README

20903936

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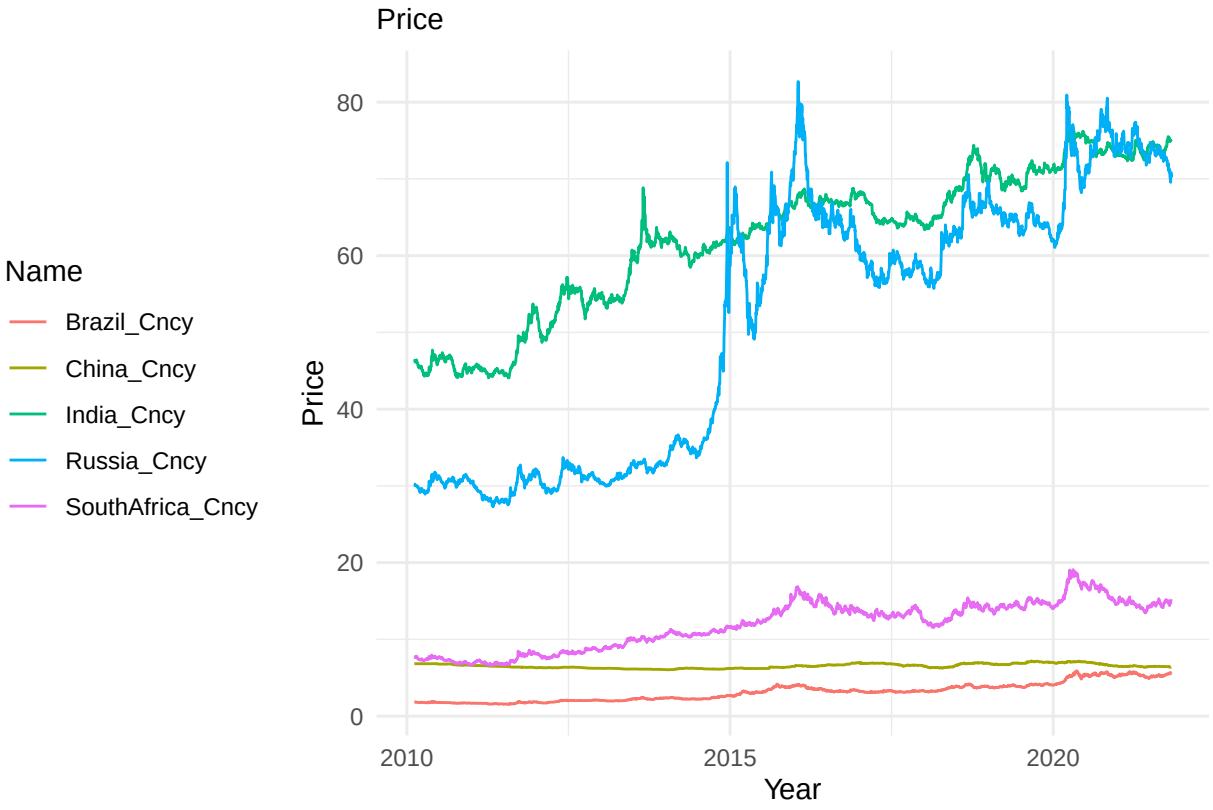
```
#package loading

pacman::p_load("tidyr", "tbl2xts","devtools","lubridate", "readr", "PerformanceAnalytics", "ggplot2", "

cncy <- readRDS("/Users/mathlogonolomashitisho/Desktop/Economics Masters /Semester 2/Fin Metrics/Financ

cncy_Carry <- readRDS("/Users/mathlogonolomashitisho/Desktop/Economics Masters /Semester 2/Fin Metrics/

cncy_value <- readRDS("/Users/mathlogonolomashitisho/Desktop/Economics Masters /Semester 2/Fin Metrics/

cncyIV <- readRDS("/Users/mathlogonolomashitisho/Desktop/Economics Masters /Semester 2/Fin Metrics/Finan

bbdxy <- readRDS("/Users/mathlogonolomashitisho/Desktop/Economics Masters /Semester 2/Fin Metrics/Finan
```

Introduction

This brief report will aim to comment on the following statements using currency data.

