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Importar datos

```
Bono1 <- read_excel("Ex1.BonoPL.xlsx",
                    col_names = FALSE)
```

```
## New names:
## * `` -> ...1
## * `` -> ...2
## * `` -> ...3
## * `` -> ...4
## * `` -> ...5
## * ...
```

```
Bono2 <- read_excel("Ex1.BonoPL.xlsx", sheet = "Bond (2)",
                    col_names = FALSE)
```

```
## New names:
## * `` -> ...1
## * `` -> ...2
## * `` -> ...3
## * `` -> ...4
## * `` -> ...5
## * ...
```

```
Bono3 <- read_excel("Ex1.BonoPL.xlsx", sheet = "Bond (3)",
                    col_names = FALSE)
```

```
## New names:
## * `` -> ...1
## * `` -> ...2
## * `` -> ...3
## * `` -> ...4
## * `` -> ...5
## * ...
```

```
Bono4 <- read_excel("Ex1.BonoPL.xlsx", sheet = "Bond (4)",
                    col_names = FALSE)
```

```
## New names:
## * `` -> ...1
## * `` -> ...2
## * `` -> ...3
## * `` -> ...4
## * `` -> ...5
## * ...
```

#Datos

```r
Datos <- Bono1[c(2)]
Datos <- Datos[c(1:10),]
Datos <- as.data.frame(t(Datos))
colnames(Datos)[1:length(Datos)] <-
  c(
    "ISIN",
    "TICKER",
    "Vencimiento",
    "Cupón(%)",
    "Frequencia cupón",
    "Monto",
    "Subcupon",
    "Liquid (SETT)",
    "Yield de entrada",
    "Precio Compra"
  )
```

#Para bono 2

```r
fecha <- seq(as.Date("2019-03-15"), as.Date("2021-03-01"), "day")
fecha <- fecha[1 < wday(fecha) & wday(fecha) < 7]

interes2_1 <- as.numeric(Bono3$...2[-c(1:15)])
interes2_2 <- (0:(length(interes2_1) - 1))


ShockF_2 <- rep(0, length(interes2_1))
YAS_BOND_YLD_2 <- c(2.458612, rep(0, length(interes2_1) - 1))
for (i in 2:length(YAS_BOND_YLD_2)) {
  YAS_BOND_YLD_2[i] <- YAS_BOND_YLD_2[i - 1] + ShockF_2[i - 1]
}

Gcapital_2 <- rep(0, length(interes2_1))
TOTAL_2 <- rep(0, length(interes2_1))
Retorno_total_2 <- rep(0, length(interes2_1))


fecha_pago <- as.Date("2019-02-28")
j <- as.Date("2019-02-28")
while (j + 180 <= as.Date("2021-02-28")) {
  fecha_pago <-
    c(fecha_pago, ceiling_date(j + 180, unit = "month") - 1)
  j = j + 180
```

```r
}
vectorr <- c()
calculo_precio <-
  function(facial, cupon, tasa, periodos, dias, final) {
    for (i in 1:length(fecha)) {
      if (fecha[i] - fecha_pago[1] >= fecha_pago[2] - fecha_pago[1]) {
        fecha_pago <- fecha_pago[-1]
      }
      if (0 < as.numeric(final - fecha[i])) {
        A <- as.numeric(fecha[i] - fecha_pago[1])
        E <- dias / periodos
        Dsc <- E - A
        tasa_efectiva <- tasa[i] / (periodos * 100)
        N <- length(fecha_pago) - 2
        c <- length(fecha_pago) - c(2:length(fecha_pago))
        cupon_p <- cupon / periodos
        vectorr[i] <- (
