

FX Column: What to Sell and What to Buy

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Many people ask me which structure in currency risk management trades and why. It is basically all about what one can sell. If the benefits of the client, the sales and the trader match, if a structured product feels like it is a deal for all parties involved, then it often trades. I will explain in this FX column how, given a volatility smile in AUD-JPY, one can propose currency hedge solutions for both an importer (AUD buyer = JPY seller) and an exporter (AUD seller = JPY buyer).

AUD-JPY Market

We consider the currency pair Australian Dollar (“Aussie”) against Japanese Yen AUD-JPY on 3 February 2025 with market data as in [Table 1](#).

Spot	94.00	ATM volatility	11.631%
AUD 6 M Money Market	4.022%	25-Delta Risk Reversal	-2.715%
JPY 6 M Money Market	0.211%	25-Delta Butterfly	0.209%
6 M Forward	94.2227	ATM bid-offer in volatility	0.75%

Table 1: AUD-JPY Market Data as of 3 February 2025; source: ICE Data Services

The volatility is high and heavily skewed down, illustrated in [Figure 1](#).

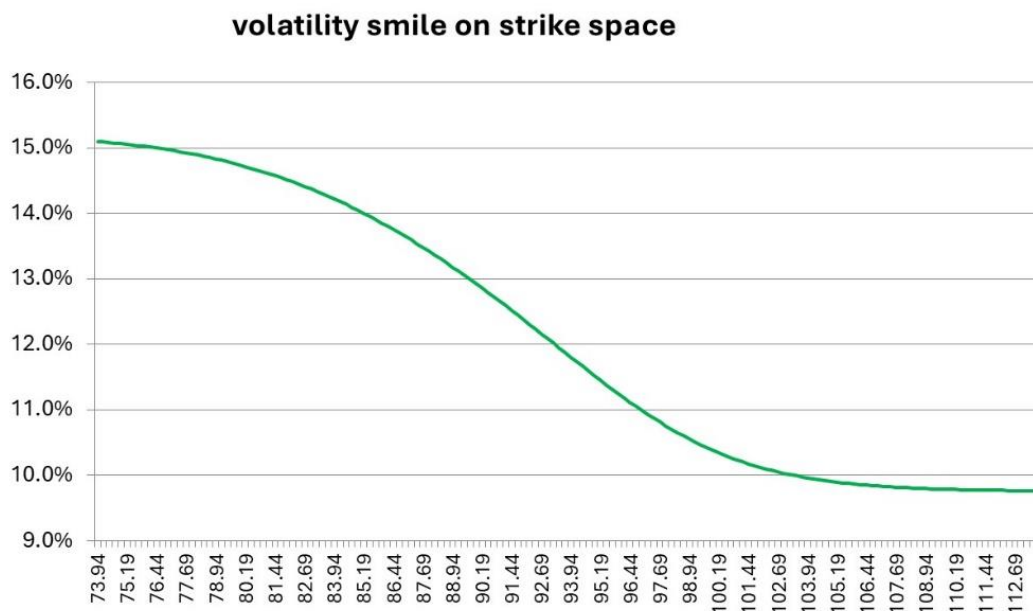


Figure 1: AUD-JPY 6-Months Volatility Smile on 3 February 2025.

The corresponding implied density for the spot in 6 months shown in [Figure 2](#) indicates a higher probability for small up moves compared to smaller probabilities for small down moves.

