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New benchmarks, same old cross currency basis?

Exploring the transition to new benchmark conventions for cross currency basis swaps

- As debt capital markets transition to new risk-free rate benchmarks, the market for currency hedges must also migrate
- In practice, this means replacing previously forward-looking, term interbank offered rates with backward-looking compounded overnight rates
- We explore the features of these new cross currency basis swaps, with such structures having begun to trade in the market in recent months, and the ARRC having released an updated set of recommendations regarding conventions in the interdealer market
- RFR/RFR cross currency basis markets can trade at a discount or premium to existing cross currency basis markets, adjusting for IBOR/RFR spreads, reflecting the relative cost for the dealer to hedge back to current interdealer market conventions
- Float/float cross currency basis swaps with a SOFR USD leg are likely to induce a structural narrowing pressure on SOFR/FF basis, and given the maturity profile of Yankee FRNs, this is likely to be concentrated inside of 5 years
- Taken in concert with bank issuance related receiving, which will eventually migrate to SOFR, this implies a steepening SOFR/FF term structure

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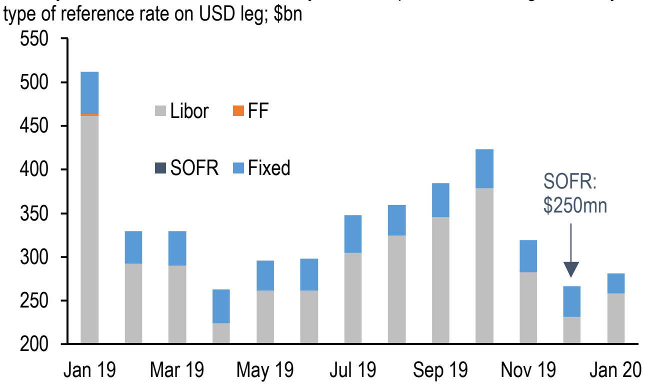
Cross currency basis swaps perform a critical function in the infrastructure of global debt capital markets, providing a means by which issuers of bonds in currencies other than their own can hedge those exposures. This allows issuers to tap a wider investor base, diversify their sources of funding, and potentially reduce their overall funding cost, all without also adding undue currency risk. As global fixed income markets transition towards risk free rate (RFR) benchmarks, and away from interbank offered rates (IBORs), the cross currency basis market, with its US$26tn in notional outstanding, will also need to adapt.

To date, our research on this topic has focused on the implications of benchmark reform for the current stock of cross currency swaps (see *Fallback to the future*, H. St John et al., 6/28/19). **ISDA fallback provisions will apply**, meaning that, post-cessation, floating rate legs referencing 3M Libor will reference 3M daily compounded SOFR plus the fallback spread adjustment. **Likewise, a similar set of fallback provisions will apply to a number of other major benchmarks**. Aside from the obvious difference in credit profiles between an IBOR and RFR, the more important practical difference is replacing forward-looking term rates with overnight benchmarks.

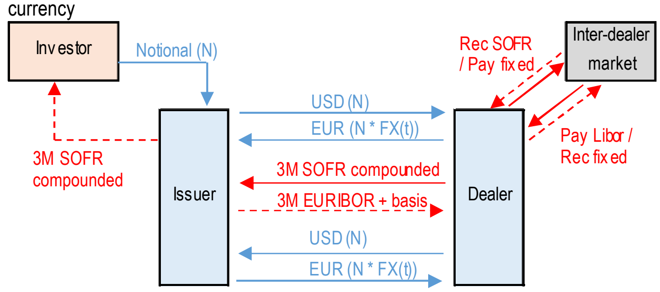
To this end, **the ARRC have today released the recommendations of their subgroup focusing on interdealer cross currency swap market conventions** (see here). For the cross currency basis market, where dealer-client and dealer-dealer trades tend to vary significantly in nature, **clearly setting out market conventions for interdealer swaps is particularly important in helping facilitate the migration to new benchmarks**. Given the significant number of combinations to be considered, including compounding of overnight rates, notional reset frequencies, FX fixing dates, and timing shifts around cashflow dates, **we still think migration to a new interdealer convention will be a gradual process**, and will likely lag other aspects of the benchmark reform process.

