Preliminary Quantitative Data Analysis

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## Descriptive statistics on political stability around the world:

### Political Stability Average and Trend for the Period of 1996-2017

#### Political stability average

The summary statistics of political stability shows that the world has been slightly stable during the period of 1996 to 2016, and the majority of the observations have been been stable:

* mean = 0.02312
* median = 0.15040

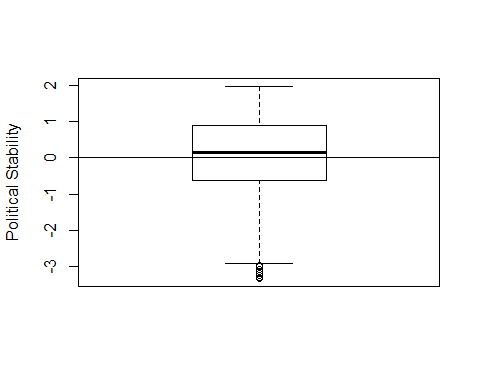
However, whle the maximum value of stability was only 1.9651, the minimum value was -3.3149.

The boxplot and histogram of political stability also demonstrate that the majority of the observations were positive, but there were some extreme values of instability (the histogram is skewed to the left).

# The summary statistics of political stability estimate around the world  
  
summary(WGIdevRegimeType$stability)

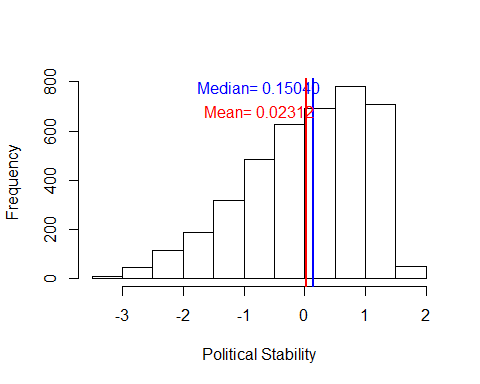
## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## -3.31494 -0.63062 0.15040 0.02312 0.90009 1.96506

boxplot(WGIdevRegimeType$stability, ylab = "Political Stability")  
abline(h = 0, lwd= 1.5)



The Political Stability Average of the World (1996-2016)

hist(WGIdevRegimeType$stability, main = "", xlab = "Political Stability")  
abline(v = median(WGIdevRegimeType$stability, na.rm = TRUE), lwd = 2, col = "blue")  
text(x = -0.75, y = 780, "Median= 0.15040", col = "blue")  
abline(v = mean(WGIdevRegimeType$stability, na.rm = TRUE), lwd = 2, col = "red")  
text(x = -0.75, y = 680, "Mean= 0.02312", col = "red")



Frequency of Political Stability of the World (1996-2016)

#Proportion of stability and instability for the whole world  
  
stabilityProp <- table(WGIdevRegimeType$stabilityDummy)  
stabilityProp

##   
## 0 1   
## 1777 2233

prop.table(stabilityProp)

##   
## 0 1   
## 0.4431421 0.5568579

#### Political stability by categories:

stabilityByCat <- table(WGIdevRegimeType$stabilityCategory)  
stabilityByCat

##   
## Highly Stable Highly Unstable Moderately Stable   
## 758 667 1475   
## Moderately Unstable   
## 1110

prop.table(stabilityByCat)

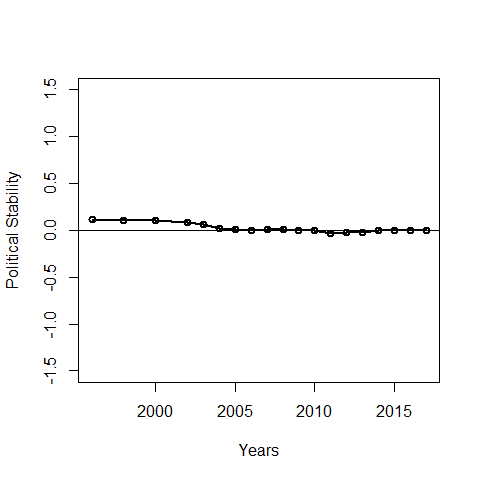
##   
## Highly Stable Highly Unstable Moderately Stable   
## 0.1890274 0.1663342 0.3678304   
## Moderately Unstable   
## 0.2768080

#### Political stability trend

When looking at the trend of political stability around the world for the period of 1996-2016, the table on the annual average of political stability was hovering around zero, although it has slightly delined in recent years.

