Behaviour of spot and forwards

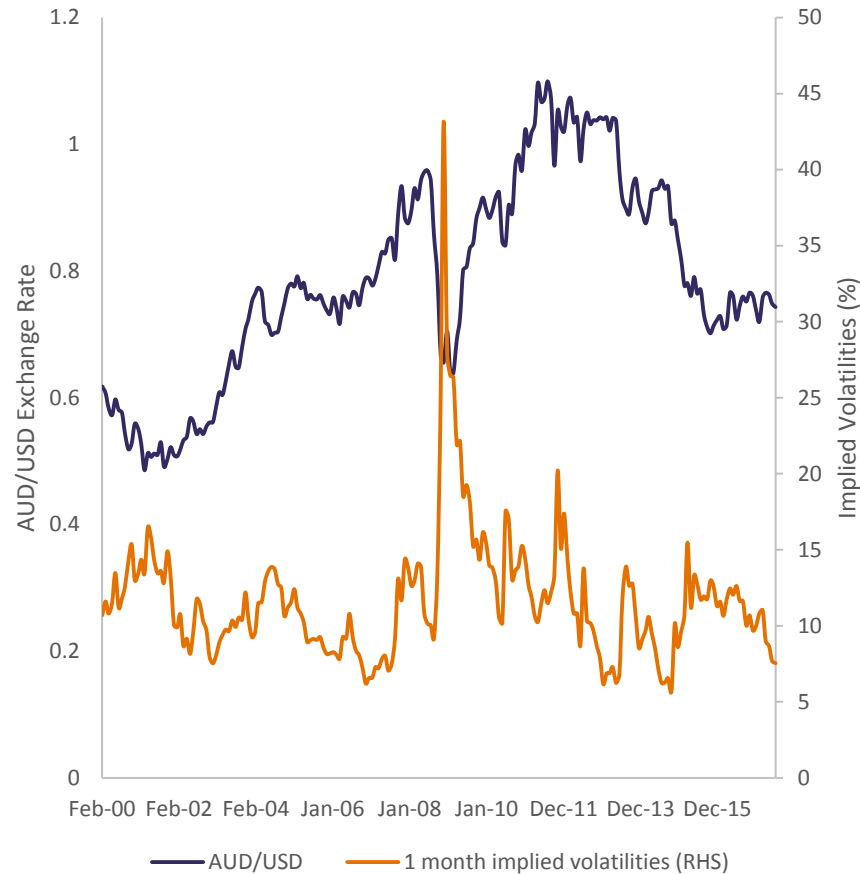
Rolling 12mth performance of different currency hedge levels



Source: Bloomberg, Frontier. 3-month FX Forwards.

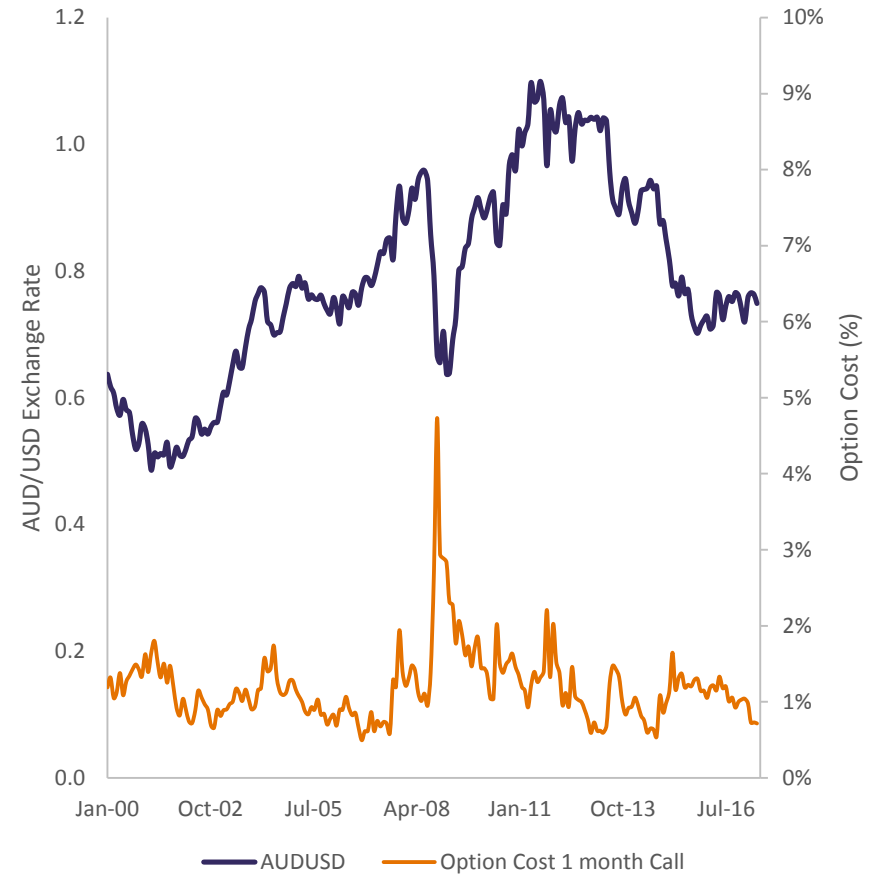
# Behaviour of 1 month call options over time

