



FTS Trader Version 8: Explanation of the End of Trial Summary Table

Note: Please see the second half of this document for a detailed explanation of the summary for case FX2 prepared by Professor Gonzalo Chavez of Bentley University.

At the end of a trial, a summary window, as below, appears for example in case B02:

| | Final Position | | Initial Cash Position | Interest On Initial Cash Position | Cumulative Payouts Due to Trades | Cumulative Cash From Trading | Cumulative Payouts on Initial Positions |
|--------|----------------------------|--------------------------|---|---|---|---|---|
| Cash | 188,492.39 | | 10,000.00 | 3,270.40 | 163.28 | -177.29 | 175,236.00 |
| | Position At Start of Trial | Position At End of Trial | Cumulative Payouts Due to Trades, Interest Adjusted | Cumulative Cash from Trading, Interest Adjusted | Cumulative Payouts Due to Trades in Base Currency | Cumulative Cash From Trading in Base Currency | Cumulative Payouts on Initial Position in Base Currency |
| Cp Bnd | 100.0000 | 98.0000 | -268.72 | 263.28 | -268.72 | 263.28 | 13,436.00 |
| Zero 1 | 500.0000 | 500.0000 | 0.00 | 0.00 | 0.00 | 0.00 | 63,800.00 |
| Zero 2 | 500.0000 | 502.0000 | 232.00 | -236.21 | 232.00 | -236.21 | 58,000.00 |
| Zero 3 | 400.0000 | 402.0000 | 200.00 | -204.36 | 200.00 | -204.36 | 40,000.00 |

The columns are pretty self explanatory, and let you see at a glance exactly you gained and lost. Since values are carried forward through time, the full reconciliation of gains and losses only is complete at the end of the trial; for example, if you buy a zero coupon bond, you will have a “loss” in the trading account until the face value is received.

In an FTS trading case, you cash account is credited or debited when you trade and when you receive payouts. For example, you earn interest on cash, and a stock pays dividends. At the end of each trial, everything that is traded has a final value, and this value is added to your cash account. Over time, as interest is paid, all values are “grossed up” so that everything is in the same units. If trading is conducted in different currencies, then the exchange rate at the end of the trial serves to convert everything back to the base currency.

The summary distinguishes between payouts received from your initial position and those received due to your trading activity. In the table above, you can see that most of the payout was due to the initial position. The trader made a loss in their trading activity; through the process of buying and selling, they *paid* 177.29 in total. This means that the cash they paid for all buying activity minus the cash they received from all selling activity was -177.29. If you are a buyer, then this number will typically be negative because you pay out cash. The payout the trader received due to the buying/selling activity was 163.28. This is the number to compare to the cash from trading. The calculation of this number is given below. In the table, you can see that the trader paid out more than they received in payouts, so there was a net loss in the overall trading activity.

Example:

You started with \$1000 in cash and 100 shares of a stock. During period 1, you bought 1 share of the stock for \$50. The interest rate is 5%. At the end of the period, the stock paid \$55. The calculations are as follows.

Initial cash = 1000

Interest on initial cash = 50 = $.05 * 1000$

Cumulative payouts due to trades = 55. Why? Because your trading activity resulted in buying one stock. That stock paid 55. So that's the payout you got due to trades. If you had bought 2 stocks and then sold one, this number would be the same; you would have had one stock due to trades, and that stock paid 55.

Cumulative cash from trading: -52.5. Why? You paid \$50 for the stock. But the payout of 55 was received *after* interest was paid on cash. So the \$50 you paid and the \$55 payout are not comparable since you also gave up 5% of \$50 in interest. So at the time the payout is received, the comparable value is the \$50 you paid *plus* $50 * .05 = 2.50$, meaning that the total cost to you was actually 52.50.

Cumulative payouts from Initial Positions: 5500 which is the 100 shares you started with, each of which would have paid 55.

Notice how we keep the initial positions separate from trading activity in this summary, and do not mix accounts; for example, another way to do the accounting is to say: you had \$1000 cash and you paid \$50 for the stock. So you had 950 in cash at the end of the period, which earned 5%, so your interest on cash was \$47.50. If you do multiple trades, then it would be impossible to tell what interest was lost or earned from trading a particular stock. So what we did is take the \$2.50 in interest you did not get and added it to the cost of the stock. This is completely equivalent (since the \$2.50 is the opportunity cost of the \$50), but gives a very clear picture of the gains and losses from trading.

A note on forward contracts: a forward contract is settled after interest is paid (which makes the cost-of-carry model apply). So the forward price is not grossed up by the interest rate.

