

# 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  NA
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    NA NA  0  0  0  0  0  0  7  7
__ unrealised  NA NA  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;  
'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;  
'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;  
'volume' is sum of /absolute/ amounts.

- R version 3.4.4 (2018-03-15), x86\_64-pc-linux-gnu
- Locale: LC\_CTYPE=en\_US.UTF-8, LC\_NUMERIC=C, LC\_TIME=en\_GB.UTF-8, LC\_COLLATE=C, LC\_MONETARY=en\_GB.UTF-8, LC\_MESSAGES=en\_US.UTF-8, LC\_PAPER=en\_GB.UTF-8, LC\_NAME=C, LC\_ADDRESS=C, LC\_TELEPHONE=C, LC\_MEASUREMENT=en\_GB.UTF-8, LC\_IDENTIFICATION=C
- Running under: Ubuntu 17.10
- Matrix products: default
- BLAS: /usr/lib/x86\_64-linux-gnu/openblas/libblas.so.3
- LAPACK: /usr/lib/x86\_64-linux-gnu/libopenblas-p0.2.20.so
- Base packages: base, datasets, grDevices, graphics, methods, stats, utils
- Other packages: PMwR 0.7-1, zoo 1.7-14
- Loaded via a namespace (and not attached): NMOF 1.4-0, compiler 3.4.4, crayon 1.3.4, datetimetools 0.2-12, fastmatch 1.1-0, grid 3.4.4, lattice 0.20-35, orgutils 0.4-2, parallel 3.4.4, textutils 0.1-8, tools 3.4.4