1-month implied volatilities vs spot



Source: Bloomberg, Frontier

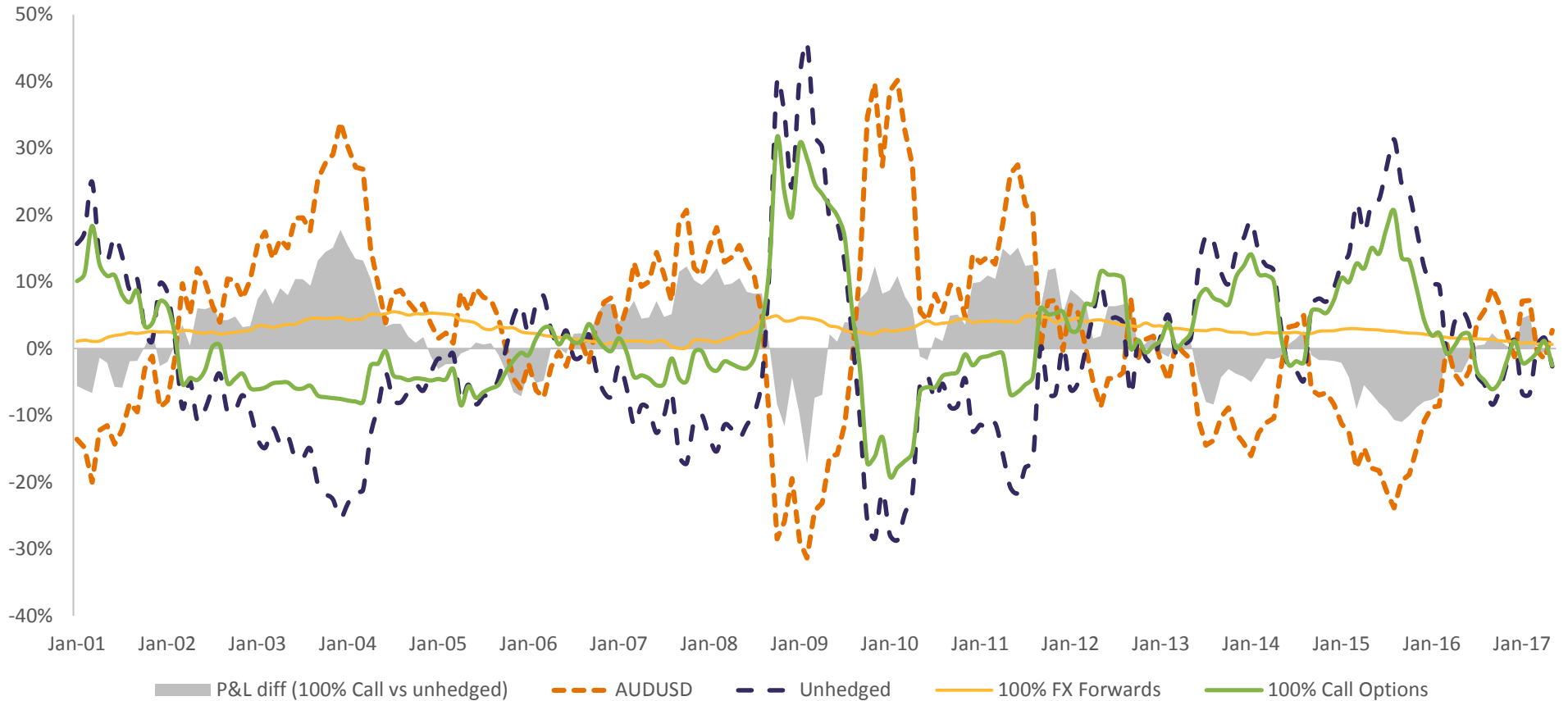
1 month option cost vs spot



Source: Bloomberg, Frontier calculated option price. 1 month near-the-money call option