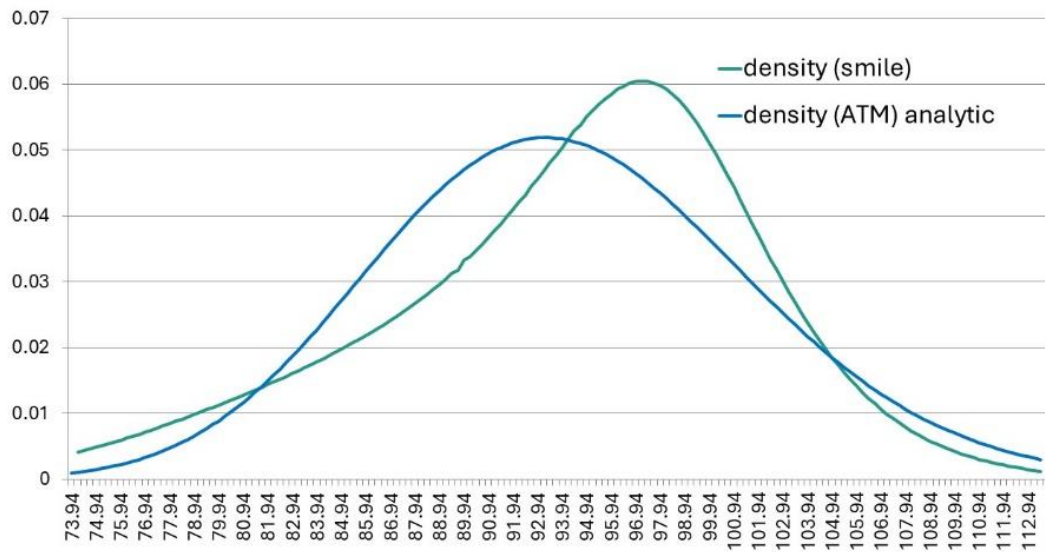


Figure 2: AUD-JPY 6-Months Option-Implied Probability Density of the Spot on 3 February 2025. The blue curve is the benchmark Black-Scholes model (log-normal) without smile.

How do we cope with this market scenario?

The Forward Rate and the Risk Reversal usually drive the trade ideas. As one might expect, the general principle “buy-low-sell-high” can be applied. For vanilla options, we know that the higher the volatility the higher the price (monotone volatility-value relationship); this means, when composing a strategy of vanilla options, we want to buy options with low volatility and sell options with high volatility.

Results in:	AUD	Calculate F2	Solver	Refresh Rates F4	Amount	B/A	AUD Spot Pr
Market Volatility:					10.16221 / 11.07299		13.04202 / 14.04572
Market Price:	-21,307/-666.07				104,279/124,920		-115,266/-135,906
AUD per JPY pips:	-0.00002/0.00000				0.00011/0.00013		0.00013/0.00015
Black Scholes:	50,172				137,919		-87,747
Barrier Hit Probability:							
Underlying Vanilla:							
Delta:	4,803,994				2,497,160		2,306,835
Forward Delta:					2,546,965		2,352,844
Vega:	2,100				22,674		-20,574
Gamma:	329,408				564,017		-234,609
dVega/dVol:	-387.48				733.54		-1,121
dVega/dSpot:	3,670				1,851		1,819

Figure 3: AUD-JPY Risk Reversal Strategy in ICE Data (SuperDerivatives).

A Deal for the AUD Buyer

An importer in Japan or an exporter in Australia is an AUD buyer = JPY seller. The strong volatility skew (negative Risk Reversal market quote) as shown in Figure 1 suggests a straightforward hedging strategy against rising Aussie: a Risk Reversal (RR) strategy, where the treasurer buys an AUD call = JPY put with upper strike (volatility is low) and sells an AUD put = JPY call with lower strike (volatility is high). As an example, we consider a call struck at 99 and put struck at 88 as in Figure 3.

This feels like a deal for all parties involved, because:

- For the buy-side *accountants* and *compliance* freaks: It is a zero-cost risk-free hedge with a guaranteed worst case.
- For the *treasurer*, the client, the upside 99.00 is his worst case for buying AUD, and is only 3 big figures above the spot, or 4.50 big figures above the outright forward rate (94.50 with sales margin). His best case 88.00 is 8 big figures below spot and 6.50 big figures below forward. While the forward rate should be the benchmark, and even with this benchmark the upside worst case is closer than the downside best case, the feeling one gets using the spot as the benchmark is even better.
- For the *sales* team, given the offer price is AUD -666, the sales margin is AUD +666 when sold at zero cost. For a vanilla structure, this is what one can earn in a competitive FX options market.
- For the *trading* team, the volatility bid-offer spread of 0.75% translates into a mid-offer spread in cash of about AUD 10,000. Trading could even lower this via “buy-one-get-one-free”, i.e. apply the spread only to one of the two legs and quote the other one at choice, i.e. mid-market value. This could either generate a higher sales margin or provide even better conditions for the client.
- For the sell-side *risk controllers*, because it is vanilla based flow business with low complexity and non-exploding Greeks.

