FX Viewpoint

Do passive vol strategies work?

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G10 FX Strategy
Global

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Key takeaways

- We conduct an in-depth analysis for passive 'sell-vol' and 'buy-vol' strategies for the most liquid FX pairs in G10.
- Passive 'sell-vol' has historically performed but face challenge in 2022 due to shifting macro backdrop and risk shocks.
- Passive 'buy-vol' has only performed for AUDUSD put, due to structurally easing RBA and a falling AUDUSD in the past decade.

Passive strategies for FX vol

A passive vol trading strategy maintains a portfolio of options without the discretion of a portfolio manager. In this publication, we examine separate passive 'sell-vol' and 'buy-vol' strategies for EURUSD, USDJPY, USDCAD, and AUDUSD, the top four most traded FX pairs from 2021 Swap Data Repository flows.

'Sell-vol' strategy: the past may not define the future

Passively selling 1-week ATMF straddles every day since 2008 had a historically rising cumulative return profile. We find that selling USDJPY and EURUSD straddles has had better performance, due to these currency pairs having persistent implied vol premiums versus realized vol at the time. We also find daily delta-hedging can improve the risk-adjusted return for passive 'sell-vol' strategies.

Despite the historical performance, we remain cautious on this strategy for the future. The last decade has been characterized by structurally falling FX vol, which provided a favorable macro backdrop for selling vol. Moreover, the risk of unforeseen major shocks could devastate the strategy in the short-term. The Covid shock caused outsized drawdowns, and had wiped out the accumulated premiums since 2016 for three of the four pairs we examined. The passive 'sell-vol' strategy is especially not appropriate for a year like 2022, where we expect FX vol to remain elevated.

'Buy-vol' strategy: hedges and AUD put

Out of the four FX pairs we analyzed, passively buying 1-week AUDUSD put was the only 'buy-vol' strategy that had stable and rising cumulative return profile since 2008. However, we find this is more likely a result of the structurally easing monetary policy by the RBA over the past decade rather than proxy risk hedge property of AUDUSD. The RBA has cut policy rate from 4.75% in 2011 to the zero lower-bound. Rate cuts had accompanied AUDUSD spot on a long term downtrend from parity to temporarily as low as below 0.6, which benefitted a strategy that always bought AUDUSD puts. Amid major risk-off events such as the GFC and Covid shock, passively buying AUDUSD put would have initially had large gains but end up with a net loss as AUDUSD spot retraced from the initial shock. As we are bullish AUDUSD for rest of the year from current level, passively buying AUDUSD put would likely lead to a loss for 2022, in our view.

Refer to important disclosures on page 8 to 9. 12380105

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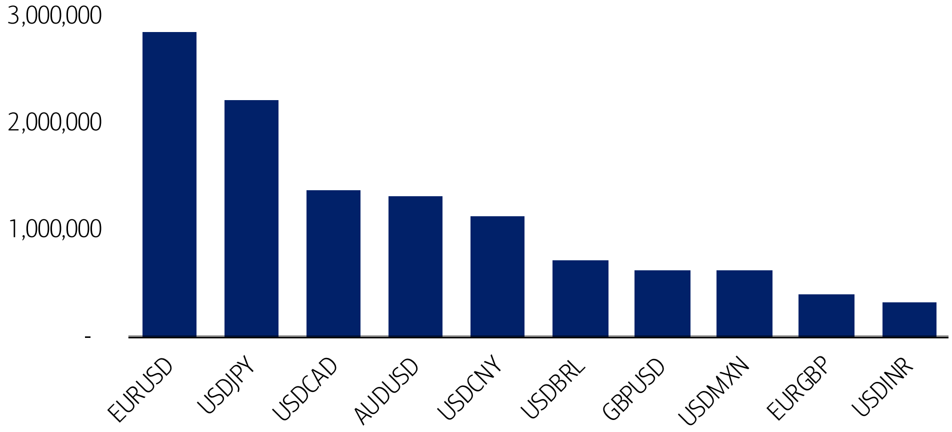
An in-depth analysis on passive FX vol strategies

In the FX vol space, some investors are interested to know what would happen to a passive strategy that is always selling volatility to potentially earn income. By contrast, other investors are considering a passive hedge that is always buying volatility. To reduce slippage and transaction costs, passive strategies tend to be applied to liquid underlying assets and short-dated tenors. In this analysis we examine simple 'sell-vol' and 'buy-vol' strategies using 1-week expiry, at-the-money-forward straddles for EURUSD, USDJPY, USDCAD, and AUDSD (Exhibit 1), which are the top 4 most traded pairs for FX options from the Swap Data Repository in 2021 (Liquid Insight, 13-Jan-2022).