# Options outperform unhedged

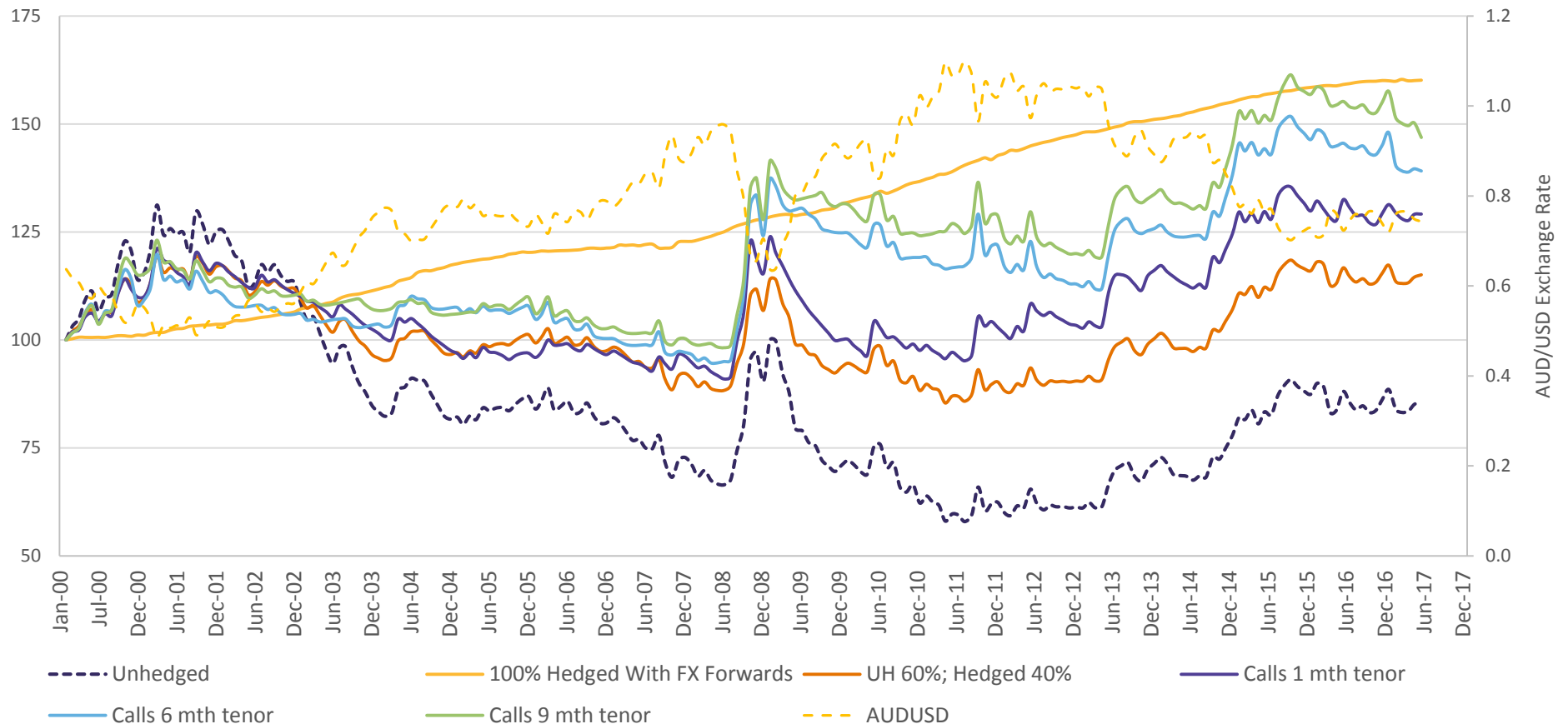
Rolling 12 month performance of different currency management approaches



Source: Bloomberg, Frontier. 1-month Call and FX Forwards.

