



# Arbor Financial Systems

Forwards in Arbor Portfolio Manager (APM)

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# 1.0 Summary

In Arbor Portfolio Manager (APM) three types of FX Forward are possible. This document helps explain the differences and how they function in the system.

The three types are:

- Regular Forwards (FWD)
- Feeder Forwards (FFWD)
- Non Deliverable Forwards (NDFWD)

## 1.1 Regular Forwards

These are forwards for investment or position hedging, they are effectively long term spots where any P&L from FX movement is retained within the fund. In the system they are product type FWD.

## 1.2 Feeder Forwards

These process in a similar way to regular forwards but the P&L from movements in FX rates are not included in the fund P&L. These are used for shareclass FWD's where they are linked to each months non base currency shareclass balance. In the system they are product type FFWD.

## 1.3 Non Deliverable Forwards

These forwards do not operate like a regular forward or spot, in that cash in both currencies are not delivered. Instead at delivery date only the PL (in one currency) is delivered. In the system they are product type NDFWD.

# 2.0 Regular Forwards

A regular forward is booked just like a spot, with a pay and receive currency, trade date and settle (delivery) date. The product ID selected will also be known as the pricing currency and will be the identifier the FWD position is known as within APM.

The quantity is the amount in pricing currency to be delivered/received and will also be the principal amount. The net amount will be the amount delivered in the settlement currency and is derived by principal amount applied to the reported FX rate with any commission / fees then applied.

The trade date is that of the date the FWD is traded, the settle date is the date the underlying currencies in the FWD are delivered.

## 2.1 Position Reporting

On or after trade date, but before settle date a position of type FWD will be reported in the positions of APM. Like other positions some values will move with market data. The following key fields are important for how we process and report Forwards.

Market Value (Base) - This is the difference between the FX used in the FWD compared to now, any movement will be reported.

Market Value (local) - This will always be the quantity of the pricing currency.

P&L (Base) - This is the same as Market Value (Base).

P&L (Local) - This will always be zero as it is the movement in local (pricing) currencies between the trade value and the current days value.

Description - This is the FWD description, important here as often this describes the reason for the FWD position and is per position. This is unlike other product types where the description is taken from Product Master.

Market Exposure (Base) - This is the current value of the pricing quantity against the current FX rate to base currency.

Market Exposure (Local) - This is the pricing currency total (the quantity).

## 2.2 Cash Processing

On trade date cash balances will NOT be updated, instead on settle date both trade date and settle date balances will be updated for both the currencies in the transaction. This is the key difference to a SPOT where the trade date balances for both currencies is updated on trade date.

Despite cash balances not updating until settle date you will still be able to use the Cash Activity and Cash Balances pages to see how your future balances will look as the activity will be added during trade entry.

## 2.3 Forward Processing

Once a FWD position has been created and cash processed as above, the position will remain until delivery. On delivery the system will 'realize' or close out the position automatically. To do this Arbor will automatically (via the batch) create an opposing (hidden) transaction of the opposing side. You will not see this trade (unless you elect to see hidden trades in Trade Query). This transaction will be identical to the main FWD but will be in an opposing direction, with the close flag set and the FX rate being that in the system for the previous day.

The reason for using a different rate is for P&L reporting at both a FWD position and cash position level. It will not effect the processing of cash balances.

It is not possible to part realize a FWD, it is of course possible to have many FWD positions, some of which may be opposing. But each FWD position will close out as described above.

## 2.4 Amending /Cancelling Forwards

Before a FWD is realized in APM, amending a FWD is simple and is performed via Trade Entry. All fields can be amended and subsequent cash, P&L, valuations and transaction reporting will occur as in any other type of product. Cancellations are processed in the same way as other types too.

Once a FWD is realized, due to the contractual nature of the positions, certain restrictions apply.

Should you need to wish to amend the closing (hidden) trade, then only the closing FX rate can be made. This may be required should you need to adjust the closing rate used for PL purposes. If other aspects need to be changed, then the hidden trade must be cancelled first and then rebooked. It is important to only cancel and rebook if you are sure what to do. Failure here will result in an illogic open forward in position reporting that is after settle date.

Should you wish to amend details in the opening (unhidden) trade, this is fine. Once the manual changes have been made APM will automatically amend the closing (hidden) trade, even if these amendments are more detailed than just rate. Additionally should this transaction be cancelled then the automated realising leg will be automatically cancelled too.