Case FX2: Expansion of Summary Table Results

By

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A. THE SELLER (Trader 1)

Original positions:

| | |
|--------------------|--------------|
| Cash: | US\$ 200,000 |
| USDZEROs: | 0 |
| AUDZEROs: | 1,539 |
| Forward contracts: | 0 |
| AUD Spot: | AUD 0 |

What happened during the trial:

1. You sold 1,000 forward contracts at a price of 0.80 USD/AUD
2. You sold 1,000 AUD at a spot price of 0.90 USD/AUD
3. The end-of-period spot rate was 0.680.03 USD/AUD

SUMMARY TABLE: TOP SECTION

CASH: Final position CASH is the result of adding all columns along the CASH row.

Initial Cash Position: For this specific example, you had USD 200,000 to begin with. This will be part of your final cash.

Interest on Initial cash Position: Your USD cash earns 5%, thus, the USD 200,000 earned \$10,000 ($200,000 \times 0.05$).

Cumulative Payouts Due to Trades: This is the USD equivalent of all payments made (this includes the transactions required to “pay back” (with interest) any funds lent to you for short selling purposes. This is the result of adding all rows under the column labeled “Cumulative Payouts Due to Trades in Base Currency” under this cell in the bottom portion of the Summary Table.

Cumulative Cash From Trading: This is the USD equivalent of all sale proceeds (interest adjusted). This is the result of adding all rows under the column labeled “Cumulative Cash From Trading in Base Currency” located under this cell in the bottom section of the Summary Table.

Cumulative Payouts on Initial Positions: This is the USD equivalent of all interest payments earned on initial holdings of foreign currency and/or instruments. This number is the sum of all rows under the

column labeled "Cumulative Payouts on Initial Position in Base Currency" located under this cell in the bottom section of the Summary Table.

SUMMARY TABLE: BOTTOM SECTION

Usdzero: No initial positions held and no transactions carried out.

Audzero: You initially had 1,539 Zeros. At the end of the period, you received the principal of 100 AUD per Zero, to total AUD 153,900. The USD equivalent of this amount (using the end-of period spot rate of 0.6803 USD/AUD) is the USD 104,698.17 found in the last column of this row ($153,900 \times 0.6803$).

Fwdaud: You did not have any initial position nor ended up with any position at end of trial. During the trial, however, you did sell 1,000 contracts at a price of 0.80 per contract (1 AUD per contract). Forward contract transactions occur at the end of the period. Since you "borrowed" 1,000 forward contracts in order to short sell them, you will have to ultimately "pay them back" by purchasing the 1,000 AUD at whatever is the end-of-period price. Thus, the Cumulative Payouts column shows the price you had to pay for the 1,000 AUD. This is $1,000 \text{ AUD} \times 0.6803 \text{ USD/AUD} = 680.30 \text{ USD}$ (the negative sign indicates you pay this amount).

The Cumulative Cash from Trading Column shows the proceeds you received from the sale of the 1,000 AUD. These proceeds are received at the end of the period and are equal to $1,000 \text{ AUD} \times 0.80 \text{ USD/AUD} = 800 \text{ USD}$. The positive sign indicates funds received.

Notice that the cumulative payouts and Cash From Trades figures are both repeated for the next columns since both the -680.30 and the 800 are already in USD (our base currency). Though you sold short 1,000 AUD, the system actually charges you marked-to-market USD equivalent of those AUD.

Aud.fx: You did not have an initial position here but you did end up with a final inventory of 152,840 AUD. This is the result of the 153,900 AUD earned from the Zeros minus the 1,060 paid for trades. Your only trade was to short sell 1,000 AUD at 0.90 USD/AUD. The 1060 is explained below.

The Cumulative Payouts Due to Trades column shows that, since you sold short 1,000 AUD, these were lent to you by the system, and thus have to be paid back with interest. So, at the end of the period, you must return the AUD 1000 plus a 6% interest penalty. This results in 1,060 AUD. The negative sign indicates you pay this.

The Cumulative Cash From Trading shows the interest-adjusted proceeds from your spot transaction. Thus, you sold 1,000 AUD at 0.90 USD/AUD to receive 900 USD. Unlike the forward transaction, spot transactions are for immediate payment and delivery, so the 900 USD you received will earn 5% to end at 945 USD ($900 \text{ USD} \times 1.05$).

Cumulative Payout Due to Trades in Base Currency: Unlike the forward contract transaction, the figure in the The Cumulative Payouts Due to Trades cell is in AUD. Thus, the -1,060 is transformed to its USD equivalent using the end-of-period spot rate of 0.6803. The result is -721.12 ($-1,060 \times 0.6803$).

Cumulative Cash From Trading in Case Base Currency: Same as the 945 USD since it was already in USD.