# Option maturities matter

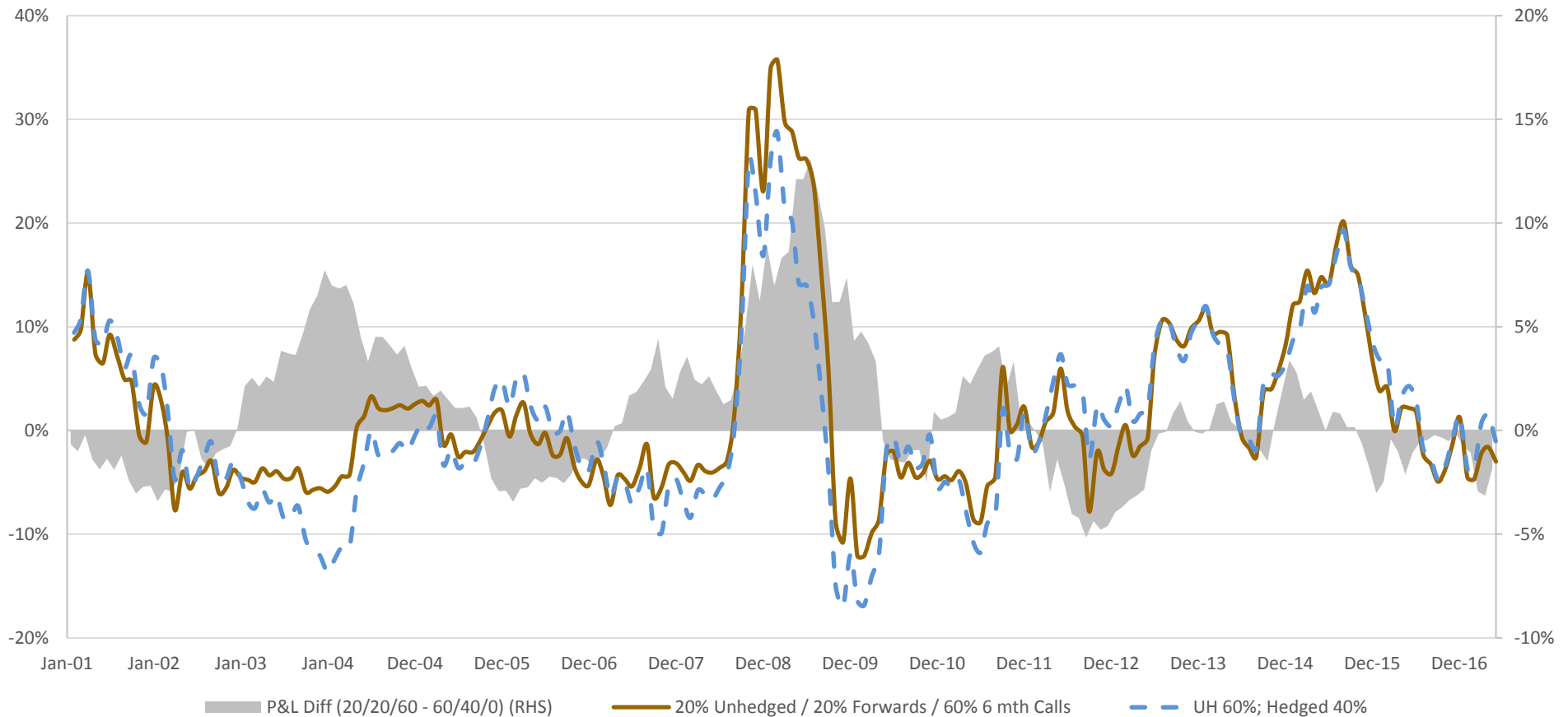
Growth of A\$100 using different call option maturities relative to unhedged or forwards



Source: Bloomberg, Frontier. 1-month FX Forwards.

