FX QUANT SERIES · 6 OF 6

USD/CNY: A Quantitative Review

a managed appreciation

The renminbi is at its strongest level against the dollar since mid-2022, in a move tightly managed by the People's Bank of China. This note measures how controlled the trend is and how the central bank is now slowing it.

Global Markets Research · FX Quantitative Strategy Desk Prepared by ANDRA MARKETS

−4.3% YTD = CNY stronger

Coverage summary. USD/CNY fixed at 6.7023 on 8 October, 4.3 per cent lower than at the end of 2025, which means the renminbi has gained 4.3 per cent against the dollar this year, and close to its 52-week low of 6.6954. Unlike the other currencies in this series, the renminbi trades within a band around a daily reference rate set by the People's Bank of China, so its volatility is very low (0.9 per cent over one month). Since late September the central bank has set its daily fixing weaker than expected, a sign that it wants to slow the appreciation. Quantitatively, the trend and momentum favour a stronger renminbi, but carry still favours the dollar.

USD/CNY, 8 OCT	1M REALISED VOL	PBOC FIXING, 8 OCT	2Y YIELD GAP
6.7023	**0.9%**	**6.7367**	**+3.53pp**
−4.3% YTD	*2nd pct of 10 years*	*weaker than 6.7254 estimate*	*UST 4.79% vs CGB 1.26%*

Exhibit A. Quantitative dashboard: USD/CNY

Metric	Value	Context
Spot (8 Oct, ECB reference)	6.7023	end-2025: 7.0010
Return 1 week / 1 month	0.0% / -0.1%	3 months: -1.4%
Return YTD / 12 months	-4.3% / -5.9%	
52-week range	6.6954 to 7.1400	position: 2% of range
50-day / 200-day average	6.7206 / 6.8204	spot -1.7% vs 200-day
z-score vs 1-year mean / RSI(14)	-1.3 / 37	
Realised vol 1m / 3m / 1y	0.9% / 1.0% / 2.1%	1m in 2nd percentile of 10 years
Skew / excess kurtosis (1y daily)	-0.33 / 3.5	fat tails if kurtosis > 1
Daily 95% VaR (historical, 1y)	-0.22% / +0.18%	down / up tail
Variance ratio (5-day) / autocorr.	0.84 / -0.03	>1 trending, <1 mean-reverting

Source: ECB euro reference rates (14:15 CET), crossed through EUR/USD to obtain dollar pairs; Andra Markets calculations on log returns, 252-day year. Data to 8 October 2026.

1.0 Executive Summary

Key takeaways

trend: CNY up

A steady, managed trend. The pair is below its 200-day average by 1.7 per cent and twelve-month momentum is −5.7 per cent, the clearest downward trend for the dollar among the six pairs. The appreciation has been gradual, with no daily move larger than 0.6 per cent in the past

year.

PBoC leaning against it

The central bank is slowing the move. Since 23 September the PBoC has set the daily fixing weaker than market estimates, signalling that it does not want a rapid appreciation while trade talks with the United States continue.

Carry runs the other way. Chinese two-year yields of 1.26 per cent are 3.53 points below US yields, so holding renminbi costs money. That limits speculative demand and helps explain why the PBoC can manage the pace.

carry: +3.5pp for USD

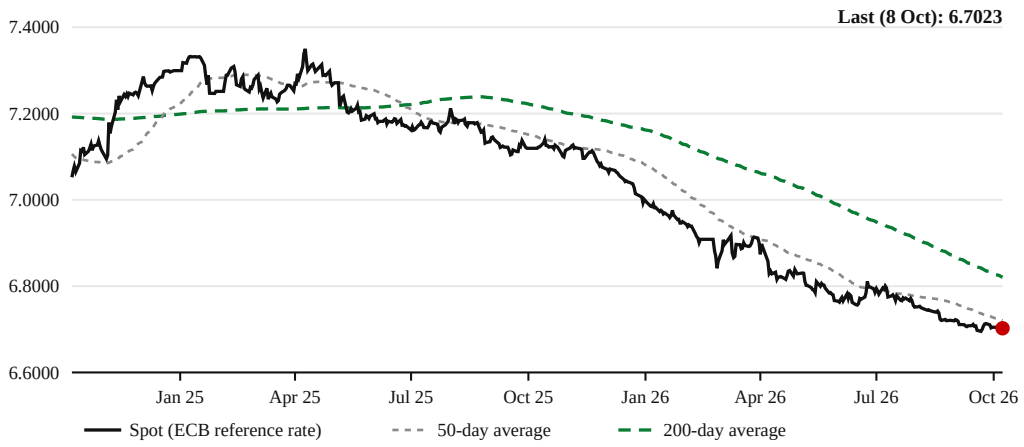
2.0 Price and Trend

The strongest renminbi since 2022

Oct 2025: 7.14

USD/CNY peaked at 7.1400 on 14 October 2025 and has fallen almost without interruption since, reaching 6.6954 on 21 September. The 50-day average (6.7206) is well below the 200-day (6.8204). In the past month, however, the pair has moved sideways (−0.1 per cent), consistent with the central bank's weaker fixings. The z-score is -1.3 and the RSI 37, neither extreme.

