YTM Jan 16

Yuhao Guo

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```r
library(stringr)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v ggplot2 3.4.0      v purrr   1.0.0
## v tibble  3.1.8      v dplyr   1.0.10
## v tidyr   1.2.1      v forcats 0.5.2
## v readr   2.1.3
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```r
library(jrvFinance)
```

```r
data<-read.csv(file = "A1_Bond_data.csv", header = T)
```

```r
data_16 <- data %>%
  select(name, Coupon, days, c_since_days, c_next_days, Jan_16)

data_16<- data_16%>%
  mutate(dirty_price = ((c_since_days/365)*100*Coupon) + Jan_16,
         FV=100 + 0.5*100*Coupon)
```

```r
c_1 = 0.5*data_16$Coupon[1]*100
cash_flow_1 = c(-data_16$dirty_price[1], data_16$FV[1])
payment_time_1 = c(0, data_16$days[1]/365 )
irr(cf = cash_flow_1, cf.t = payment_time_1)
```

```
## [1] 0.04278328
```

```r
t_2 = (data_16$c_next_days[2])/365
c_2 = 0.5*data_16$Coupon[2]*100
cash_flow_2 = c(-data_16$dirty_price[2], c_2, data_16$FV[2])
payment_time_2 = c(0, t_2, data_16$days[2]/365 )
irr(cf = cash_flow_2, cf.t = payment_time_2)
```

```
## [1] 0.04468421
```

```r
t_3 = (data_16$c_next_days[3])/365
c_3 = 0.5*data_16$Coupon[3]*100
cash_flow_3 = c(-data_16$dirty_price[3],c_3,c_3, data_16$FV[3])
payment_time_3 = c(0, t_3, t_3+0.5, data_16$days[3]/365 )
irr(cf = cash_flow_3, cf.t = payment_time_3)
```

```
## [1] 0.04199509
```

```r
t_4 = data_16$c_next_days[4]/365
c_4 = 0.5*data_16$Coupon[4]*100
cash_flow_4 = c(-data_16$dirty_price[4],c_4,c_4,c_4, data_16$FV[4])
payment_time_4 = c(0, t_4,t_4+0.5,t_4+1, data_16$days[4]/365 )
irr(cf = cash_flow_4, cf.t = payment_time_4)
```

[1] 0.03781743

```r
t_5 = data_16$c_next_days[5]/365
c_5 = 0.5*data_16$Coupon[5]*100
cash_flow_5 = c(-data_16$dirty_price[5],c_5, c_5 ,c_5,c_5, data_16$FV[5])
payment_time_5 = c(0, t_5,t_5+0.5,t_5+1,t_5+1.5, data_16$days[5]/365 )
irr(cf=cash_flow_5, cf.t=payment_time_5)
```

[1] 0.03559085

```r
t_6 = data_16$c_next_days[6]/365
c_6 = 0.5*data_16$Coupon[6]*100
cash_flow_6 = c(-data_16$dirty_price[6],c_6, c_6 ,c_6,c_6,c_6, data_16$FV[6])
payment_time_6 = c(0, t_6,t_6+0.5,t_6+1,t_6+1.5, t_6+2, data_16$days[6]/365 )
irr(cf=cash_flow_6, cf.t=payment_time_6)
```

[1] 0.03456081

```r
t_7 = data_16$c_next_days[7]/365
c_7 = 0.5*data_16$Coupon[7]*100
cash_flow_7 = c(-data_16$dirty_price[7],c_7, c_7 ,c_7,c_7,c_7,c_7, data_16$FV[7])
payment_time_7 = c(0, t_7,t_7+0.5, t_7+1, t_7+1.5,t_7+2,t_7+2.5, data_16$days[7]/365 )
irr(cf=cash_flow_7, cf.t=payment_time_7)
```

[1] 0.0330492

```r
t_8 = data_16$c_next_days[8]/365
c_8 = 0.5*data_16$Coupon[8]*100
cash_flow_8 = c(-data_16$dirty_price[8],c_8, c_8 ,c_8,c_8,c_8,c_8,c_8, data_16$FV[8])
payment_time_8 = c(0, t_8,t_8+0.5, t_8+1, t_8+1.5,t_8+2, t_8+2.5,t_8+3, data_16$days[8]/365 )
irr(cf=cash_flow_8, cf.t=payment_time_8)
```

[1] 0.03162842

```r
t_9 = data_16$c_next_days[9]/365
c_9 = 0.5*data_16$Coupon[9]*100
cash_flow_9 = c(-data_16$dirty_price[9],c_9, c_9 ,c_9,c_9,c_9,c_9,c_9,c_9,data_16$FV[9])
payment_time_9 = c(0, t_9,t_9+0.5, t_9+1, t_9+1.5,t_9+2, t_9+2.5,t_9+3,t_9+3.5, data_16$days[9]/365 )
irr(cf=cash_flow_9, cf.t=payment_time_9)
```

[1] 0.03055793

```r
t_10 = data_16$c_next_days[10]/365
c_10 = 0.5*data_16$Coupon[10]*100
cash_flow_10 = c(-data_16$dirty_price[10],c_10, c_10 ,c_10,c_10,c_10,c_10,c_10,c_10, c_10,data_16$FV[10]
payment_time_10 = c(0, t_10,t_10+0.5, t_10+1, t_10+1.5,t_10+2, t_10+2.5,t_10+3,t_10+3.5,t_10+4, data_16$
irr(cf=cash_flow_10, cf.t=payment_time_10)
```

[1] 0.02979757

```r
t_11 = data_16$c_next_days[11]/365
c_11 = 0.5*data_16$Coupon[11]*100
```

```
cash_flow_11 = c(-data_16$dirty_price[11],c_11, c_11 ,c_11,c_11,c_11,c_11,c_11,c_11, c_11, c_11,data_16
payment_time_11 = c(0, t_11,t_11+0.5, t_11+1, t_11+1.5,t_11+2, t_11+2.5,t_11+3,t_11+3.5,t_11+4,t_11+4.5
irr(cf=cash_flow_11, cf.t=payment_time_11)
```

```
## [1] 0.02943044
```