# Call options improve performance

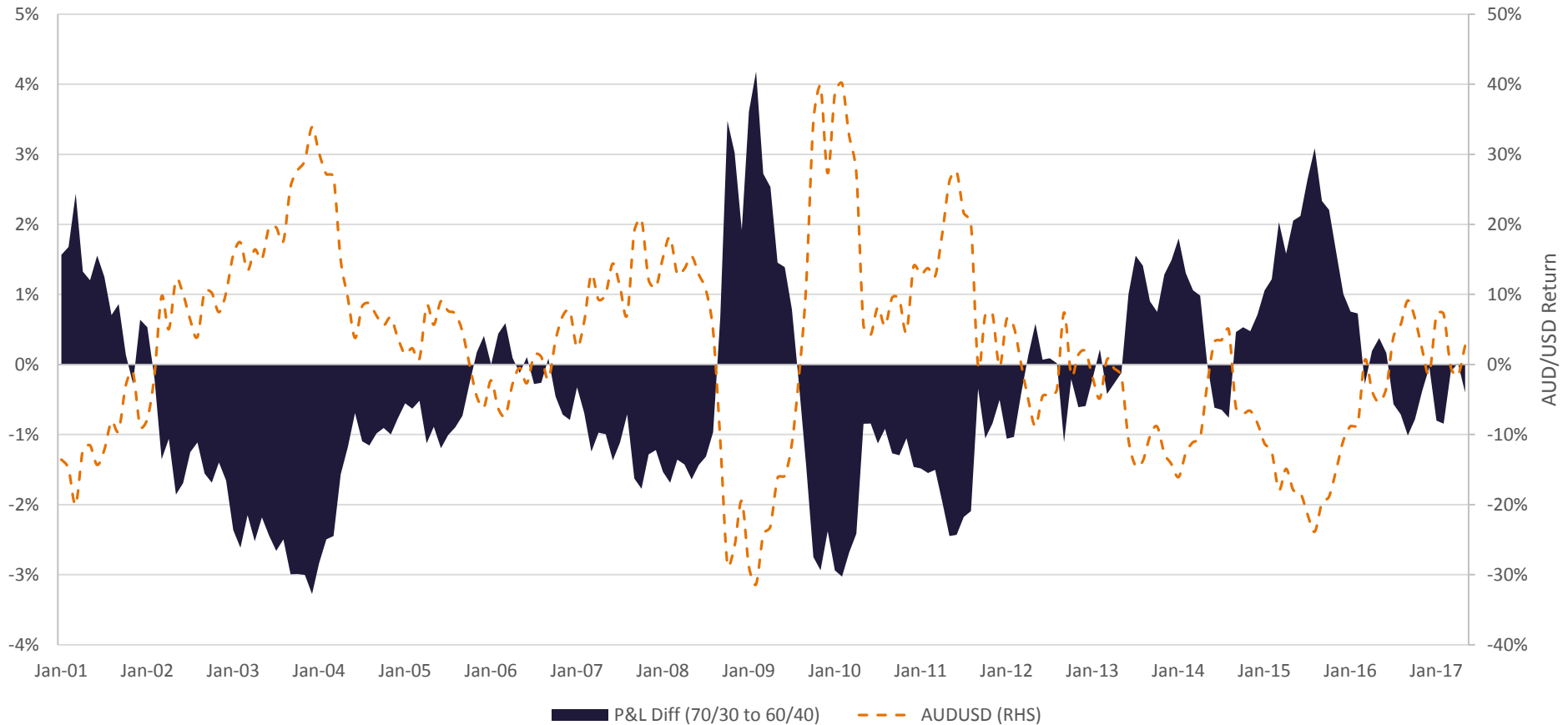
Rolling 12 month returns when using calls options combined with hedged and unhedged positions



Source: Bloomberg, Frontier. 6 month near-the-money call options used. 3 month FX Forwards.

# Relative performance with more foreign currency exposure

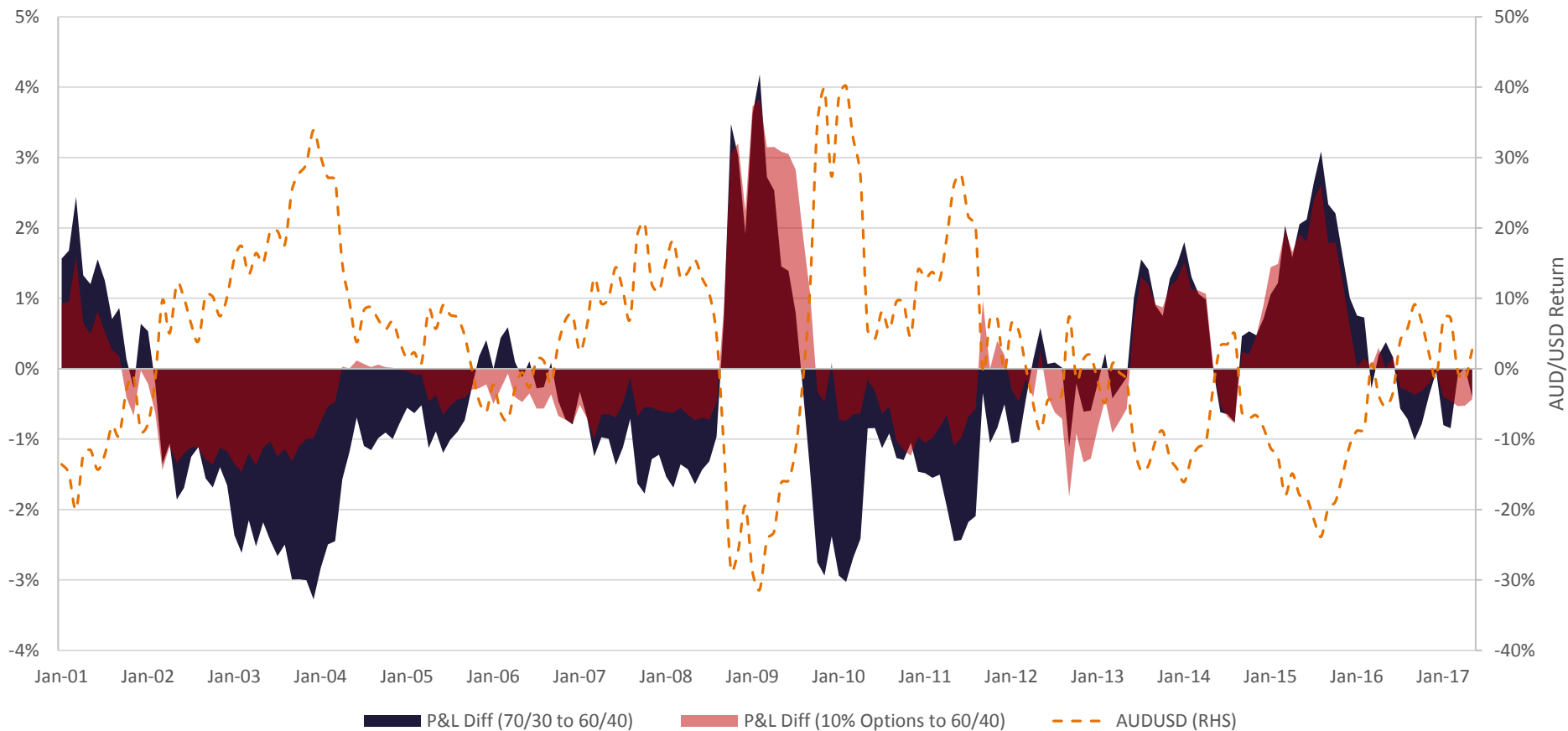
Rolling 12 month return differences for 2.5% currency tilt