Exhibit 1: Top 4 most traded FX option pairs were EURUSD, USDJPY, USDCAD, and AUDUSD in 2021
2021 SDR aggregated options notional (million USD) by currency pairs



Source: BofA Global Research, DTCC

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Passive 'sell-vol' strategy

Passive 'sell-vol' strategy has had a positive historical return in the last decade

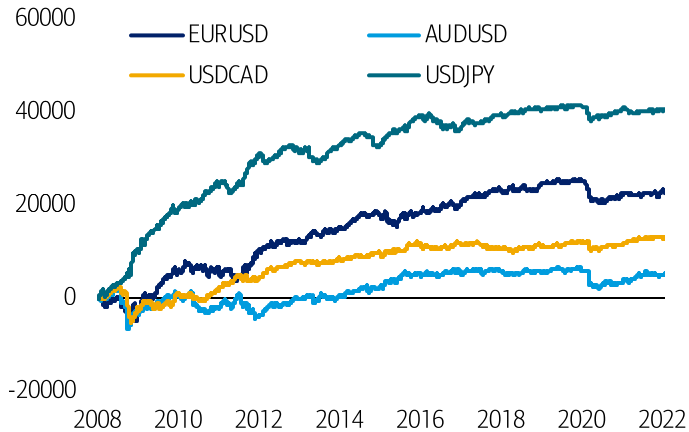
For the 'sell-vol' strategy, we examine the cumulative returns of an investor that would sell 1-week ATMF straddle every day since 2008. Conceptually, this strategy should generate a steady stream of income from receiving daily option premiums, but see large drawdowns when the options end up becoming ITM for the buyers. Exhibit 2 shows historically the 'sell-vol' strategy has performed well since 2008. Passively selling straddles for all four currency pairs has seen steadily rising cumulative returns over the long run. Selling straddle for USDJPY has generated the most returns, followed by EURUSD.

Better performance for currency pairs with high implied vol premium

Investors who sell straddles benefit when future realized vol turns out to be lower than implied vol at inception, such that the spot does not move beyond the strike prices of the straddle. The 'sell-vol' strategy's greater performance for USDJPY and EURUSD since 2008 can be attributed to a persistent and a more pronounced implied vol premium for these two currency pairs. Since 2008, the average 1-week implied vol has been above realized vol by more than 0.5 for EURUSD and USDJPY, while the same measure is close to zero for USDCAD and negative for AUDUSD (Exhibit 3). "High-beta" currencies pairs like AUDUSD and USDCAD that are more likely to see realized vol rise above implied are less ideal candidates for 'sell-vol' strategies.

Exhibit 2: Passive 'sell-vol' strategy performance over long term varies by currency pair

Cumulative return of passive sell 1-week straddle strategy since 2008



Source: BofA Global Research. Cumulative return is computed as the cumulative pnl in USD pips with straddle premiums calculated using Black Scholes. Theoretical performance presented is hypothetical in nature. It is not intended to be an indicative of actual or future performance. The actual performance may vary significantly from the theoretical performance.

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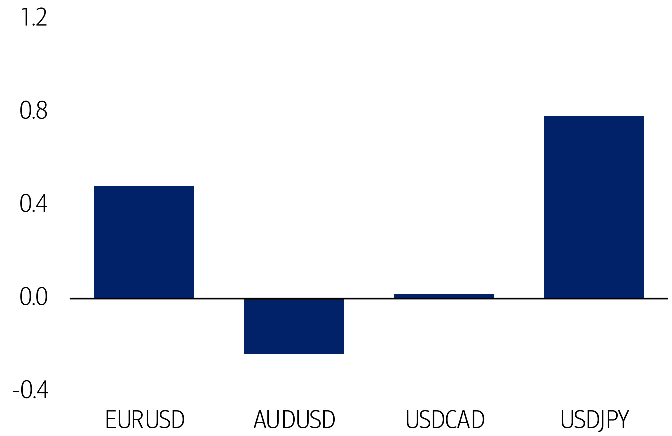
Exhibit 3: USDJPY has highest implied vol premium among FX pairs