          facial * (1 + tasa_efectiva) ^ (-N - Dsc / E) + facial * cupon_p * sum((1 +
                                                              tasa_efectiva) ^ (-
        )
      } else{
        vectorr[i] <- facial
      }
    }

    return(vectorr)
  }
YAS_BOND_PX_2 <-
  calculo_precio(100, 0.025, YAS_BOND_YLD_2, 2, 360, as.Date("2021-02-28"))


for (i in 1:(length(fecha) - 1)) {
  if (interes2_1[i] < interes2_1[i + 1]) {
    interes2_2[i + 1] <- interes2_2[i] + interes2_1[i + 1] - interes2_1[i]
  } else {
    interes2_2[i + 1] <-
      interes2_2[i] + interes2_1[i + 1] - interes2_1[i] + as.numeric(as.character(Datos$Subcupon))
  }#se calcula la columna de INT_ACC

  YAS_BOND_YLD_2[i + 1] <- YAS_BOND_YLD_2[i] - ShockF_2[i]
  Gcapital_2[i + 1] <-
    (YAS_BOND_PX_2[i + 1] - as.numeric(as.character(Datos$`Precio Compra`))) *
    as.numeric(as.character(Datos$Monto)) / 100
  TOTAL_2[i] <- interes2_2[i] + Gcapital_2[i]
  Retorno_total_2[i] <-
    TOTAL_2[i] / as.numeric(as.character(Datos$Monto)) * 100
  if (i == (length(fecha) - 1)) {
    TOTAL_2[i + 1] <- interes2_2[i + 1] + Gcapital_2[i + 1]
    Retorno_total_2[i + 1] <-
      TOTAL_2[i + 1] / as.numeric(as.character(Datos$Monto)) * 100
  }
}
```

```r
bono2 <-
  data.frame(
    "Fecha de evaluación" = fecha,
    "INT_ACC 1" = interes2_1,
    "INT_ACC 2" = interes2_2,
    YAS_BOND_YLD_2,
    ShockF_2,
    YAS_BOND_PX_2,
    Gcapital_2,
    TOTAL_2,
    Retorno_total_2
  )
```

#Bono 3

```r
fecha <- seq(as.Date("2019-03-15"), as.Date("2021-03-01"), "day")
fecha <- fecha[1 < wday(fecha) & wday(fecha) < 7]

interes3_1 <- as.numeric(Bono3$...2[-c(1:15)])
interes3_2 <- (0:(length(interes3_1) - 1))

ShockF_3 <- as.numeric(Bono3$...6[-c(1:15)])
YAS_BOND_YLD_3 <- c(2.458612, rep(0, length(interes2_1) - 1))
for (i in 2:length(YAS_BOND_YLD_3)) {
  YAS_BOND_YLD_3[i] <- YAS_BOND_YLD_3[i - 1] + ShockF_3[i - 1]
}

Gcapital_3 <- rep(0, length(interes3_1))
TOTAL_3 <- rep(0, length(interes3_1))
Retorno_total_3 <- rep(0, length(interes3_1))


fecha_pago <- as.Date("2019-02-28")
j <- as.Date("2019-02-28")
while (j + 180 <= as.Date("2021-02-28")) {
  fecha_pago <- c(fecha_pago, ceiling_date(j + 180, unit = "month") - 1)
  j = j + 180
}
vectorr <- c()
YAS_BOND_PX_3 <-
  calculo_precio(100, 0.025, YAS_BOND_YLD_3, 2, 360, as.Date("2021-02-28"))

for (i in 1:(length(interes3_1) - 1)) {
  if (interes3_1[i] < interes3_1[i + 1]) {
    interes3_2[i + 1] <-
      interes3_2[i] + interes3_1[i + 1] - interes3_1[i]
  } else{
    interes3_2[i + 1] <-
      interes3_2[i] + interes3_1[i + 1] - interes3_1[i] + as.numeric(as.character(Datos$Subcupon))
  }#se calcula la columna de INT_ACC
  Gcapital_3[i + 1] <-