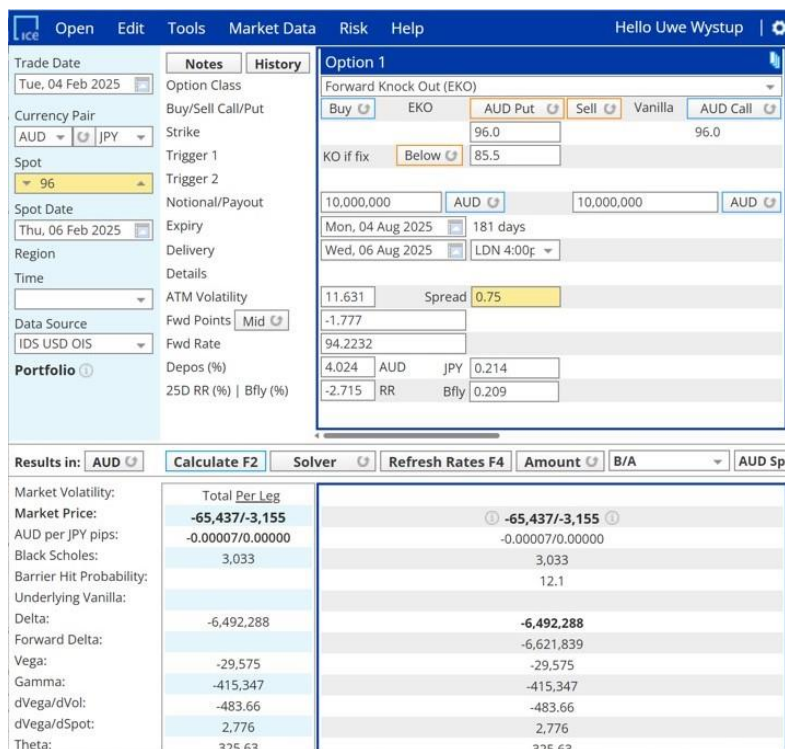


Figure 4: AUD-JPY Knock-Out Forward Strategy in ICE Data (SuperDerivatives).

A Deal for the AUD Seller

An exporter in Japan or an importer in Australia is an AUD seller = JPY buyer. Selling Aussie forward feels bad, because of the forward *backwardation*: the 6-months forward rate is *below* spot, but an AUD seller ideally wants to sell at a high rate. However, we can still beat this forward by accepting some risk. We observe in [Figure 1](#) that downside volatility is high and in [Figure 2](#) that spot goes down with a lower probability compared to a Black-Scholes model, and compared to an up-move. Therefore, one can use a lower knock-out barrier to swing a deal: With lower volatility on the downside, the chance of knock-out is lower, and with lower down-move probability, the chance of the knock-out event will be reduced. A common strategy for this market scenario is a Knock-Out Forward (KOF). For example, we consider an AUD seller forward with forward rate 96.00 and European style knock out barrier 85.50, i.e. the forward terminates, if the spot is at or below 85.50 at maturity, see [Figure 4](#).