Average of 1-week implied-realized vol premium since 2008



Source: BofA Global Research, Bloomberg

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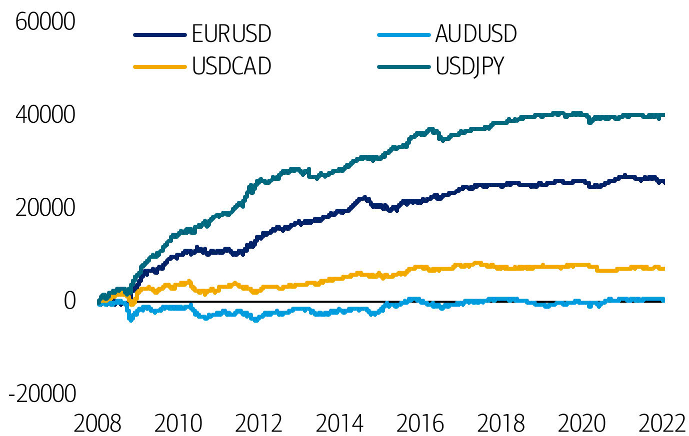
Delta-hedging can improve risk adjusted return for 'sell-vol' strategy

Exhibit 4 shows the cumulative return for passively selling 1-week straddle with daily delta-hedging. EURUSD and USDJPY have similar absolute cumulative returns with or without delta-hedging, but delta-hedging has worsened the cumulative return of the 'sell-vol' strategy for USDCAD and AUDUSD. Delta-hedging does not necessarily improve the absolute return of the strategy but can improve the risk adjusted return by reducing the volatility of the strategy. Exhibit 5 shows information ratios with delta-hedging are improved for all currency pairs except for AUDSUD.

Exhibit 4: Sell vol with delta-hedging had similar performance ranking

Cumulative return of passive sell 1-week straddle strategy with daily delta-hedging since 2008



Source: BofA Global Research. Cumulative return is computed as the cumulative pnl in USD pips with straddle premiums calculated using Black Scholes. Theoretical performance presented is hypothetical in nature. It is not intended to be an indicative of actual or future performance. The actual performance may vary significantly from the theoretical performance.

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Exhibit 5: Delta-hedging could improve risk-adjusted return

Information ratios for the 'sell-vol' strategy with and without delta hedging

	EURUSD	**AUDUSD**	**USDCAD**	**USDJPY**
without delta-hedging	0.97	0.24	0.83	2.07
with delta-hedging	2.24	0.04	0.90	3.33

Source: BofA Global Research

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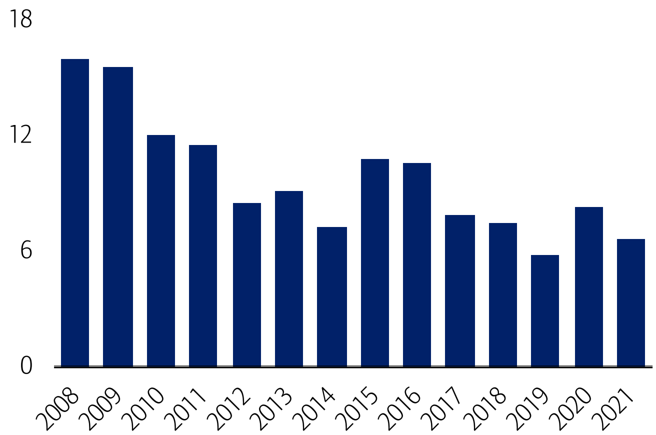
Macro backdrop may be less supportive for 'sell-vol' strategy in the future

We still hold a cautious view on the 'sell-vol' strategy, despite an apparent strong performance since 2008. With global central banks loosening monetary policies over the past decade, FX implied vols have seen broad decline (Exhibit 6). ECB-Fed monetary policy divergence in 2015-2016 and Covid shock in 2020 were the only two instances where implied vols significantly rose from the previous year. As we expect elevated FX vol for 2022 on the back of central bank monetary policy uncertainties and high global inflation, the macro backdrop may be less supportive for the 'sell-vol' strategy in the future.