    (YAS_BOND_PX_3[i + 1] - as.numeric(as.character(Datos$`Precio Compra`))) *
    as.numeric(as.character(Datos$Monto)) / 100
```

```r
    TOTAL_3[i] <- interes3_2[i] + Gcapital_3[i]
    Retorno_total_3[i] <-
      TOTAL_3[i] / as.numeric(as.character(Datos$Monto)) * 100
    if (i == (length(fecha) - 1)) {
      TOTAL_3[i + 1] <- interes3_2[i + 1] + Gcapital_3[i + 1]
      Retorno_total_3[i + 1] <-
        TOTAL_3[i + 1] / as.numeric(as.character(Datos$Monto)) * 100
  }
}




bono3 <-
  data.frame(
    "Fecha de evaluación" = fecha,
    "INT_ACC 1" = interes3_1,
    "INT_ACC 2" = interes3_2,
    YAS_BOND_YLD_3,
    ShockF_3,
    YAS_BOND_PX_3,
    Gcapital_3,
    TOTAL_3,
    Retorno_total_3
  )
```

#Bono 4

```r
fecha <- seq(as.Date("2019-03-15"), as.Date("2021-03-01"), "day")
fecha <- fecha[1 < wday(fecha) & wday(fecha) < 7]

interes4_1 <- as.numeric(Bono4$...2[-c(1:15)])
interes4_2 <- (0:(length(interes4_1) - 1))

ShockF_4 <- as.numeric(Bono4$...6[-c(1:15)])
YAS_BOND_YLD_4 <- c(2.458612, rep(0, length(interes2_1) - 1))
for (i in 2:length(YAS_BOND_YLD_4)) {
  YAS_BOND_YLD_4[i] <- YAS_BOND_YLD_4[i - 1] + ShockF_4[i - 1]
}

Gcapital_4 <- rep(0, length(interes4_1))
TOTAL_4 <- rep(0, length(interes4_1))
Retorno_total_4 <- rep(0, length(interes4_1))


fecha_pago <- as.Date("2019-02-28")
j <- as.Date("2019-02-28")
while (j + 180 <= as.Date("2021-02-28")) {
  fecha_pago <- c(fecha_pago, ceiling_date(j + 180, unit = "month") - 1)
  j = j + 180
}
vectorr <- c()
YAS_BOND_PX_4 <-
  calculo_precio(100, 0.025, YAS_BOND_YLD_4, 2, 360, as.Date("2021-02-28"))
```

```r
for (i in 1:(length(interes4_1) - 1)) {
  if (interes4_1[i] < interes4_1[i + 1]) {
    interes4_2[i + 1] <-
      interes4_2[i] + interes4_1[i + 1] - interes4_1[i]
  } else{
    interes4_2[i + 1] <-
      interes4_2[i] + interes4_1[i + 1] - interes4_1[i] + as.numeric(as.character(Datos$Subcupon))
  }#se calcula la columna de INT_ACC
  Gcapital_4[i + 1] <-
    (YAS_BOND_PX_4[i + 1] - as.numeric(as.character(Datos$`Precio Compra`))) *
    as.numeric(as.character(Datos$Monto)) / 100
  TOTAL_4[i] <- interes4_2[i] + Gcapital_4[i]
  Retorno_total_4[i] <-
    TOTAL_4[i] / as.numeric(as.character(Datos$Monto)) * 100
  if (i == (length(fecha) - 1)) {
    TOTAL_4[i + 1] <- interes4_2[i + 1] + Gcapital_4[i + 1]
    Retorno_total_4[i + 1] <-
      TOTAL_4[i + 1] / as.numeric(as.character(Datos$Monto)) * 100
  }
}


bono4 <-
  data.frame(
    "Fecha de evaluación" = fecha,
    "INT_ACC 1" = interes4_1,
    "INT_ACC 2" = interes4_2,
    YAS_BOND_YLD_4,
    ShockF_4,
    YAS_BOND_PX_4,
    Gcapital_4,
    TOTAL_4,
    Retorno_total_4
  )
```