Exhibit 1: While some cross currency swaps with non-conventional benchmarks have traded, volumes remain dominated by Libor
Monthly trade volumes in cross currency basis swaps with a USD leg, sorted by type of reference rate on USD leg; $bn



Source: J.P. Morgan, Bloomberg SDR

Exhibit 2: Provided that conventions on the SOFR leg match up, foreign issuers can easily hedge exposures back to their home currency IBOR via SOFR/IBOR cross currency swaps…
Stylized example of non-USD issuer issuing in USD and swapping back to home currency



Issuer: Raises $N in USD, converts to EUR and pays EURIBOR + EURIBOR/SOFR basis
Dealer: Lends EUR, receiving EURIBOR + EURIBOR/SOFR basis and paying Libor - Libor/SOFR basis

Source: J.P. Morgan

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Cross currency swaps with overnight rates

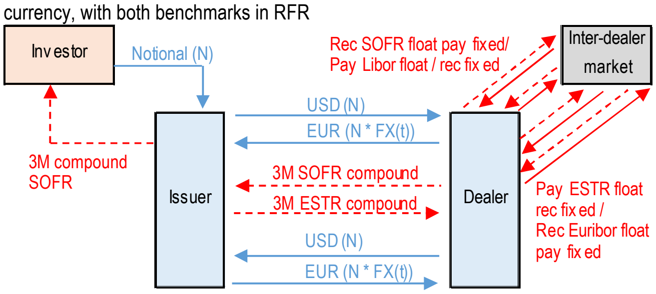
Even with Libor's intended cessation date within two years' time, the vast majority of turnover in the USD cross currency basis market continues to reference Libor (**Exhibit 1**). That said, we would expect the next few months (or longer) to constitute a transitional period during which the market for SOFR-linked floaters continues to grow and deepen, leading to increased DTC trading of cross currency swaps referencing SOFR and other new benchmarks, while the interdealer market continues to focus on IBOR/IBOR structures. Along these lines, we have begun to see a few cross currency trades referencing SOFR, ESTR, SONIA and TONA. Given the likely relatively static structure of the interdealer cross currency basis swap market at present, **a gradual transition is unlikely to severely bifurcate liquidity in the market**, but pricing in new cross currency basis spreads should reflect the implicit cost for dealers to hedge their way back into more traditional types of exposure, which can then be more effectively risk-managed.

There are many possible combinations that can be considered, given float/float, fix/float and fix/fix conventions across both IBOR and RFR benchmarks. However, let us focus on the transitional case of an IBOR/RFR cross currency basis swap, which **could be utilized by a foreign issuer that wishes to raise USD via an FRN, and swap to a floating rate repayment in their home currency**. As the market for SOFR-linked floaters depends, they are more likely to do so with coupons that accrue based on e.g. the daily compounded average of overnight index levels. **They then swap these exposures to quarterly forward-looking IBOR rates in their home currency**. To the extent that benchmark reform in the U.S. outpaces some other jurisdictions, these cashflows could become increasingly common.

From the issuer's perspective, they pay the IBOR rate each quarter plus the IBOR/SOFR cross currency basis. For the dealer, they might wish to get back to an IBOR/IBOR exposure to match off risk. To do this, they would then in turn source Libor/SOFR narrowers in the market, and end up ultimately paying Libor plus Libor/SOFR basis, and received the foreign currency IBOR and the IBOR/SOFR cross currency basis. For simplicity, this is illustrated in **Exhibit 2**.

Exhibit 3: … RFR/RFR cross currency swaps add an extra layer of hedging from the dealer's perspective, assuming a preference for keeping risk in old IBOR/IBOR conventions

Stylized example of non-USD issuer issuing in USD and swapping back to home currency, with both benchmarks in RFR



Issuer: Raises $N in USD, converts to EUR and pays ESTR + ESTR/SOFR basis
Dealer: Lends EUR, PAYS Libor - Libor/SOFR basis and receives EURIBOR + ESTR/SOFR basis + EURIBOR/ESTR basis

Source: J.P. Morgan

Exhibit 4: IBOR/RFR cross currency swaps tend to reflect a clear one-sided premium relative to interdealer market conventions, reflecting their hedging cost to facilitate the trade

Cross currency basis swap trades in the last 12 months utilizing a replacement RFR benchmark