Major risk-off event is a significant risk for 'sell-vol' strategy

The potential for a large drawdowns is another material risk for the 'sell-vol' strategy. If an investor had initiated the strategy in 2016 instead of 2008, the Covid shock in 2020 would have wiped out the cumulative gains from the past four years for USDJPY, AUDUSD, and USDCAD (Exhibit 7). Selling EURUSD straddle would also have seen a drawdown of more than 50%.

Exhibit 6: G10 FX implied vols have been declining since 2008
Avg of 1-week EURUSD, AUDUSD, USDCAD, USDJPY implied vols by year



Source: BofA Global Research, Bloomberg
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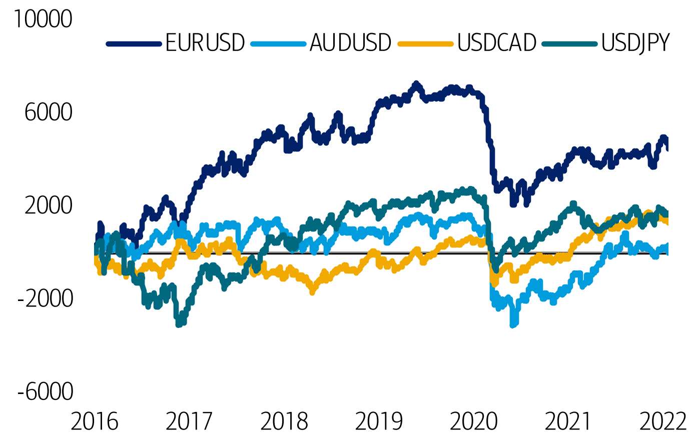
Exhibit 7: Major risk-off events like Covid can cause large drawdowns
Cumulative return of passive sell 1-week straddle strategy since 2016



Source: BofA Global Research. Cumulative return is computed as the cumulative pnl in USD pips with call/put premiums calculated using Black Scholes. Theoretical performance presented is hypothetical in nature. It is not intended to be an indicative of actual or future performance. The actual performance may vary significantly from the theoretical performance.
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Passive 'buy-vol' strategy

Passively buying 1-week AUDUSD put has performed since 2008

Breaking down the cumulative return for the straddle between returns from selling calls versus from selling puts show that the overall lack of return for selling AUDUSD straddle has been due to the loss from selling puts, with or without delta hedging (Exhibit 8, Exhibit 11). This means passively buying 1-week ATMF AUDUSD put has had a positive historical cumulative return since 2008. This result is unique to AUDUSD among the four majors under consideration, as we did not find that buying one-sided optionality has had a rising cumulative returns for the rest of the three currency pairs. It should be noted that passively owning option hedge tailored towards investors' specific overall portfolio could improve the risk-adjusted return for the overall portfolio.

Exhibit 8: Selling AUDUSD puts has had negative cumulative return
Cumulative returns for passive selling 1w AUDUSD calls vs puts