Source: Bloomberg, Frontier

# Relative performance when including options for tilt

Rolling 12 month return differences for 2.5% currency tilt using options



Source: Bloomberg, Frontier. 6 month near-the-money call options used.

## *Bond Options*

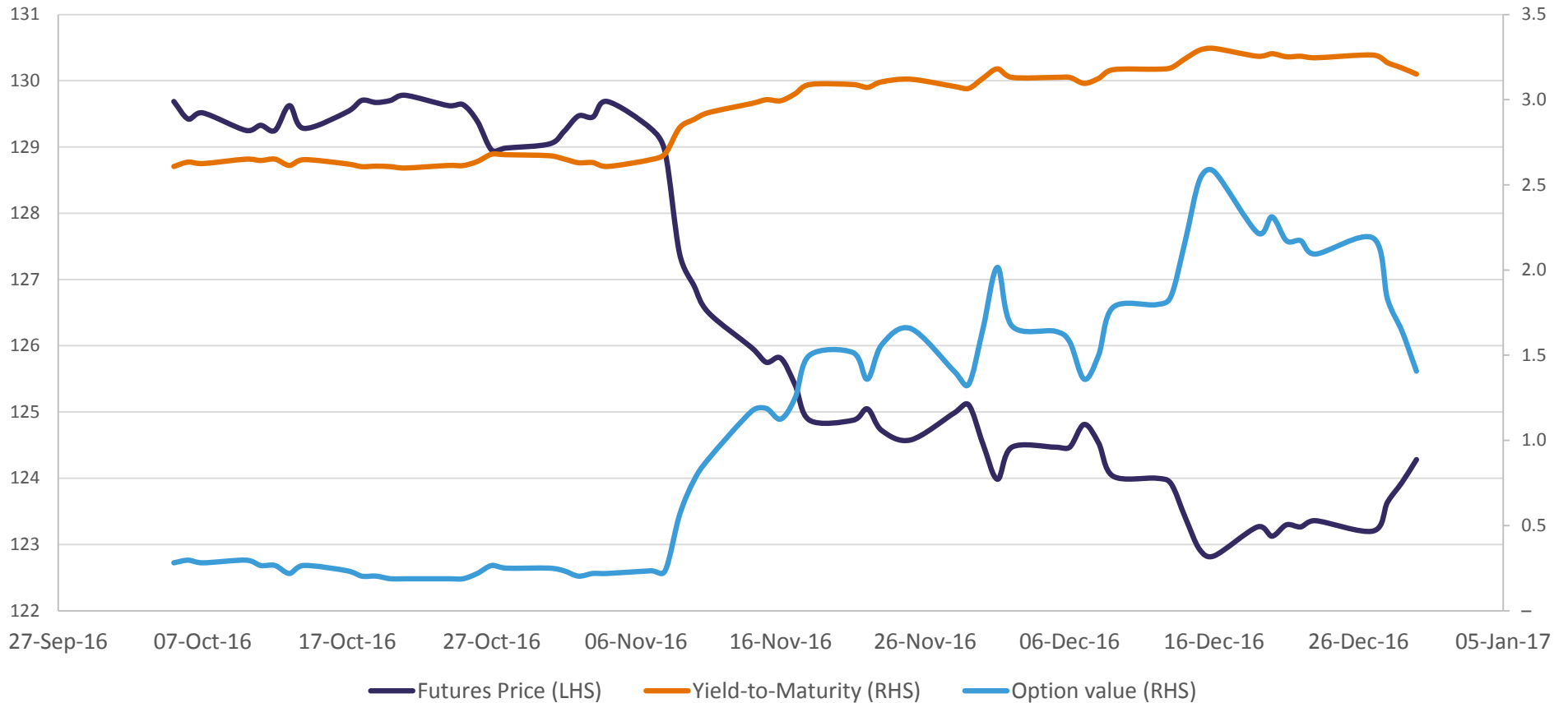


# How to manage risk of rate rises

- Can reduce duration