# generating a table of political stability trend of the world for the period of 1996-2016  
  
stabilityTrend <- WGIdevRegimeType %>%  
 group\_by(date) %>%  
 summarise(stabilityAnnualAverage = mean(stability, na.rm=TRUE))  
stabilityTrend

## # A tibble: 19 x 2  
## date stabilityAnnualAverage  
## <dbl> <dbl>  
## 1 1996 0.112   
## 2 1998 0.102   
## 3 2000 0.102   
## 4 2002 0.0865   
## 5 2003 0.0630   
## 6 2004 0.0250   
## 7 2005 0.0145   
## 8 2006 0.00282   
## 9 2007 0.00618   
## 10 2008 0.0106   
## 11 2009 -0.000173  
## 12 2010 -0.00249   
## 13 2011 -0.0356   
## 14 2012 -0.0230   
## 15 2013 -0.0197   
## 16 2014 -0.000804  
## 17 2015 -0.00145   
## 18 2016 -0.000741  
## 19 2017 -0.00148



Trend of the Political Stability of the World for the Period of 1996-2016

### Political Stability by Region

* Political stability average by region

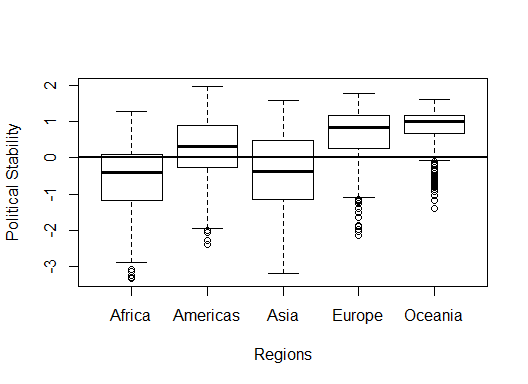
##   
## Africa Americas Asia Europe Oceania  
## 0 713 286 596 144 38  
## 1 311 522 385 692 323

##   
## Africa Americas Asia Europe Oceania  
## 0 0.177805486 0.071321696 0.148628429 0.035910224 0.009476309  
## 1 0.077556110 0.130174564 0.096009975 0.172568579 0.080548628

# generating political stability average for each region of the world for the period of 1996-2016  
  
politicalStabilityByRegion <- summarise(group\_by(WGIdevRegimeType, region),  
 mean=mean(stability, na.rm = TRUE), sd=sd(stability, na.rm = TRUE))  
  
politicalStabilityByRegion

## # A tibble: 5 x 3  
## region mean sd  
## <fct> <dbl> <dbl>  
## 1 Africa -0.550 0.931  
## 2 Americas 0.257 0.745  
## 3 Asia -0.394 1.04   
## 4 Europe 0.650 0.684  
## 5 Oceania 0.809 0.567

# Boxplot of Political Stability by Region  
boxplot(stability~region,data=WGIdevRegimeType, main="",  
 xlab="Regions", ylab="Political Stability")  
abline(h = 0, lwd = 2)



Political Stability of the Different Regions of the World

#### Political stability trends by region

# generating a table of political stability trend of the world for the period of 1996-2016  
  
stabilityTrend <- WGIdevRegimeType %>%  
 group\_by(date) %>%  
 summarise(stabilityAnnualAverage = mean(stability, na.rm=TRUE))  
stabilityTrend

## # A tibble: 19 x 2  
## date stabilityAnnualAverage  
## <dbl> <dbl>  
## 1 1996 0.112   
## 2 1998 0.102   
## 3 2000 0.102   
## 4 2002 0.0865   
## 5 2003 0.0630   
## 6 2004 0.0250   
## 7 2005 0.0145   
## 8 2006 0.00282   
## 9 2007 0.00618   
## 10 2008 0.0106   
## 11 2009 -0.000173  
## 12 2010 -0.00249   
## 13 2011 -0.0356   
## 14 2012 -0.0230   
## 15 2013 -0.0197   
## 16 2014 -0.000804  
## 17 2015 -0.00145   
## 18 2016 -0.000741  
## 19 2017 -0.00148

## # A tibble: 6 x 2  
## date stabilityAnnualAverage  
## <dbl> <dbl>  
## 1 1996 -0.501  
## 2 1998 -0.536  
## 3 2000 -0.504  
## 4 2002 -0.472  
## 5 2003 -0.491  
## 6 2004 -0.468

# plotting the stability trend in Africa  
plot(stabilityTrendAf$date, stabilityTrendAf$stabilityAnnualAverage, type="o", lwd = 2,  
 ylim=range(-1.5, 1.5),  
 main=" ",  
 xlab = "Years", ylab = "Political Stability Estimate")  
abline(h = 0, lwd = 1.5)