Exhibit 1. USD/CNY over two years, with 50-day and 200-day moving averages



steady decline

flat since Sep

Source: ECB euro reference rates, Andra Markets calculations. Moving averages are simple averages of daily fixes.

3.0 Volatility

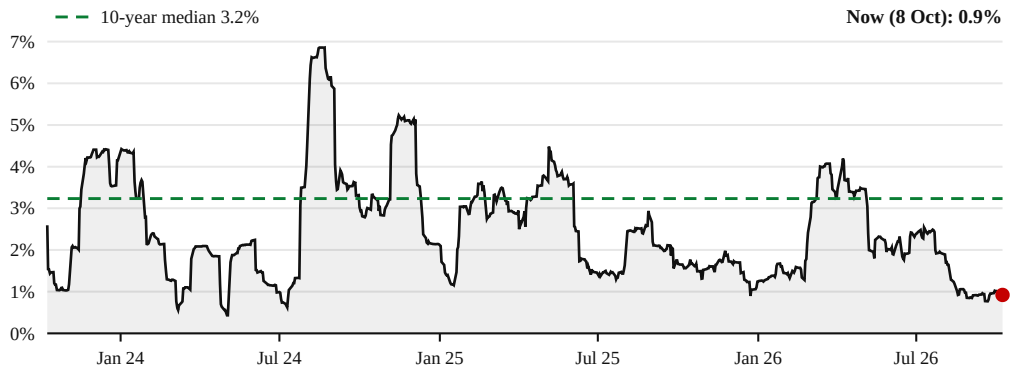
Very low, by design

1m vol 0.9%

One-month realised volatility of 0.9 per cent is in the 2nd percentile of the past ten years and far below the median of 3.2 per cent. One-year volatility is 2.1 per cent. These numbers reflect the management of the currency more than market calm, and they mean that small moves in the renminbi carry a clear policy message.

Exhibit 2. USD/CNY: one-month realised volatility, annualised

managed currency



Source: Andra Markets calculation from ECB reference rates: 21-day standard deviation of daily log returns, annualised with √252. The median is over ten years.

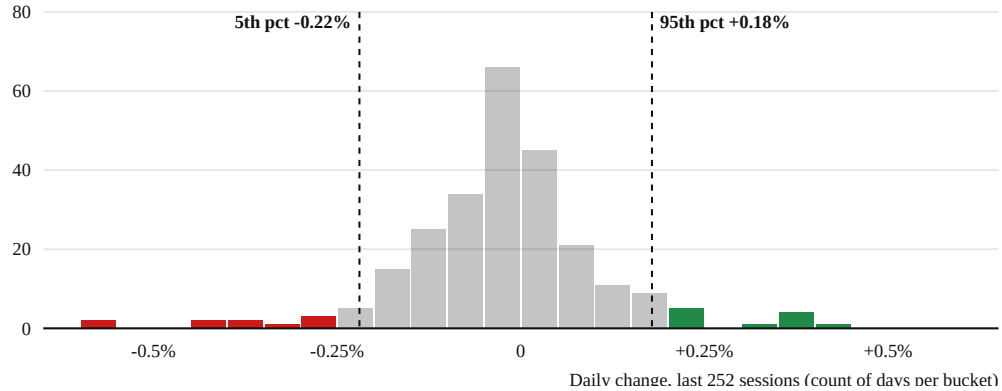
4.0 Distribution of Returns

Small moves, fat tails

kurtosis 3.5: rare jumps

The one-day value at risk at 95 per cent is only -0.22 per cent, but excess kurtosis of 3.5 shows that the rare larger moves are more frequent than a normal distribution would imply. The largest fall of the year was −0.58 per cent on 7 April and the largest rise +0.40 per cent on 13 March. A variance ratio of 0.84 points to some mean reversion from day to day, consistent with the central bank smoothing moves.

Exhibit 3. USD/CNY: distribution of daily changes over the last year



jumps are policy

Source: Andra Markets calculation. Red bars are days beyond the 5th percentile (historical value at risk), green bars beyond the 95th.

