Profit/Loss for Open Positions

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This vignette shows how the `vprice` argument of function `pl` can be used.

1 How to use `vprice`

When timestamp is not used

If no timestamp information is used, i.e. if `along.timestamp` is `FALSE`, `vprice` is used to value an open position (or, if you prefer, to simulate the close of an open position). So for a single asset, it should be vector of length one; for *N* assets, it should be a named vector of length *N*.

When timestamp is used

If `along.timestamp` is `TRUE`, `vprice` is used to close the final, open position. So for a single asset, it should be vector of length one; for *N* assets, it should be a named vector of length *N*.

If `along.timestamp` is a vector of timestamps, `vprice` is used to value any open position along those timestamps. For a single asset, it should then be a vector of prices, with length equal to that of `along.timestamp`. For *N* assets, it should be a matrix with `length(along.timestamp)` rows and *N* named columns.

2 Examples

With a single asset.

```
> j <- journal(amount = 1, price = 20)
> pl(j)
```

```
P/L total      NA
average buy    20
average sell  NaN
cum. volume     1

'P/L total' is in units of instrument;
'volume' is sum of /absolute/ amounts.
```

```
> pl(j, vprice = 21)
```

```
P/L total      1
average buy   20
average sell  21
cum. volume    1

'P/L total' is in units of instrument;
'volume' is sum of /absolute/ amounts.
```

```
> j <- journal(amount = c(1, -1),
               price = c(102, 109),
               timestamp = c(2.5, 9))
> pl(j, vprice = 101:110, along.timestamp = 1:10)
```

```
timestamp       1  2  3  4  5  6  7  8  9 10
P/L total       0  0  1  2  3  4  5  6  7  7
__ realised     0  0  0  0  0  0  0  0  7  7
__ unrealised   0  0  1  2  3  4  5  6  0  0
average buy   102
average sell  109
cum. volume     0  0  1  1  1  1  1  1  2  2

'P/L total' is in units of instrument;
'cum. volume' is sum of /absolute/ amounts.
```

With several assets.

```
> j <- journal(amount = c(1, -1, 1),
               instrument = c("A", "A", "B"),
               timestamp = c(1, 2, 1),
               price = c(100, 103, 10))
> P <- cbind(A = c(100, 102, 105),
             B = c( 10,   5,  11))
> pl(j, vprice = P,
     along.timestamp = 1:3)
```

```
A
  timestamp       1  2  3
  P/L total       0  3  3
  __ realised     0  3  3
  __ unrealised   0  0  0
  average buy   100
  average sell  103
  cum. volume     1  2  2

B
  timestamp       1  2  3
  P/L total       0 -5  1
  __ realised     0  0  0
  __ unrealised   0 -5  1
  average buy    10
  average sell  NaN
  cum. volume     1  1  1

'P/L total' is in units of instrument;
'cum. volume' is sum of /absolute/ amounts.
```

```
> pl(j, vprice = P,
     along.timestamp = 1:3, do.sum = TRUE)
```

```
timestamp      1  2  3
P/L total      0 -2  4
__ realised    0  3  3
__ unrealised  0 -5  1
average buy   NA
average sell  NA
cum. volume    2  3  3
```

```
'P/L total' is in units of instrument;
'cum. volume' is sum of /absolute/ amounts.
```