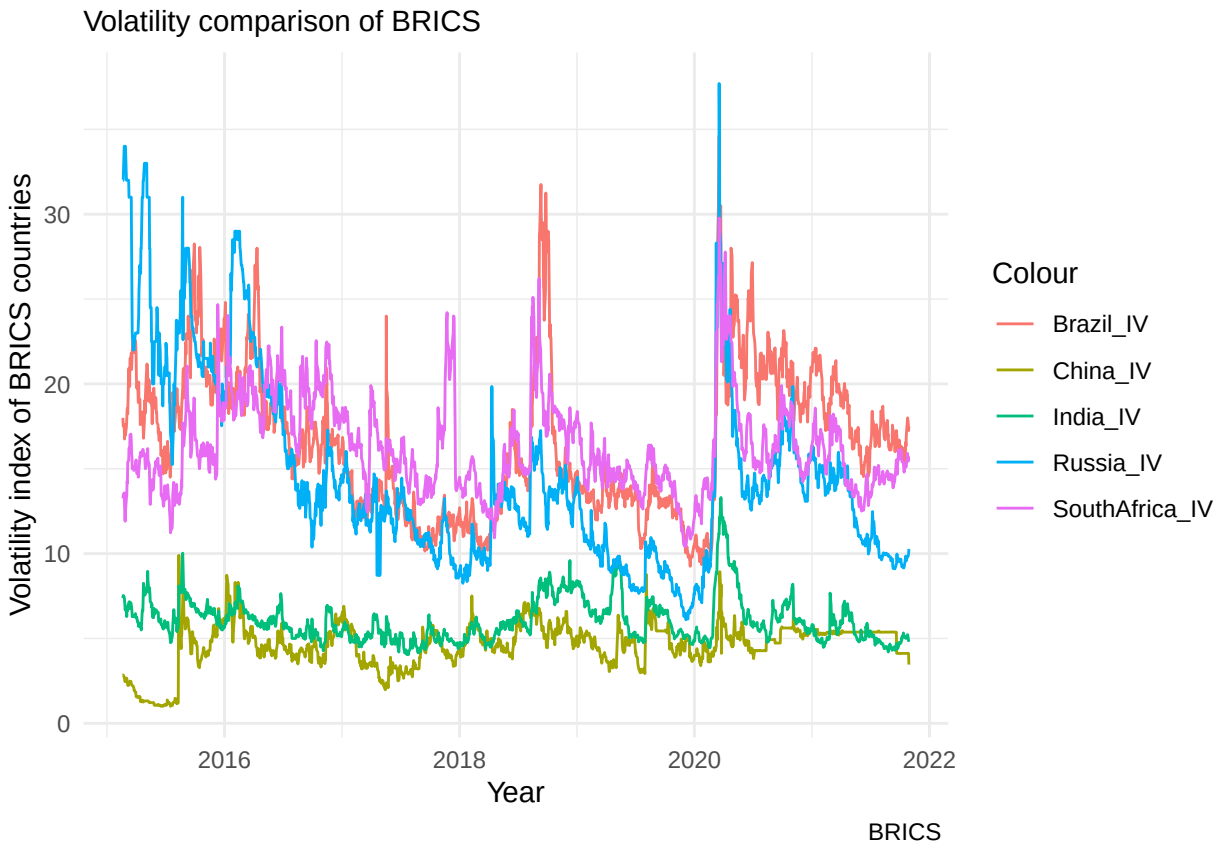
- The South African rand (ZAR) has over the past few years been one of the most volatile currencies;
- The ZAR has generally performed well during periods where G10 currency carry trades have been favourable and these currency valuations relatively cheap. Globally, it has been one of the currencies that most benefit during periods where the Dollar is comparatively strong, indicating a risk-on sentiment.

```
# I used essquisser to make the plots. I had no time left.
cncy %>%
 filter(date >= "2010-02-12" & date <= "2021-10-31") %>%
 filter(Name %in% c("Brazil_Cncy", "Russia_Cncy",
"SouthAfrica_Cncy", "China_Cncy", "India_Cncy")) %>%
 ggplot() +
 aes(x = date, y = Price, colour = Name) +
 geom_line(size = 0.5) +
 labs(x = "Year", y = "Price", subtitle = "Price", caption = "BRICS currency comparison") +
 theme_minimal() +
 theme(legend.position = "left")
```



BRICS currency comparison To compare the South African rand relative to other currencies, I used BRICS countries as a comparison. As can be seen above we can not really see much on the volatility, however we can see that Russia and India were depreciating at an alarming rate.