  - Losses reduced if rates rise
  - But underperform if rates fall
- Using bond options allows participation when rates fall but reduced losses from rate rises

# Real world bond put option performance

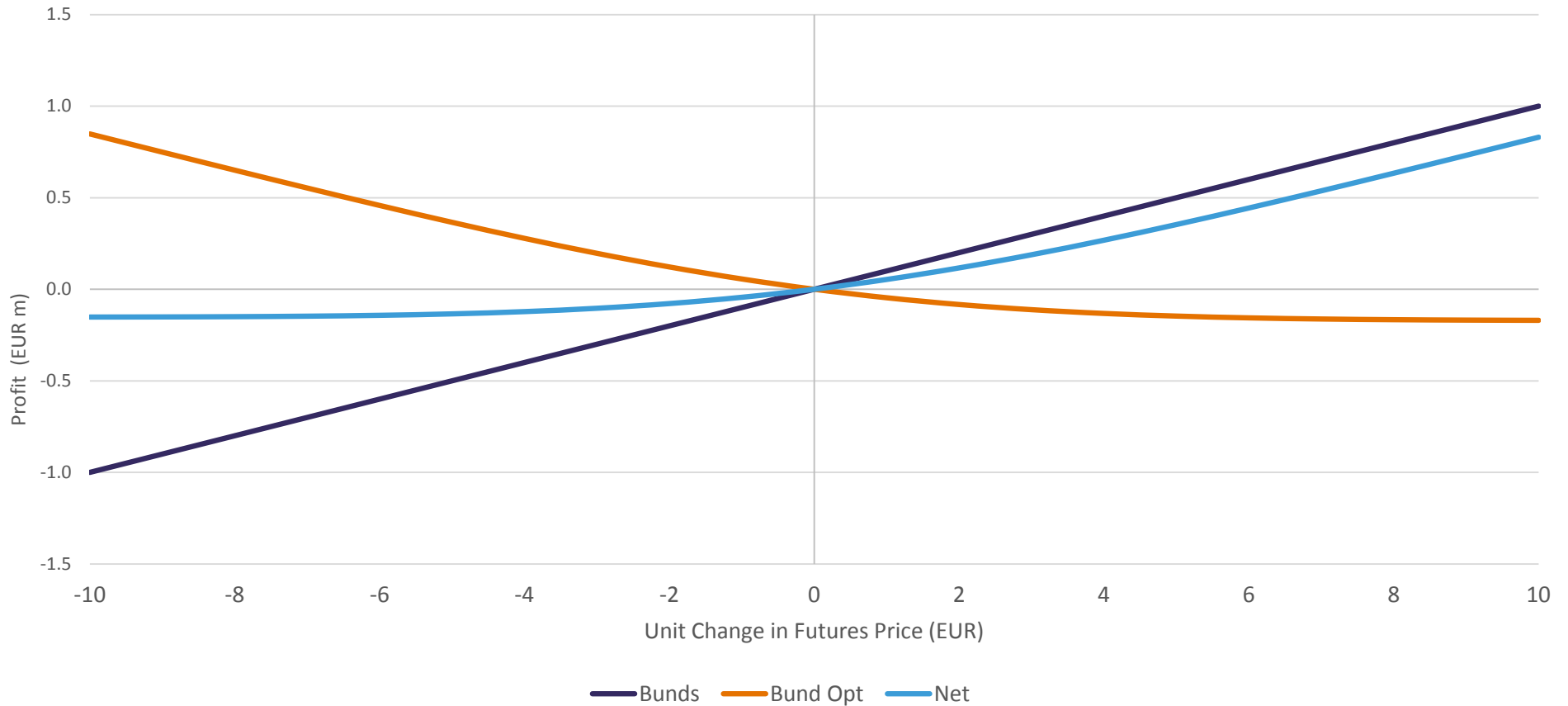
Treasury futures option performance during US rate moves of Q4 2016