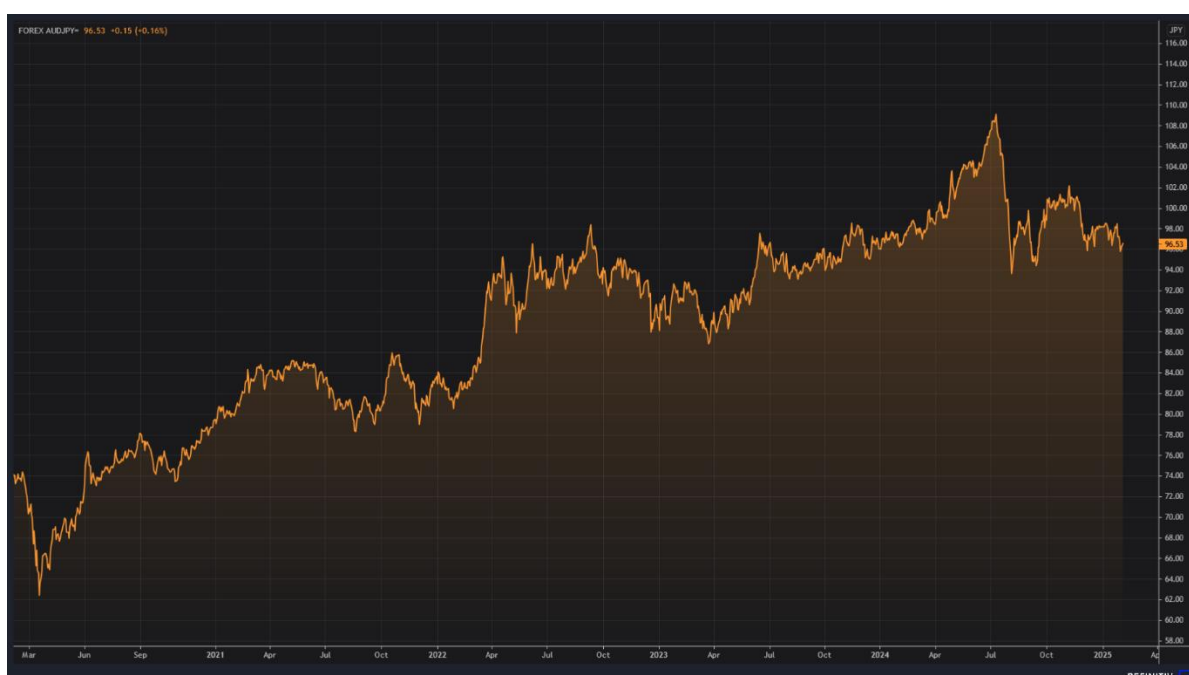


Figure 5: AUD-JPY historic spot price 5 February 2020 – 4 February 2025; source: Eikon.

This feels like a deal for all parties involved, because:

- For the *buy-side*: It is a zero-cost hedge and better than the usually applied do-nothing strategy.
- For the *treasurer*, the client, the contractual forward rate is 96.00, equal to the current spot, and 1.50 big figures better than the market outright forward rate (including sales margin). Considering the historic spot over the last 5 years in [Figure 5](#), the client may take the view that the spot rather increases, although the forward curve decreases; with this view, a spot at 85.50 or lower in 6 months is considered unlikely. Not the last person who would go for a carry-trade. (Nothing is safe here – market touch probability is around 18%, but then we don't have to tell this to the buy-side client.)
- For the *sales team*, given the offer price is AUD -3,155, the sales margin is AUD +3,155 when sold at zero cost. For a first-generation exotics structure, this is what one can earn in a competitive FX options market.

- For the *trading* team, the volatility bid-offer spread of 0.75% translates into a mid-offer spread in cash of about AUD 30,000. This could be lowered to generate a higher sales margin or provide even better conditions for the client. Traders typically argue that they need at least AUD 28,000 AUD to pay for the hedging cost 😊. And can even quantify the details.
- For the sell-side *risk controllers*, because it is European-payoff-based flow business with low complexity and no model risk.

This KOF is normally not used as an exclusive hedging strategy, because the treasurer might lose the hedge; therefore, many consider it as an add-on to improve the forward rate. In private banking, for clients with no underlying cash-flow it is speculation anyway, but quite common.

