Another way to analyze the premium/discount dynamics of different stablecoins such as USDT and USDC is through analysis the "cross currency basis" that exists between these currency pairs quoted gainst a common denominator (such as the USD). In traditional finance, one way to analyze dynamics of a currency pair is through the price differential between spot and forward. Theoritcally, covered interest rate parity stipulates that the spot-fwd basis reflect the interest rate differential between the two currencies, with a higher interest rate of the base currency against quote causing forward prices to trade lower to prevent arbitrages.
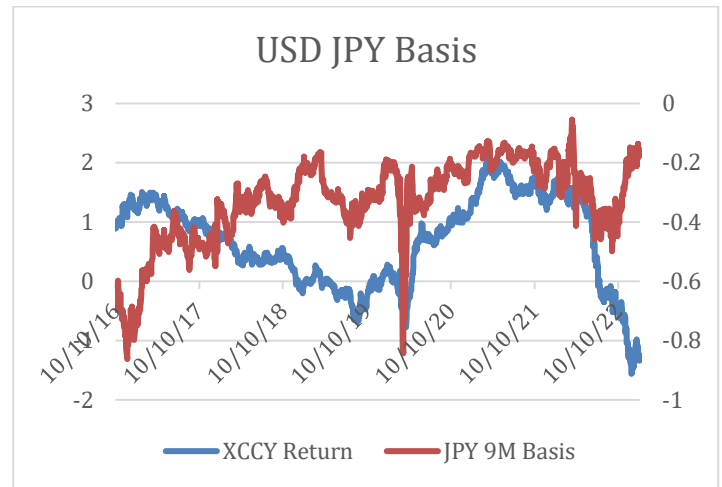
$$(1 + R_b) = (S / F) \cdot (1 + R_f)$$

In actual market situations however, the observed spot-fwd basis fails to align with the formula above, as real-world FX financing supply/ demand dynamics causes the spot-fwd basis to deviate. The cross-currency basis is the additional premium added to the interest rate of the base currency, to reconcile the observed spot-fwd price relation.

$$(1 + R_b) = (S / F) \cdot (1 + R_f + \beta)$$

A. Example of Cross Currency Basis and Macroeconomic Implication – USDJPY

This basis is often a powerful indicator of broad and systematic macroeconomic themes. For instance, the USD/JPY cross currency basis is popular macroeconomic indicator. Due to persistent behaviors by Japanese institutions investing in USD denominated assets, they often hedge FX exposure via FX swaps, long USDJPY spot and short USDJPY Fwds. As a result, due to higher demand to borrow USD in JPY the observed interest rate differential should reflect a much higher **USD funding cost** than what you'd infer from just the cash rate differential. The graph below demonstrates annualized yield return of Japanese institutions engaging in the operation (Borrow USD in JPY and invest in UST) and the basis (funding cost) that they face from 2016-2022. For this USD JPY market, when FX hedged return on investing in USD asset deteriorate sharply, these institutions either cancel their costly hedging operations or divest from US, causing the magnitude of basis to decrease as the elevated structural demand for USD has normalized. **Therefore, drawing analogy from the cross-currency basis in traditional finance to bitcoin pairs may also lead to insights about supply/ demand across different stablecoins.**

USD JPY Basis

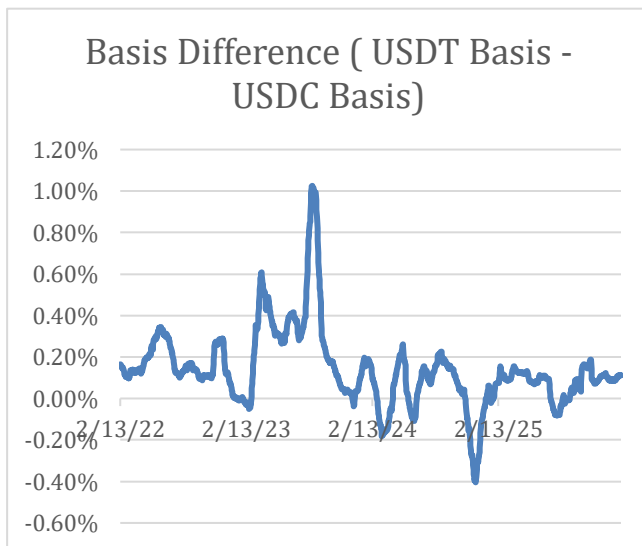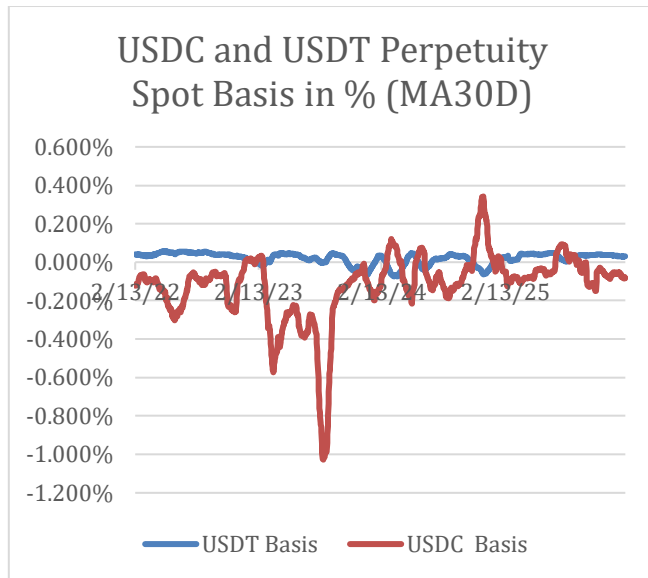### B. Cross Currency Basis in the Cryptocurrency Market