5.0 What Moves the Pair

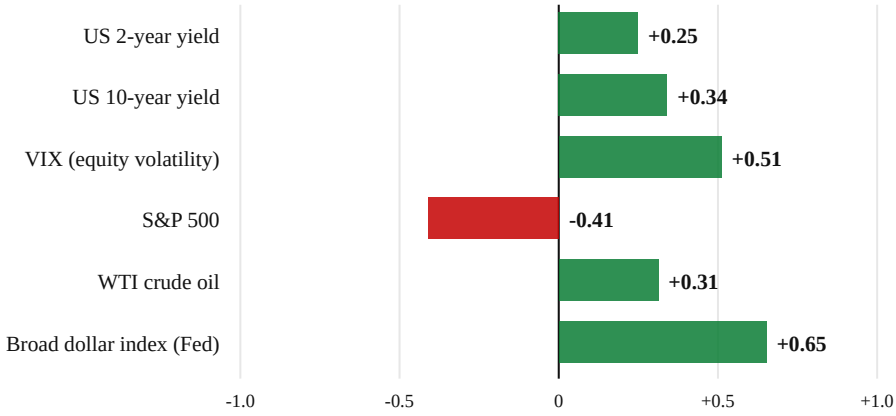
Risk appetite and the dollar

VIX +0.51

Over the past year, weekly changes in USD/CNY have been most closely linked to the VIX (+0.51) and to US equities (−0.41), as well as to the broad dollar (+0.65). In other words, the renminbi weakens when global markets are stressed and strengthens when they are calm. The link with interest rates is weak (+0.25 with the US two-year yield), because capital controls limit the flows that would normally respond to yield gaps.

S&P −0.41

Exhibit 4. USD/CNY: correlation of weekly changes with market drivers, last 52 weeks



rates: weak link

Source: Andra Markets calculation from weekly (Friday) changes; FRED for US yields, VIX, S&P 500, WTI and the Fed broad dollar index. Weekly data avoid the gap between the ECB fixing time and US closing prices.

6.0 Macro and Policy Context

Low rates, low inflation

Xi visit: no deal

China’s economy is growing at 4.3 per cent with inflation of only 0.8 per cent and weak retail sales, so monetary policy remains loose: the five-year loan prime rate is 3.5 per cent and Chinese two-year yields are 1.26 per cent. The appreciation of the renminbi has come amid political pressure on China’s currency, including from the European Union, which argues that it

is undervalued. President Xi's visit to Washington from 23 to 25 September produced no trade breakthrough, and further meetings are expected at the APEC summit in Shenzhen in November.

Exhibit B. USD/CNY macro and policy dashboard

Indicator	United States	China
Policy rates	3.75 to 4.00%	5-year LPR 3.5%
2-year yield	4.79%	1.26%
10-year yield	5.24%	1.70%
Inflation (Aug)	CPI 3.4%	CPI 0.8%
GDP growth	2.2% annualised (Q2)	+4.3% y/y (Q2)
Next data	CPI 14 Oct	Q3 GDP 19 Oct

Sources: Federal Reserve; People's Bank of China and National Bureau of Statistics via Trading Economics; FRED and Trading Economics for yields (8 to 9 October 2026).

gap: 3.5pp

7.0 Positioning and Forecasts

Forecasts: more gradual gains

There is no CFTC positioning data for the renminbi. Forecasts expect the appreciation to continue slowly: MUFG sees 6.65 at the end of the year and 6.50 by the third quarter of 2027, and Goldman Sachs has described the outlook as a sustained but gradual appreciation. Trading Economics' model has 6.69 at the end of the year.

MUFG: 6.65 by Q4

8.0 Quantitative Outlook

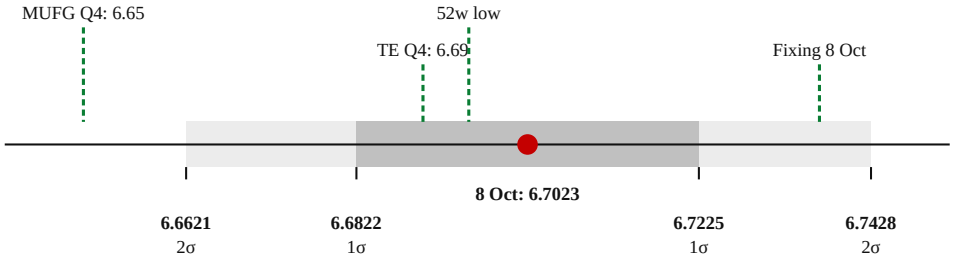
Ranges and signals

1σ: 6.682 to 6.723

The one-month range is very narrow: 6.6822 to 6.7225 at one standard deviation and 6.6621 to 6.7428 at two. The composite score is −2, leaning towards a lower USD/CNY: trend, momentum and seasonality (the pair fell in eight of the last twelve fourth quarters) point to a stronger renminbi, while carry points the other way.