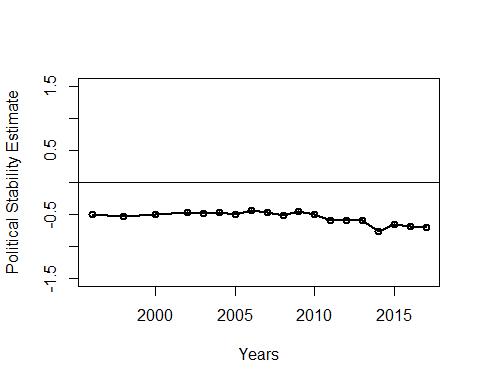


Fig. 1.3 - Trend of the Political Stability in Africa for the Period of 1996-2016

# stability trend for the rest of the world  
restOfWorldDF <- filter(WGIdevRegimeType, region != "Africa")  
stabilityTrendRoW <- restOfWorldDF %>%  
 group\_by(date) %>%   
 summarise(stabilityAnnualAverage = mean(stability, na.rm=TRUE))  
head(stabilityTrendRoW)

## # A tibble: 6 x 2  
## date stabilityAnnualAverage  
## <dbl> <dbl>  
## 1 1996 0.323  
## 2 1998 0.311  
## 3 2000 0.300  
## 4 2002 0.278  
## 5 2003 0.253  
## 6 2004 0.203

# plotting the stability trend for the rest of the world  
plot(stabilityTrendRoW$date, stabilityTrendRoW$stabilityAnnualAverage, type="o", lwd = 2,  
 ylim=range(-1.5, 1.5),  
 main=" ",  
 xlab = "Years", ylab = "Political Stability")  
abline(h = 0, lwd = 1.5)

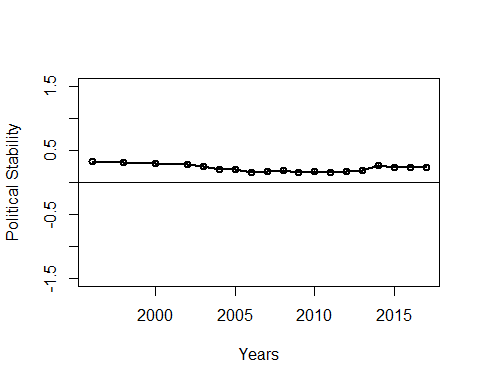
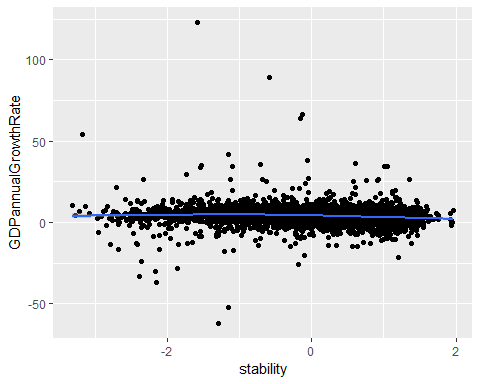


Fig. 1.3 - Trend of the Political Stability for the Rest of the World for the Period of 1996-2016

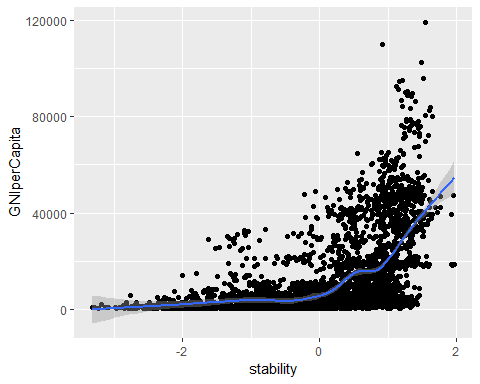
## Why Political Stability Matters: Simple Correlations Between Political Stability and Other Variables

### Political Stability and Economic Performance

# scaterplot of political stability and GDP Annual Growth using ggplot  
  
ggplot(WGIdevRegimeType, aes(x = stability, y = GDPannualGrowthRate)) +  
 geom\_point() +  
 geom\_smooth()



# scaterplot of political stability and GNI per capita using ggplot  
  
ggplot(WGIdevRegimeType, aes(stability, y = GNIperCapita)) +  
 geom\_point() +  
 geom\_smooth()



# scaterplot of political stability and HDI using ggplot  
  
ggplot(WGIdevRegimeType, aes(x = stability, y = HDI)) +  
 geom\_point() +  
 geom\_smooth()

