Hi, everyone! Thank you for coming to my final presentation today. I am Jienan coming from Trading Desk of Shanghai Branch. So, today I would like to talk about the recent trend of onshore RENMINBI. As Many of our peers and clients are very interested in the arbitrage opportunities on the USDCNY pair due to the CIP deviation. So I think it’s a good idea to have some discussions today. **(Next Page pls)** So today my presentation would consist of three parts. The first one is Xccy Basis Arbitrage, and then Basis Trading and last but not least, the analysis of recent basis trend. **(Next Page pls)** As Basis Arbitrage and Trading are quite common in FX trading. So I will just give a quick introduction of the arbitrage process. **(Next Page pls)**

At the beginning of the arbitrage, the arbitrager first borrows USD in the offshore market by, for example, making an overnight repo and then rolling over the repo till the end of the whole arbitrage period. Let’s assume it as one year. At the same time, in order to fix the funding cost, the arbitrager needs to pay an 1 year SOFR OIS. **(Next Page pls).**

The next step is to sell-buy an 1y USDCNY swap, selling the dollar just borrowed to obtain the CNY. Moreover, if the arbitrager wants to settle the arbitrage profits in USD at the end, it needs to buy an additional 1 year USD forward at the beginning. (**Next Page pls**).

For the last step, here I provide two approaches. So basically, the first approach is the mirror of step1. In step1, the arbitrager makes a USD repo and pays a 1year SOFR OIS. In step3 the arbitrager would make a reverse repo in CNY and receive a 1year CNY IRS to get a fixed lending yield. But also, there is another way which is much simpler. (**Next Page pls**)

The arbitrager can just buy 1-year zero-coupon CGB directly through Bond Connect or CIBM. Similarly, apart from the principal portion, the FX exposure of the arbitrage profits left at the end of the arbitrage can be closed by buying additional amounts of forward USD at the beginning, just as shown in Step2. In this case, we can write down the formula of the arbitrage profit as shown in the slide. The arbitrage profit from lowercase t to Uppercase t can be expressed as basis in the second and third formula. The point I want to emphasize here is that the arbitrage profit doesn’t count on the narrowing or widening of Basis in the future, but the absolute value of Basis at the beginning of the arbitrage. As long as the Basis is not zero, the Arbitrage can be conducted. The only pressure is that the MtM value of the portfolio may temporarily be negative, but it will be able to make a definite return at the end of the period. (**Next Page pls**)

But in practice, the basis arbitrage cannot be conducted by onshore institutions because we don’t have direct access to USD funding for the arbitrage purpose. But still we can bet on the basis narrowing by conducting basis trading. So the first step of basis trading is to sell-buy a long term, like a year, swap. (**Next Page pls**)

The second step is to buy-sell a short-term swap and roll over it till the end of the year with the same notional amount, so that the inflow and outflow of USD in each period can just be completely hedged, while for cash flow of CNY, the difference between the far leg of the old swap and the near leg of the new one just would become the profit and loss during the process of basis trading. **(Next Page pls)**

What’s more, in order to conduct a basis trading, there is still a step that we need to do. That is to hedge the rates risk of both USD and CNY by paying a USD IRS and receiving a CNY IRS. **(Next Page pls)**

Let me just show you the result of cash flow calculation. You can just focus on the third line, the total cash flow in . So basically, as the current basis is negative, so if the Basis narrow in the future, we can gain profits. Otherwise, we may encounter a loss with the Basis widening further. And although the double IRS has largely reduced the rates risk of USD and CNY, the risk exposure of rates cannot be perfectly hedged, as shown in the blue terms. As for the unhedged spot risk, if we ignore the effect of discounting factor and sum the total cash flows for each period, then the last term will be just minus , which is just the opposite of the swap point at the beginning of the period. **(Next Page pls)**

Ok, let’s move to the last section—the Basis Analysis. This plot is the time series of USDCNY xccy basis since 2015. The difference between the blue line and the red one is the selection of CNY real rate. The former one used the 7D Fixing Repo rate while the latter one used the 1 year CGB yield to maturity. You can find that the basis has turned negative since march last year. **(Next Page pls)**.

This plot is the trends of basis in different terms. The plot below zooms up the movement of Basis after it entered the sub-zero range starting in March last year. It can be noticed that since September last year, the 1-year basis has become the lowest one of all terms, lower than both its longer-term and shorter-term basis. Therefore, it is reasonable to assume that this could be caused by the PBoC's intervention in the FX market through 1-year forwards. **(Next Page pls)**.

We can see more evidence by comparing the basis with the spread between CNH and CNY 1 year swap point. We can see from the plot that the two show a high correlation. **(Next Page pls)**.

This chart shows how the 1 year Xccy basis and the Swap point move along with the US/China rates spread. We can find that Basis widening tends to occur when spreads remain high for a long period of time. At the same time, swap points and Basis show consistency in their movements. **(Next Page pls)**.

This chart plots the system of onshore dollar flows based on the current account and the capital and financial account of the balance of payments. The blue boxes on the left indicate the sources of dollar inflows, the pink boxes on the right indicate where dollar outflows go, the red below indicates the foreign exchange flows between commercial banks and the PBoC, and the blue box in the center indicates the pool of dollars available to the banking sector. The white dotted boxes indicate the two data that banks are required to report to SAFE, which records the inflows and outflows of US dollar funds through a rigorous statistical system. **(Next Page pls)**.

So based on the two statistical data by SAFE, the plot below shows the trend of difference between foreign exchange settlement and sales by banks, for customers and for themselves, respectively. The former one has become negative since the second half of last year, accompanied by a rapid decline of the basis and swap point. **(Next Page pls)**.

The last plot is an estimate of Onshore USD net inflow, also based on the two statistical data from SAFE. The estimate formula is a little bit complicated. I won’t extent too much here. But also we can see some correlations between the Xccy basis and the estimate net inflow from the plot. **(Next Page pls)**.