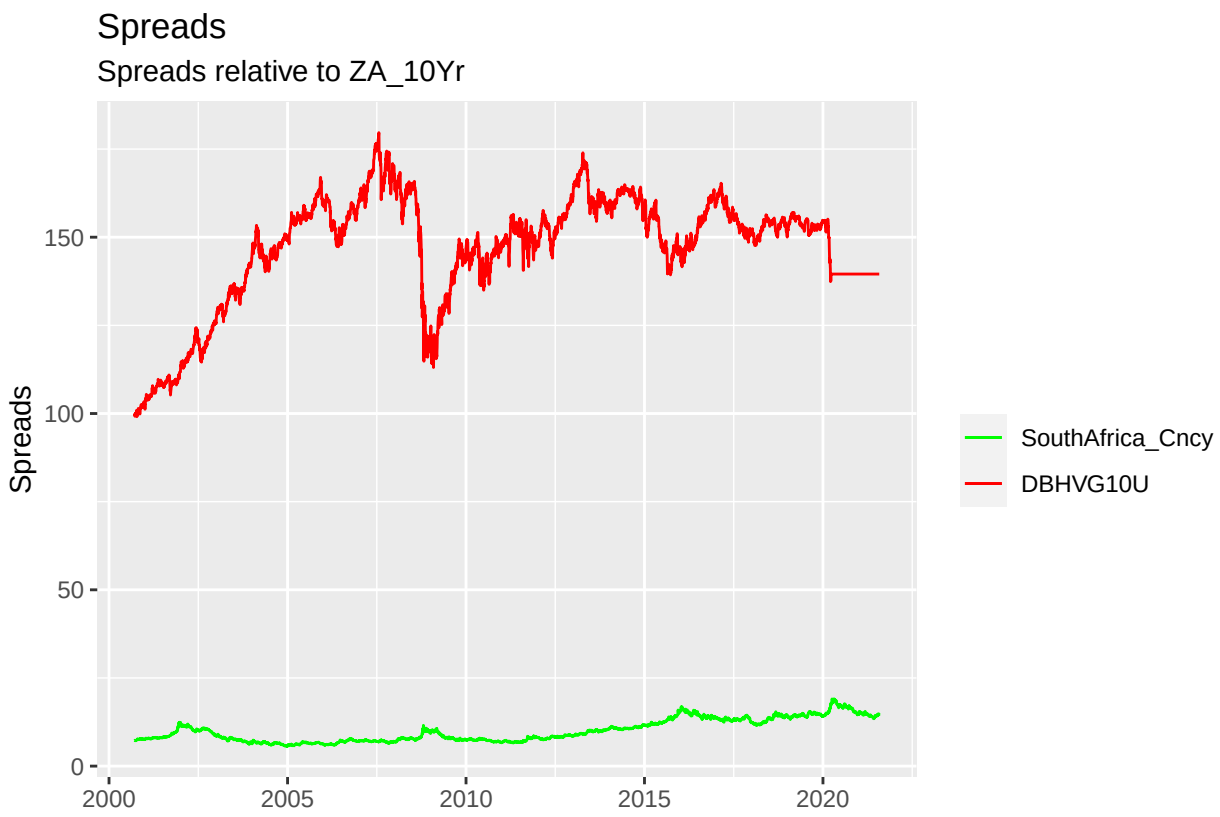
```
cncyIV %>%
 filter(date >= "2015-02-19" & date <= "2021-10-29") %>%
 filter(Name %in% c("Brazil_IV", "China_IV",  "India_IV", "SouthAfrica_IV", "Russia_IV")) %>%
 ggplot() +
 aes(x = date, y = Price, colour = Name) +
 geom_line(size = 0.5) +
 labs(x = "Year", y = "Volatility index of BRICS countries", subtitle = "Volatility comparison of BRICS
 color = "Colour") +
 theme_minimal()
```