Source: Bloomberg, Frontier

# Benefit of combining bond allocation with bond put option

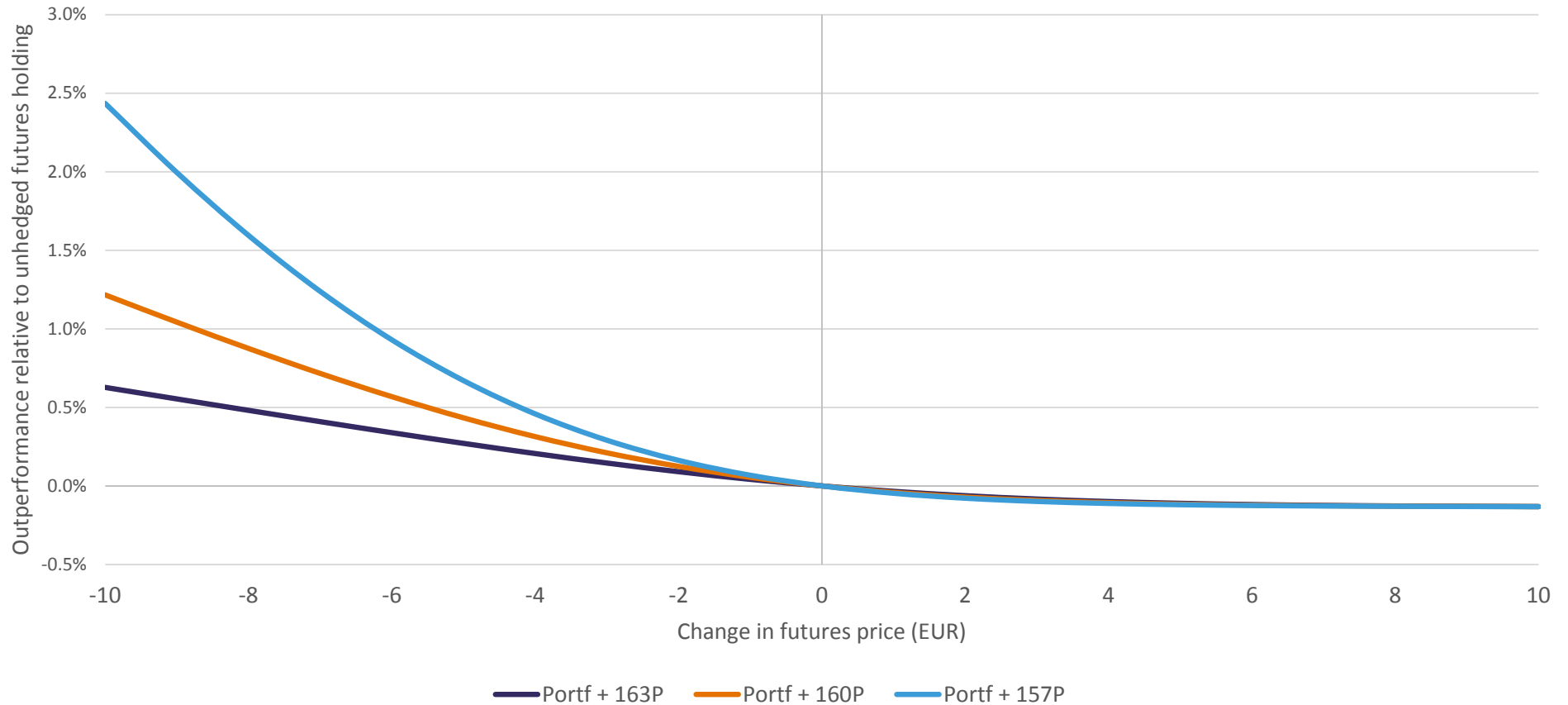
Performance of bonds and bond options for different bond price moves



Source: Bloomberg, Frontier

# Benefits of different option strikes

Relative performance with different option strikes



Source: Bloomberg, Frontier

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