SHUTTERSTOCK

POWERS OF CONCENTRATION

WEIGHING UP FINANCIAL COSTS AND BENEFITS CAN BE DAUNTING. DOUG WILLIAMSON SHARES A SIMPLE TOOL TO SORT OUT THE NUMBERS

As corporate treasurers, we can often improve interest income by switching temporary cash surpluses between different currencies, using an FX swap. This is an example of cash concentration. Given the obvious benefits, why don't treasurers do that all the time?

FX differences

An FX swap will produce FX differences, and potentially FX losses. These FX losses can wipe out any interest benefits.

Weighing up the costs and benefits can be tricky, but a simple 'With vs Without' technique will keep our thinking clear. We'll apply this technique to a practical case, derived from a recent exam question.

Dollar attractions

TSA, based in Paris, has a temporary cash surplus of EUR 8 million for 180 days. TSA has a US subsidiary, which has a surplus of USD 5 million, also for 180 days. Rates available locally to TSA and to its US subsidiary are set out below.

180-day deposits, per annum:
EUR: 0.05%
USD 5 million: 0.224%
Above USD 10 million: 0.24%
(banded basis)

FX swap rates:
USD/EUR 0.8000
180-day points: 6, deducted

Calculate which of the following is better for TSA:
- Concentrating the euro to the US using the FX swap
- Investing the euro in Paris

Ensure that the US subsidiary is left in the same position as if it had acted independently. Work to the nearest €k (thousand euro).

Certificate in International Cash Management, simplified extract

Trade-off

These interest rates are higher in dollars than in euro. So investing in dollars will clearly provide more interest income.

However, the different exchange rates for swapping currencies, and then swapping back again, work against us. This hits us with an offsetting FX loss.

It's useful to understand this trade-off, but we don't necessarily need to calculate the offsetting items separately.

Keep it simple

A simpler plan is to compare the net cash at maturity under each alternative.

This will show the net benefit, or the net loss, from undertaking the deal. We'll calculate the terminal cash in euros:
- With concentration in dollars using the FX swap, leaving the US subsidiary in the same position as if it had acted independently; and
- Without concentration, investing the euro locally in Paris.

Difference = benefit or loss

The difference between 'With' and 'Without' will be the net benefit, or the net loss.

With	**X**
- (Without)	**(X)**
= Benefit/(loss)	**X/(X)**

With concentration

The concentration in US dollars, with an FX swap, needs four steps:
(1) Swap €8m into dollars.
(2) Interest on the combined dollars deposit.
(3) US subsidiary's independent position.
(4) Swap back the balance of dollars into euro.

With concentration	$k	Steps
€8m swapped	10,000	(1)
+ Subsidiary's own funds	5,000	
= Combined $ deposit	15,000	
+ Interest added	18	(2)
= Maturing deposit	15,018	
(Retained by subsidiary)	(5,006)	(3)
$k to swap back	**10,012**	(4)

(1) Swap €8m into dollars
The near leg exchange rate is USD/EUR 0.8000. We're calculating *to* the base currency USD. So *divide* the variable currency €8,000k by this rate:
8,000k/0.8000
= **$10,000k**

(2) Interest on combined dollar deposit
$15,000k x 0.24% x 180/360
= **$18k**

(3) If US subsidiary had acted independently
Dollar interest income, to the nearest $k:
$5,000k x 0.224% x 180/360
= $6k

Independent cash at end:
$5,000k + $6k
= **$5,006k**

The US subsidiary must be left in the same final position as if it had acted independently. So this amount is retained in the US.

(4) Swap back into euro
Far leg exchange rate, USD/EUR, deducting the 180-day points of 6 (= 0.0006):
0.8000 – 0.0006
= 0.7994

We're calculating *from* the base currency USD. So *multiply* the base currency $10,012k by the far leg rate:
10,012 x 0.7994
= **€8,004k**

This is the cash in euro at maturity, 'With' the FX swap and concentration. Now we need to compare that result against the 'Without' independent alternative.

Without concentration, investing €8m in Paris

Euro interest income without an FX swap, instead investing directly in Paris:
€8,000k x 0.05% x 180/360
= €2k

Cash at end:
8,000 + 2
= **€8,002k**

Net benefit

	€k
With concentration	8,004
Without: independent	(8,002)
Benefit	**2**

TSA is better off by €2k, with the temporary concentration in US dollars. The dollar position of the US subsidiary is identical under both alternatives.

So it's beneficial to undertake the temporary concentration in dollars, on the basis of this comparison.

Other factors

In practice, we need to take account of a number of other important issues, including:
- Administrative time;
- Bank fees and charges;
- Any uncertainty in the cash-flow forecasts in each currency; and
- Counterparty risks.

These may change our decision.

Different rates

If the exchange rates were different, the net benefit of €2k we calculated previously might become greater, smaller or even a net loss. Try recalculating the results with 180-day points of 9 deducted, rather than 6. All other information remains the same.

What's changed?

Steps (1) to (3) are unchanged. The only difference is the re-exchange of dollars into euro, in our final step (4).

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The far leg exchange rate will become:
0.8000 – 0.0009
= 0.7991

The EUR proceeds from swapping back $10,012k are now:
10,012 x 0.7991
= **€8,001k**

Worse off

The overall comparison becomes:

	€k
With concentration	8,001
Without: independent	(8,002)
Loss	**(1)**

Now we're *worse off* with the temporary concentration, by €1k.

How did that happen?

The reason we're worse off is that FX loss has increased. The FX loss now exceeds the interest benefit, by €1k.

With these exchange rates, it would be loss-making to undertake the temporary cash concentration. So we wouldn't do it on the basis of these exchange rates. We should either decline the opportunity, or negotiate for better rates.

Doug Williamson is a treasury and finance coach