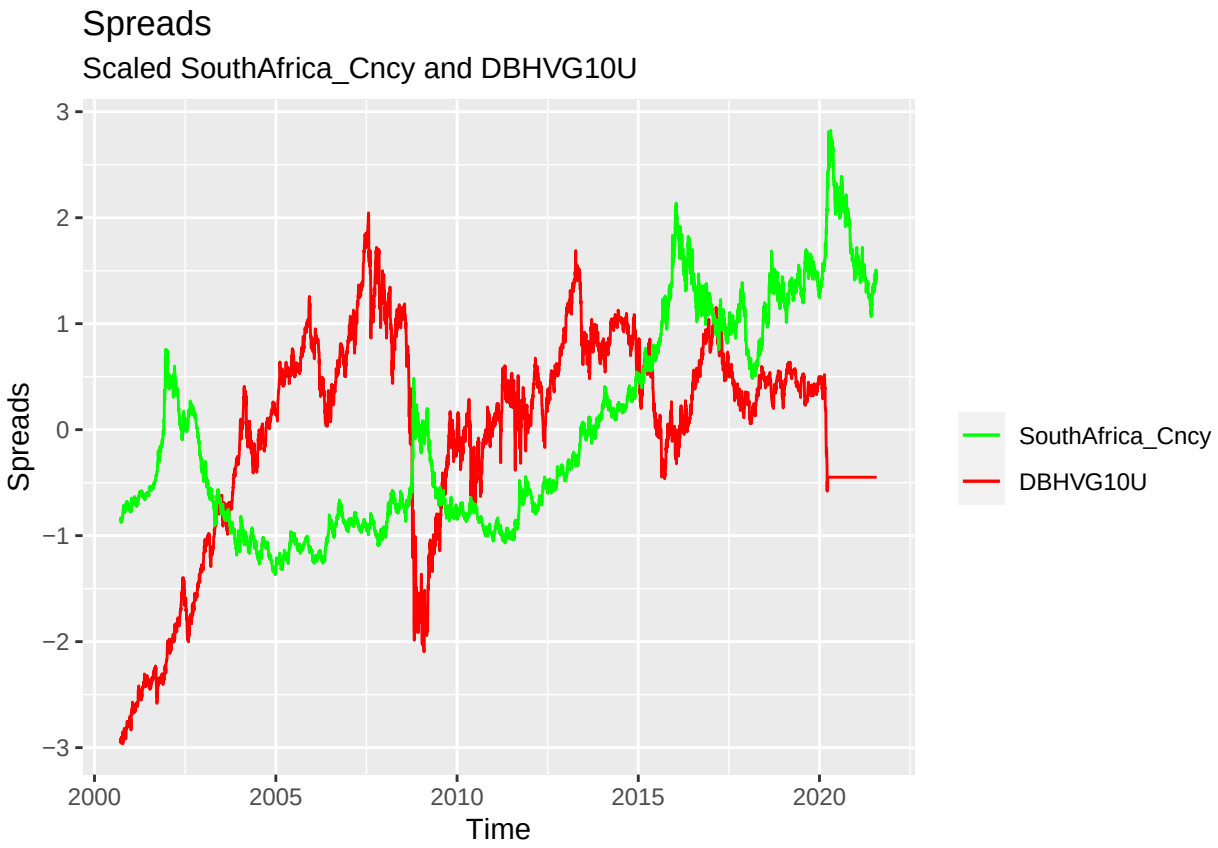
The aove plot shows however that South Africa rand has been quite volatile over the last few years. This is due to various factors. For instance, in recent time Covid 19 has contributed to volatility. Furthermore, the July riots also contributed to recent volatility.

However, volatility prior to 2020 could be attributed to what is now known as the Zuma years. This is when state capture was occuring which add to the volatility in the market.

```
ZAR <- cncy %>%filter(Name == "SouthAfrica_Cncy") %>%select(date,Price)
colnames(ZAR)[2] <- "SouthAfrica_Cncy"
colnames(cncy_Carry)[3] <- "DBHVG10U"

temp <- inner_join(cncy_Carry,ZAR, by="date")



p1 <-
ggplot(data = temp, aes(x = date)) +
  geom_line(aes(y = DBHVG10U, colour = "DBHVG10U")) +
  geom_line(aes(y = SouthAfrica_Cncy, colour = "SouthAfrica_Cncy")) +
  scale_colour_manual("",
                      breaks = c("SouthAfrica_Cncy", "DBHVG10U"),
                      values = c("SouthAfrica_Cncy"="green", "DBHVG10U"="red")) +
  xlab(" ") +
  scale_y_continuous("Spreads") +
  labs(title="Spreads",
       subtitle = "Spreads relative to ZA_10Yr")

p1
```




```
temp <- temp %>% select(-Name)

p2 <-
ggplot(data = temp, aes(x = date)) +
  geom_line(aes(y = scale(DBHVG10U), colour = "DBHVG10U")) +
  geom_line(aes(y = scale(SouthAfrica_Cncy), colour = "SouthAfrica_Cncy")) +
  scale_colour_manual("",
                      breaks = c("SouthAfrica_Cncy", "DBHVG10U"),
                      values = c("SouthAfrica_Cncy"="green", "DBHVG10U"="red")) +
  xlab("Time") +
  scale_y_continuous("Spreads") +
  labs(title="Spreads",
       subtitle = "Scaled SouthAfrica_Cncy and DBHVG10U")

p2
```


Spreads
Scaled SouthAfrica_Cncy and DBHVG10U
Spreads
3
2
1
0
−1
−2
−3
2000
2005
2010
2015
2020
Time
SouthAfrica_Cncy
DBHVG10U

Conclusion