One caveat of analyzing cross currency basis in the cryptocurrency market is the apparent lack of organized market to trade forward/future contracts, aside from BTC/USD. Instead, cryptocurrency offers perpetuity contracts. Perpetual swaps ("perps") are futures-style contracts **without a maturity date**. Because they do not expire (and therefore lack the mechanical spot–forward convergence at settlement), exchanges impose a **funding payment** exchanged between longs and shorts at regular intervals. When the perp trades **above** spot, funding is typically **positive** (longs pay shorts), which discourages long demand and pushes the perp back toward spot; when the perp trades **below** spot, funding is typically **negative** (shorts pay longs), pushing the perp upward. In this sense, the **funding rate** serves as a market-based proxy for the **carry/forward premium** that would otherwise be embedded in a dated forward price: cumulative expected funding over a horizon plays an analogous role to the forward's premium/discount, providing a forward-like measure of financing pressure even in the absence of an organized deliverable forward market. As perpetuities funding are transacted every 8 hours, perpetuity share similar characteristics as a 8 hour forward/future contract.

C. Cross Currency Basis in USDC and USDT

To analyze the currency dynamics in USDC and USDT, we decide to study its cross-currency basis compared to USD. However, because spot and perpetuity in USDC and USDT are mostly quoted against crypto currencies, there is no natural direct method to trade futures/perpetuities in USD/USDC and USD/USDT. One plausible though experiment would to be create USD/USDC and USD/USDT perpetuities synthetically, through combining perpetuities in BTC/USDC (BTC/USDT) with perpetuities in BTC/USD. Theoretically, a USD/USDC or USD/USDT perpetuity can be constructed by combining a long BTC/USDC (or USDT) perpetuity with short BTC/USD perpetuity, creating the theoretically price for USD/USDT and USD/USDC perpetuities, **up to funding, margin/collateral,**

and other contract-specification differences across the two legs.

Next, having synthetically derived USD/USDT and USD/USDC perpetuity prices, we compare them to spot to compute the implied cross-currency basis. We assume USD and USDT (and USDC) share the same interest rate. This is a reasonable benchmark because stablecoins are predominantly backed by USD-denominated assets. Any deviations—e.g., from non-USD reserves such as gold or silver—should still appear as a difference in the computed basis. Under this interpretation, the basis captures not only relative "borrowing" pressure between USD and each stablecoin, but also the stablecoin's USD rate-tracking error, offering a simple way to visualize differences between USDT and USDC.After computing the implied USD/USDC and USD/USDT spot-fwd premium in percentage terms and taking 30 day moving average, here is the results.

USDC and USDT Perpetuity Spot Basis in % (MA30D)

Basis Difference (USDT Basis - USDC Basis)

results show that the interaction term dominates variance in all regimes and becomes especially pronounced during the crisis window.

D.   Interpretation

We define the (30-day MA) forward premium as $\text{basis}_t = F_t/S_t - 1$. Under covered parity, $F/S \approx (1 + r_{\text{USD}})/(1 + r_{\text{stable}})$ up to a basis wedge capturing funding/settlement frictions. Hence a positive basis (forward above spot) indicates relatively tighter USD funding (or a convenience yield for the stablecoin), whereas a negative basis indicates relatively tighter stablecoin funding.

It is shown that forward premium for USD/USDT is often positive, taking interest rate to be constant across USD and USDT, this suggests a higher demand for USD funding or lower convenience yield for USDT spot. On the other hand, USD/USDC spot-fwd basis is negative, suggesting that convenience yield is higher for USDC spot and lower demand for USD funding with USDC.

During major crisis episodes, the basis difference between USDT and USDC widens sharply, with the cross-currency basis for USDC rising above the cross-currency basis for USDT. By contrast, during broad crypto market rallies (e.g., Q4 2024), the basis difference flips, with the "convenience yield" on USDT exceeding that on USDC. Taken together, this suggests that USDC is generally more sought after during periods of stress, while USDT tends to dominate during market rallies.

Finally, the basis difference between USDT and USDC has begun to converge relative to earlier crisis episodes. This convergence suggests that recent and impending stablecoin regulatory developments may be pushing the two stablecoins toward more similar behavior.