B. THE BUYER (Trader 2):

Original positions:

| | |
|--------------------|-------------|
| Cash: | US\$ 0 |
| USDZEROS: | 1,000 |
| AUDZEROS: | 0 |
| Forward contracts: | 0 |
| AUD Spot: | AUD 308,000 |

What happened during the trial:

1. He/she bought 1,000 forward contracts at a price of 0.80 USD/AUD
2. He/she bought 1,000 AUD at a spot price of 0.90 USD/AUD
3. The end-of-period spot rate was 0.680.03 USD/AUD

SUMMARY TABLE: TOP SECTION

The CASH row on the upper portion has already been explained above, so let's concentrate on the lower portion of Trader 2's Summary Table.

Usdzero: Trader 2 initially had 1,000 USD-denominated zero coupon bonds. At the end of the trial, each bond provides a principal of USD 100 and so USD 100,000 is received and listed in the column labeled Cumulative Payouts on Initial Positions in Base Currency.

Audzero: No initial position and no new trades occurred.

Fwdaud: For Trader2 (the buyer), notice that the cash from trades is negative (he/she bought and so paid). The Cumulative Payout of 680.30 is positive. This is a result of the 1,000 AUD that were purchased being market-to-market at the ending price of 0.6803 USD/AUD. Thus, Trader 2 paid USD 800 (0.80 USD/AUD x 1,000 AUD) for something that was ultimately marked-to-market at USD 680.03. This is a loss for Trader 2.

AudFX. Trader2 started with an initial cash endowment of AUD 308,000, which earned 6% interest. This results in AUD 327,540 (308,000 x 1.06). This is then market to market at 0.6803 and thus appears as USD 221,104.34 under the column labeled "Cumulative Payouts on Initial Positions in Base Currency".

Since trader2 purchased AUD 1,000 in the spot market at 0.90 USD/AUD, he/she has paid USD 900 (AUD 1,000 x 0.90 USD/AUD). The AUD 1,000 are thus immediately received and earn 6% during the year to total AUD 1,060 (AUD 1,000 x 1.06). This amount is placed under the column labeled is cash has an opportunity cost of 5%, so the amount deducted under the column labeled Cumulative Payouts Due to Trades Interest Adjusted. The USD 900 paid is placed as -900 under the column labeled Cumulative Cash

from Trading Interest Adjusted. Notice that these two figures are then transferred to their corresponding places in the next two columns that now express figures in Base Currency (USD) terms. This is why the AUD 1,060 become USD 721.12 when converted to USD at the end-of-period exchange rate of 0.6803 USD/AUD (AUD 1,060 x 0.6803 USD/AUD)

FT Summary at end of Trial: 1 Period: 1 Trading Name: Trader2

File Edit Resize Columns

| | Final Position | | Initial Cash Position | Interest On Initial Cash Position | Cumulative Payouts Due to Trades | Cumulative Cash From Trading | Cumulative Payouts on Initial Positions |
|---------|----------------------------|--------------------------|---|---|---|---|---|
| Cash | 321,759.17 | | 0.00 | 0.00 | 1,401.41 | -1,745.00 | 322,104.34 |
| | Position At Start of Trial | Position At End of Trial | Cumulative Payouts Due to Trades, Interest Adjusted | Cumulative Cash from Trading, Interest Adjusted | Cumulative Payouts Due to Trades in Base Currency | Cumulative Cash From Trading in Base Currency | Cumulative Payouts on Initial Position in Base Currency |
| usdzero | 1,000.0000 | 1,000.0000 | 0.00 | 0.00 | 0.00 | 0.00 | 100,000.00 |
| audzero | 0.0000 | 0.0000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fwdaud | 0.0000 | 0.0000 | 680.30 | -800.00 | 680.30 | -800.00 | 0.00 |
| aud.fx | 38,000.0000 | 27,539.9996 | 1,060.00 | -945.00 | 721.12 | -945.00 | 222,104.34 |



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| | Final Position | | Initial Cash Position | Interest On Initial Cash Position | Cumulative Payouts Due to Trades | Cumulative Cash From Trading | Cumulative Payouts on Initial Positions |
|---------|----------------------------|--------------------------|---|---|---|---|---|
| | Position At Start of Trial | Position At End of Trial | Cumulative Payouts Due to Trades, Interest Adjusted | Cumulative Cash from Trading, Interest Adjusted | Cumulative Payouts Due to Trades in Base Currency | Cumulative Cash From Trading in Base Currency | Cumulative Payouts on Initial Position in Base Currency |
| Cash | 315,041.02 | | 200,000.00 | 10,000.00 | -1,401.41 | 1,745.00 | 104,698.17 |
| usdzero | 0.0000 | 0.0000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| audzero | 1,539.0000 | 1,539.0000 | 0.00 | 0.00 | 0.00 | 0.00 | 104,698.17 |
| Fwdaud | 0.0000 | 0.0000 | -680.30 | 800.00 | -680.30 | 800.00 | 0.00 |
| aud.fx | 0.0000 | 52,840.0000 | -1,060.00 | 945.00 | -721.12 | 945.00 | 0.00 |