Date	Maturity	Notional (US$mn)	Rate 1	Rate 2	Premium
18-Jan-19	1Y	$ 1,000	JPY TONA	USD FF	-6
8-May-19	5Y	$ 240	GBP SONIA	USD Libor	-6
11-Sep-19	5Y	$ 240	GBP SONIA	USD Libor	3
22-Nov-19	2Y	$ 11	EUR ESTR	USD SOFR	9
27-Nov-19	2Y	$ 13	GBP SONIA	USD SOFR	2
27-Nov-19	2Y	$ 13	GBP SONIA	USD SOFR	2
10-Dec-19	1Y	$ 252	AUD BBSW	USD SOFR	5
7-Jan-20	10Y	$ 170	GBP SONIA	USD FF	1
Average	-	$ 242	-	-	1
Average SOFR	-	$ 72	-	-	4

Note: Premium reflects the difference between the stated cross currency basis level and the market IBOR/IBOR convention, after netting out IBOR-RFR differentials. For example, an ESTR/SOFR basis is compared to a EURIBOR/LIBOR basis, less the LIBOR/SOFR and EURIBOR/ESTR spread differential.
Source: J.P. Morgan, Bloomberg SDR

A variant of this is an RFR/RFR cross currency basis swap. From the issuer's perspective, the only difference here is that their ultimate repayment rate goes from a 3M forward-looking IBOR (and basis) to a 3M compounded non-USD RFR, such as ESTR. **For a dealer looking to shift their cross currency basis risk back to the old IBOR/IBOR convention, this will involve an extra layer of hedging**, both receiving SOFR/Libor and paying ESTR/EURIBOR. So long as the inter-dealer market convention remains unchanged, dealers will have a natural preference for hedging their cross currency basis risk in this manner. As such, levels transacting in the market for this new swap will reflect the anticipated cost of hedging. For IBOR/SOFR cross currency swaps that have traded recently, this has been evidenced, with an average 4bp premium relative to market conventions (**Exhibit 4**).

What about fixed rate issuance? In this case, very little changes. The borrower issues a fixed coupon bond in USD, and then enters a fix/float cross currency basis swap. The issuer ends up paying their desired home currency floating rate benchmark, and the dealer ends up on the other side of the fix/float cross currency trade. **To hedge out this exposure and return to current IBOR/IBOR market conventions, they would then need to receive fixed vs. Libor, a FF/Libor narrower.**

As a side note, RFR/RFR cross currency basis swaps involves somewhat of a conceptual adjustment in terms of how we think about the level of the basis. Current term cross currency basis involves considering the present value of future forward-starting FX/OIS basis levels, as well as relative IBOR/RFR "credit" spreads in respective currencies. RFR/RFR cross currency swaps still involve these FX/OIS considerations, but we swap out the IBOR/RFR spreads for repo/OIS. Generally speaking, cross-market repo/OIS spreads tend to trade a more narrow range, implying a less volatile basis overall. They also have slightly different structural drivers, such as dealer inventories, frictions within the payment system and structural hedging flows.

Gradual migration to new conventions a FF/SOFR narrower at the front end

As the market for RFR/RFR cross currency swaps develops, we would expect to see the premium on these trades dissipate, **as the desire by dealers to hedge dissipates with the transition to new inter-dealer market conventions**. Until that occurs, which we believe could be a year or more, cross currency basis swapping activity using new benchmarks has the potential to exert influence on the FF/SOFR and SOFR/Libor basis. **Ultimately, the flow of float/float cross currency basis swaps on the new benchmark will be the determining factor here**. As Exhibit 2 demonstrates, dealers are left paid SOFR vs. the foreign currency benchmark and basis in these types of swaps, **and shifting exposures back to Libor/IBOR interbank conventions requires receiving SOFR vs. paying Libor, a SOFR/FF basis narrower**. **However, this assumes that Yankee issuance is the dominant driver of new benchmark cross currency basis flow**, and if the currency hedging demand were to be dominated by flows in the other direction, via reverse-Yankee issuance, then dealers would need to enter SOFR/FF wideners.