Exhibit 5. USD/CNY: statistical one-month range from current volatility, with published forecasts

fixing above spot



Source: Andra Markets calculation. Bands use three-month realised volatility of 1.0% and assume normally distributed returns: about two-thirds of outcomes fall inside 1σ and 95% inside 2σ. Forecast markers: MUFG (1 October 2026); Trading Economics model; PBoC fixing of 8 October 2026 via investinglive; 21 September 2026 low.

score −2: leans lower

For a managed currency, the quantitative signals describe the policy direction more than market forces. The trend says that the authorities have allowed appreciation this year; the weaker fixings since late September say that they now want to slow it. The statistical range is therefore likely to be respected unless trade talks change the policy stance.

9.0 Risk Considerations and Calendar

What to watch

trade talks = key

The main risk to a stronger renminbi is a breakdown in trade talks with the United States, which could lead the central bank to allow weakness, or a sharp rise in global risk aversion. A trade agreement or a weaker dollar would accelerate the appreciation. Key dates: Chinese third-quarter GDP on 19 October, the FOMC on 28 October and the APEC summit in November.

Watch the daily fixing: it is the clearest signal of where Beijing wants the currency.

19 Oct GDP, Nov APEC

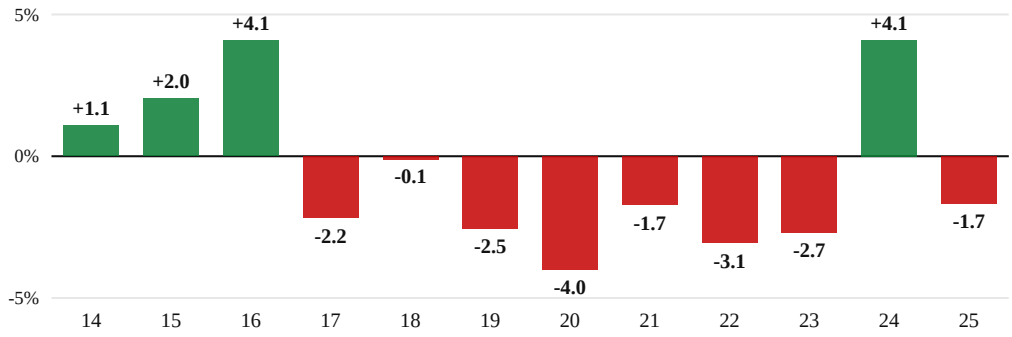
Exhibit C. Quantitative signal scorecard for USD/CNY

Signal	Reading	Implication for the pair
Trend	-0.3% vs 50-day, -1.7% vs 200-day	supports lower
Momentum (12 minus 1 month)	-5.7%	supports lower
Mean reversion	z-score -1.3; RSI 37	neutral
Carry (2-year yield gap)	+3.53 pp in favour of holding the pair	supports higher
Seasonality (Q4, 2014 to 2025)	average -0.5%, up in 4 of 12	supports lower
Composite score	**-2 out of ±5**	**leans lower**

Andra Markets rules: trend is positive if the pair is above both averages and negative if below both; momentum uses a ±1% band; mean reversion flags a z-score beyond ±2 or RSI beyond 30/70; carry uses a ±0.5 point band; seasonality needs at least 8 of 12 years in one direction. Signals are descriptive, not trading advice.

Exhibit 6. USD/CNY: fourth-quarter returns, 2014 to 2025 (%)

down in 8 of 12



Source: Andra Markets calculation from ECB reference rates, 30 September to 31 December of each year.

verdict: managed appreciation, now on a slower path

Methodology and Source Notes

Method. This note applies standard quantitative measures to USD/CNY using ECB euro reference rates, crossed through EUR/USD, to 8 October 2026. Returns are log returns; realised volatility is annualised with 252 trading days; value at risk is historical; correlations use weekly changes. Ranges and signals are statistical descriptions of past behaviour and do not predict future prices. Handwritten notes and highlights are informal commentary by the desk. This note is analysis, not investment advice.

Principal sources. ECB euro reference rates (data to 8 October 2026); FRED; Trading Economics (Chinese yields, rates and data, 8 to 9 October 2026); investinglive (PBoC fixings, 8 October 2026); Express & Star (Xi visit, September 2026); MUFG Research (1 October 2026).

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