AUD-Seller Target Forward

Alternatively, if one wants to use the KOF-idea to trade something of similar nature, but lock in at least some profit up to a target, the treasurer can sign up for an AUD-Seller Target Forward as displayed in Figure 6. In the example, a Japanese exporter agrees to sell AUD 1 M (buy JPY) every month at a rate 98.50, considerably higher than spot (and forward), over the next 10 months, so again AUD 10 M in total. The Target Forward terminates once the accumulated profit reaches 30 big figures, or latest in 10 months.

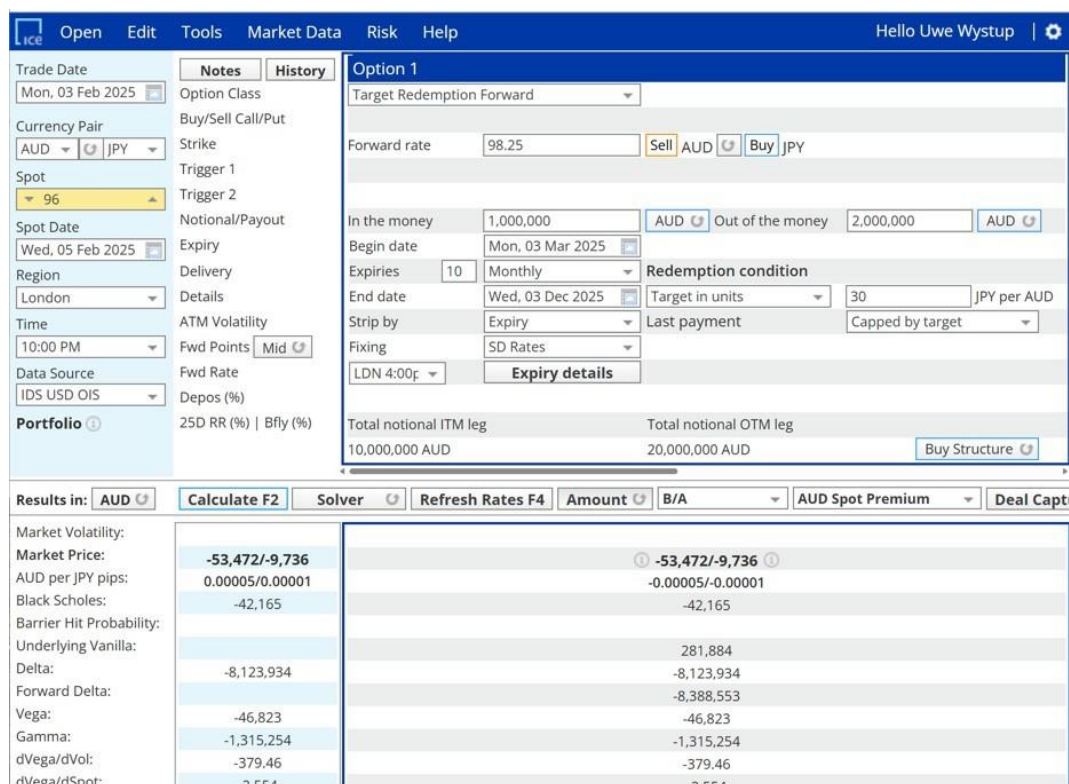


Figure 6: AUD-JPY Target Forward Strategy in ICE Data (SuperDerivatives).

Again, this can be viewed as a deal for all parties, as it is a zero-cost strategy beating the forward, with AUD 9,736 sales margin, AUD 22,000 trading profit; no wonder, it trades frequently.

Summary

1. For each forward curve and the volatility smile scenario, one can determine clever trading strategies using the market to the advantage of *buyers and sellers*, which is why they trade.
2. The general principle is betting against the forward curve (carry-trade, who would have thought?) and the “buy-low-sell-high” approach applied to volatilities.
3. When volatility smile and forward are against the buy-side, many common strategies include some risk and use exotics to benefit from low knock-out probabilities of barriers or the like.

References

- Wystup: FX Options and Structured Products, Second Edition, Wiley 2017.
- Wystup: FX Column [“KOAMKIEU and the psychology of derivatives in private banking”](#), Wilmott, volume 2022, issue 117, January 2022 pp. 20-21.

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