## 2.5 Forward Valuation and P&L Calculations

Here is a simple illustration of how we calculate P&L and valuations of a FWD

Assuming:

- The base currency of the fund is EUR.
- The FWD has a Trade date of 1<sup>st</sup> May and Settle /Delivery date of 31<sup>st</sup> May.
- The payment currency is USD of quantity 1,000,000.
- The receive currency is EUR of amount.
- The agreed rate (price) is 0.8 USDEUR.
- The reporting date is 20<sup>th</sup> May with a current rate of 0.9 USDEUR.

We would book a trade in APM that is a PAY of Product ID: USD, where USD is the pricing currency and net amount and EUR is the Settlement currency and the principal amount.

It is possible to book as a Receive EUR instead as logically this is the same, but we recommend the base currency is not used for the product ID, since with multiple FWD positions you would see them all with ID = EUR. The rate entered can be multiply or divide.

The position properties will be:

- Market Value (Local): 1000,000 (the quantity of pricing ccy)
- Market Value (Base): 10,000 (0.9 – 0.8 x 1000000)
- P&L (Base): 10,000
- Market Exposure (Local): 1,000,000 (the USD value)
- Market Exposure (Base): 900,000 (the EUR value against the current FX rate)

If in this example the FX rate was still 0.9 for the market close on 30<sup>th</sup> May (the previous closing business date to the delivery date) then, we would closeout (realize) the forward with the same values reported as above. The closing (hidden) trade would use a price/rate of 0.9.

## 3.0 Feeder Forwards

A feeder forward (FFWD) is processed in exactly the same way as a FWD in APM, for cash, valuations etc. The close out process is the same too. The delivery of cash on maturity will amend the NAV / cash balances in the same way. The important difference is that the P&L from the FFWD, whether open or realized will NOT be included in the performance of the fund. To accommodate this anomaly of the FFWD adjusting the NAV but not the P&L we have an 'Exclude from P&L'

### 3.1 Exclude from P&L

The exclude from P&L value is the profit / loss of the position removed from fund performance. Therefore if the FFWD increased the NAV the P&L is unaffected , likewise, if the FFWD reduces the NAV, the fund performance is not effected.

Here is a simple example of how an open FFWD effects P&L, assume:

- Months starting NAV : 5,000,000
- Current NAV : 6,000,000
- P&L from open FFWD : 400,000 (this is the base value of the FFWD position)

Fund Performance = Current NAV – Previous NAV – Excl from PL

6,000,000 – 5,000,000 – 400,000 = 600,000 or 12%

Once a FFWD has closed out, the forward is no longer reported, but the "Exclude from PL" value still needs to be retained. Therefore on the delivery date of the FFWD you will see an 'Excl from PL' value in Portfolio Summary.

This value will still be used in the fund performance calculation for the selected period. In exactly the same way as a regular forward, when we close out a FFWD we use the rate at the close of the previous business date to determine the P&L of the FWD, this is fed directly to the Exclude from P&L property.

## 3.2 Feeder Spots

Once a FFWD has closed out, it is likely you will be rolling this back to the initial currencies and then entering another FFWD position. Typically this is done around month end for the share class currencies.

As some of these balances can be large, even a small difference between the FFWD close out rate and the spot trade performed to roll back can have an impact on NAV / Performance. Like FFWD's, the P&L from this transaction should not be attributed to fund performance. We have therefore introduced a feeder spot trade type, this is known as an FSPOT in trade entry.

An FSPOT, is very similar to a regular spot trade and moves cash on both trade date and settle date for both currencies. However, it is linked to a realized FFWD position. This linking allows the P&L of the difference between the FFWD close out rate and the FSPOT rate to be determined. This P&L is included in the "Exclude from P&L" value.

## 4.0 Non Deliverable Forwards

Non Deliverable Forwards (NDFWD's) are entered in the same way as a regular forward and use the same methodologies for valuation whilst open and the same P&L logic on realisation too.

However, the cash movement is different. Only profit / loss in the settlement currency is moved at the maturity of the contract. Here, one currency movement occurs.

Therefore unlike the other forwards the projected cash balance is not available. The pricing currency balance does not change at closeout. Therefore when booking the NDFWD make sure the settlement currency is set correctly.