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Exhibit 5: For SOFR/FF basis, we are predominantly concern with the flow of new float/float cross currency swaps

Dealer positioning and potential hedges under various scenarios, facilitating Yankee issuance swap flow

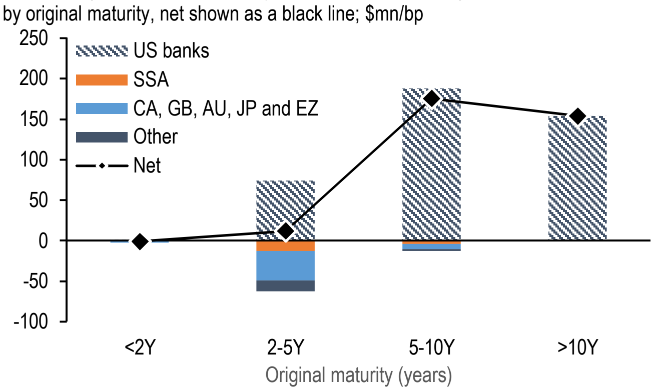
Cross currency convention	Cross currency benchmarks	Dealer (pre-hedge)	Dealer hedge
Float/Float	SOFR/Euribor	Pay SOFR / Rec Euribor + basis	Rec SOFR + basis / Pay Libor
Fix/Float	SOFR/Euribor	Rec fixed / Pay SOFR Pay SOFR / Rec Euibor + basis	Rec Libor / Pay Fixed
Fix/Fix	SOFR/Euribor	Rec fixed / Pay SOFR Pay SOFR / Rec Euibor + basis Rec Euribor / Pay fixed	-

Source: J.P. Morgan

The vast majority of client-facing float/float cross currency basis trades occur at short maturities, hedging FRN issuance in dollars that is being swapped back to a domestic benchmark rate. The Yankee FRN market for financials and SSAs is dominated by the 2-5Y maturity bucket, **suggesting that this is where SOFR/FF narrowing pressure is likely to be most acute**. This should provide an offset to the migration of large domestic bank issuance-related receiving from OIS and Libor into SOFR. Based on the current stock and maturity distribution of Yankee FRNs as compared to domestic banks, this suggests that the migration of cross currency basis hedging activity will exacerbate the steepening of the SOFR/FF basis curve (**Exhibit 6**). Another useful metric here in anticipating the directional flow is the dominance of new issuance of SOFR floaters, relative to equivalent markets in Europe and the UK (**Exhibit 7**). And of course, as we have noted in the past, the conversion of discounting hedges associated with bilateral swaps also impart a steepening bias, particularly at the very long end of the curve (see *Opt-out versus mandatory risk delivery in a Big Bang*, J. Younger et al., 8/16/20).

Exhibit 6: While Yankee FRN issuance is likely to be a pervasive driver of SOFR/FF basis at the front-end, the switch in US bank issuance hedges to SOFR will be influential further out the curve

Outstanding financial USD FRN by non-US issuers and large* US bank term debt by original maturity, net shown as a black line; $mn/bp

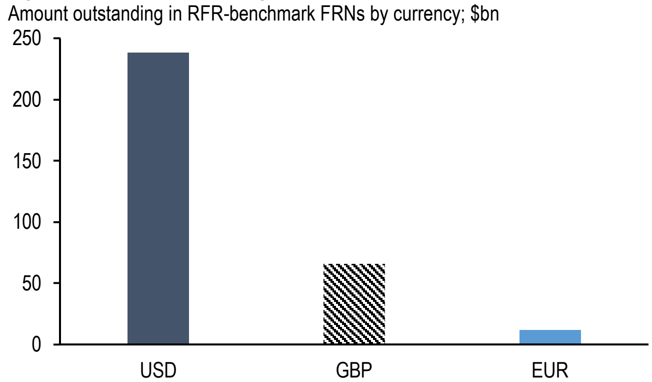


* Includes banks with >$250bn of assets as of Q3 2019, Based on FFIEC data.

Source: J.P. Morgan, Bloomberg, JULI, FFIEC

Exhibit 7: Development of the SOFR FRN market has outpaced equivalent markets in Europe and the UK

Amount outstanding in RFR-benchmark FRNs by currency; $bn



Note: EUR issuance includes both ESTR and EONIA-referencing FRNs, GBP includes only SONIA, and USD includes only SOFR. Includes all issuance, both domestic and foreign.

Source: J.P. Morgan, Bloomberg

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