Calculate returns

FANG return ← FANG time %>% calculate_return(adjusted, period = "daily") %>%

```
# A time tibble: 4,032 \times 6
# Index: date
# Groups: symbol [4]
   symbol date
                      adjusted adjusted_return
                                                  drawdown
                                                              cum ret
                         <dbl>
   <chr>
                                           <dbl>
                                                                <dbl>
          <date>
                                                     <dbl>
1 FB
          2013-01-02
                          28.0
                                        0
                          27.8
2 FB
          2013-01-03
                                       -0.00821
                                                  -0.00821
                                                             -0.00821
3 FB
          2013-01-04
                          28.8
                                        0.0356
                                                              0.0271
                                                   0
4 FB
          2013-01-07
                          29.4
                                        0.0229
                                                              0.0507
5 FB
          2013-01-08
                          29.1
                                       -0.0122
                                                  -0.0122
                                                              0.0379
6 FB
          2013-01-09
                          30.6
                                        0.0526
                                                              0.0925
                                                   0
7 FB
          2013-01-10
                          31.3
                                        0.0232
                                                   0
                                                              0.118
8 FB
          2013-01-11
                          31.7
                                        0.0134
                                                              0.133
  FB
          2013-01-14
                          31.0
                                       -0.0243
                                                  -0.0243
                                                              0.105
10 FB
          2013-01-15
                          30.1
                                       -0.0275
                                                  -0.0511
                                                              0.0750
      with 4,022 more rows
```

```
mutate(drawdown = drawdown(adjusted return),
      cum_ret = cumulative_return(adjusted_return))
```

Calculate returns

```
FANG_return ← FANG_time %>%
 calculate_return(adjusted, period = "daily") %>%
 mutate(drawdown = drawdown(adjusted_return),
        cum_ret = cumulative_return(adjusted_return))
 # A time tibble: 4,032 \times 6
 # Index: date
 # Groups: symbol [4]
    symbol date
                    adjusted adjusted return drawdown
                                                   cum ret
    <chr> <date>
                      <dbl>
                                             <dbl>
                                                      <dbl>
                                    <dbl>
  1 FB
          2013-01-02
                       28.0
                                   0
                                            0
                                                    0
  2 FB 2013-01-03
                       27.8
                                  -0.00821
                                           -0.00821
                                                    -0.00821
                       28.8
  3 FB
          2013-01-04
                                  0.0356
                                            0
                                                   0.0271
          2013-01-07
  4 FB
                       29.4
                                  0.0229
                                                    0.0507
                    29.1
                                           -0.0122 0.0379
  5 FB
       2013-01-08
                                  -0.0122
       2013-01-09 30.6
  6 FB
                                  0.0526
                                                   0.0925
                                            0
  7 FB
       2013-01-10
                       31.3
                                  0.0232
                                                    0.118
                                            0
       2013-01-11
                    31.7
  8 FB
                               0.0134
                                                    0.133
  9 FB 2013-01-14
                       31.0
                                  -0.0243
                                         -0.0243 0.105
          2013-01-15
                                  -0.0275
 10 FB
                       30.1
                                           -0.0511 0.0750
   ... with 4,022 more rows
```

tidyfinance + tibbletime = / III

```
FANG_return_monthly ← FANG_return %>%
 collapse_by("month") %>%
 group_by(symbol, date) %>%
 summarise(monthly_return = total_return(adjusted_return))
           # A time tibble: 192 \times 3
           # Index: date
           # Groups: symbol [?]
             symbol date monthly_return
             <chr> <date>
                                      <dbl>
            1 AMZN 2013-01-31
                                  0.0318
            2 AMZN 2013-02-28
                                   -0.00463
            3 AMZN 2013-03-28 0.00840
            4 AMZN 2013-04-30
                                   -0.0476
            5 AMZN 2013-05-31 0.0606
            6 AMZN 2013-06-28 0.0315
            7 AMZN 2013-07-31 0.0847
            8 AMZN 2013-08-30 -0.0672
            9 AMZN 2013-09-30 0.113
           10 AMZN 2013-10-31
                                    0.164
           # ... with 182 more rows
```