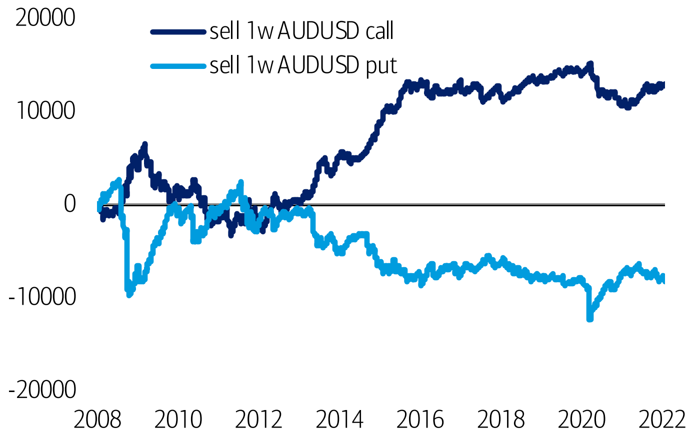

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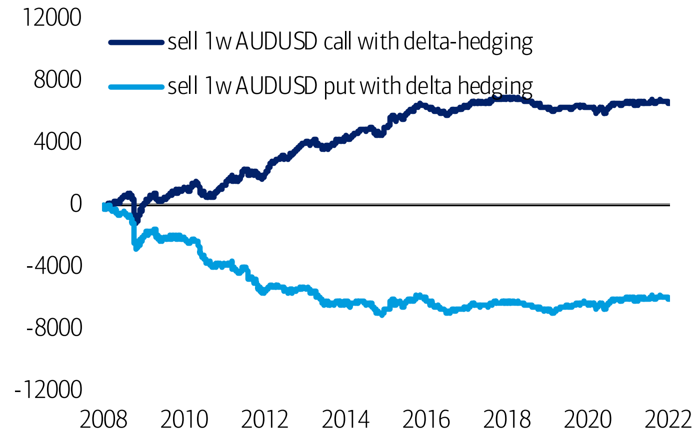
Exhibit 9: Diverging return profiles for sell AUDUSD call vs put is more apparent with delta hedging
Cumulative returns for selling 1w AUDUSD calls vs puts with delta hedging



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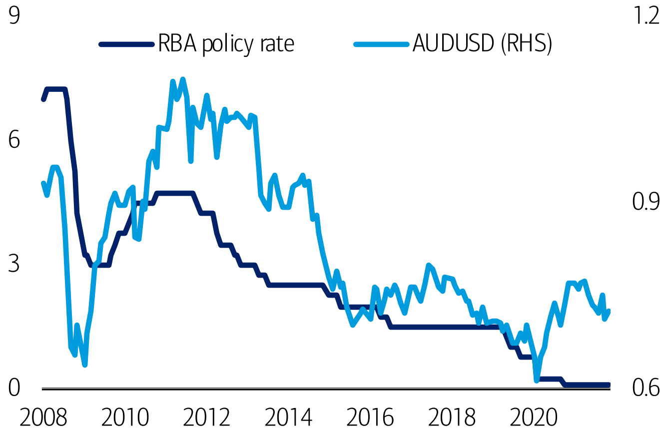
RBA rate cuts and declining AUDUSD spot supported buying AUDUSD puts

Structurally easing monetary policy by the RBA had led to a long-term AUDUSD downtrend over the past decade. Therefore, passively buying AUDUSD put has performed, in our view. Since 2011, the RBA has gradually reduced policy rate from 4.75% to zero lower-bound, causing AUDUSD spot to depreciate from parity to below 0.6 at one point (Exhibit 10). The passive strategy of buying AUDUSD put also made the most cumulative gains between 2011 to 2015 when AUDUSD was falling the most aggressively (Exhibit 11).

AUDUSD's risk proxy hedge property is not enough for passive vol strategy

Many investors are aware of AUDUSD put's property as a risk-off hedge. Exhibit 11 shows both in 2008 and 2020, major event shocks like the GFC and Covid shock led to outsized gains for those who bought AUDUSD puts. However, as AUDUSD spot retraced the loss from the initial shock, the strategy of passively buying AUDUSD puts gave back all of the gains.

Exhibit 10: AUD has structurally weakened with RBA rate cuts
Evolution of RBA policy rate and AUDUSD



Source: BofA Global Research, Bloomberg

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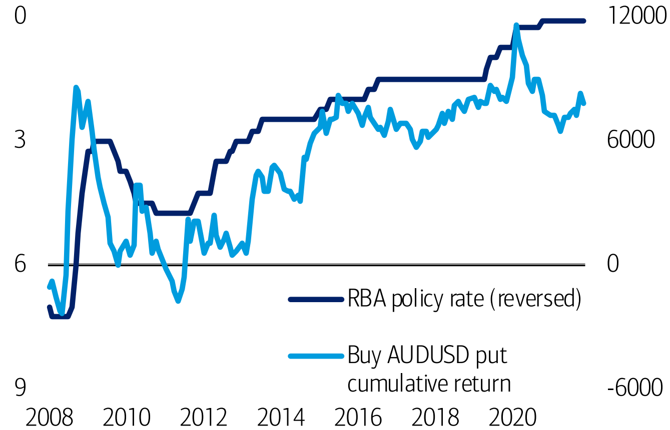
Exhibit 11: Evolution of RBA policy rate vs passively buy AUD put
Loose RBA monetary policy has helped the passive buy AUD put strategy



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Near-term AUD spot trend does not support passive buy put strategy

Our fundamental strategists are bullish AUDUSD at the current level. Should our Q2 2022 and year-end AUDUSD forecasts of 0.74 and 0.78 turn out directionally accurate (Global FX Weekly: 04 February 2022), an AUDUSD spot uptrend for rest of the year would likely lead to cumulative loss for a buy AUDUSD put passive strategy.

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