Emerging Markets

An exploration into five emerging markets. This paper will explore the correlation of FTSE indicies and development metrics such as GDP, GINI and more.

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Introduction

Emerging markets can be great investment opportunity. In order to make good investment decisions and understand the risk and return for any investment you have to analyze historical data.

To measure countries development there are several metrics that can be useful. In this paper we will use GDP, **INSERT 3 MORE METRICS**. –>

In this paper we will explore the correlation between stock market development and different development metrics in order to answer the following questions:

- How correlated are the development metrics and the stock market indicies?
- With the assumption that they are related, what are the reasons for divergences in the data sets?
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In order to answer the questions above this paper will analyze the data by deriving statistical metrics from the original data sets and test correlation between them .

Data sets

There are two data sets acquired for this paper. The first one is downloaded from refinitive/datastream. For more information regarding you can click this link. This will be refereed to as dataset one. The data in the file are time-series spanning from 19. September 2003 to 19. September 2023. The measurements are done with a monthly interval. All data points are represented in US dollar.

The second data set is xxxxxxxxx. <-- get back to this

Project librarys

This project are using a couple of librarys, they are the following:

```
library(tidyverse)
```

```
-- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
v dplyr     1.1.3     v readr     2.1.4
v forcats   1.0.0     v stringr   1.5.0
v ggplot2   3.4.3     v tibble    3.2.1
v lubridate 1.9.3     v tidyr     1.3.0
v purrr     1.0.2
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to beco
```

```
library(readxl)
library(psych)
```

```
Attaching package: 'psych'

The following objects are masked from 'package:ggplot2':

    %+%, alpha
```

NB! We will add any library we add and check it at the end to assure that the project is not missing any dependencies.

Feel free to add commenting on any of these projects.

Data wrangling

We start our project out by downloading data from refinitive. The data is stored as a excel file that has been stored in the project folder. To make it possible to work with in r we start by importing the file.

```
index_emerging_markets <- read_excel("FTSE 20.09.23 - EOH.xlsx", skip = 6)
glimpse(index_emerging_markets)
```

```
Rows: 241
Columns: 7
$ Name      <dttm> 2003-09-19, 2003-10-19, 2003-11-19, 2003-12-19, 2004-01-19,~
$ FTSEWorld <dbl> 146.20, 149.28, 148.79, 156.65, 165.01, 168.36, 163.26, 166.~
$ India     <dbl> 332.50, 400.60, 389.68, 449.46, 495.00, 478.19, 444.15, 487.~
$ Egypt     <dbl> 59.04, 71.91, 68.89, 70.69, 87.99, 83.30, 84.45, 93.11, 86.4~
$ China     <dbl> 672.28, 819.41, 814.37, 955.15, 1032.03, 1077.05, 1044.99, 1~
$ Brazil    <dbl> 150.65, 158.80, 157.38, 184.08, 203.21, 185.48, 191.74, 186.~
$ Taiwan    <dbl> 182.21, 191.67, 183.94, 179.44, 198.31, 213.47, 216.54, 221.~
```

This code tells r to read the excel file in our folder, however skip the first 6 lines as they are not of any use to us. The dataset is now recognized as a tibble with 241 rows and 7 columns. By using glimpse we can see that the type of data is <dttm> (the date of the observation) and the rest are <dbl> (that dates current value).

The data is downloaded in US dollars and the 20 year frame is from 19 september 2003 and 19. September 2023.

From this point we want to normalize the data so we have a fair comparison point with the base of 100. In order to do so we are using the following line:

```r
normalized <- index_emerging_markets |>
  mutate(
    FTSEWorldN = FTSEWorld / (146.2 / 100),
    IndiaN = India / (332.5 / 100),
    EgyptN = Egypt / (59.04 / 100),
    ChinaN = China / (672.28 / 100),
    BrazilN = Brazil / (150.65 / 100),
    TaiwanN = Taiwan / (182.21 / 100),
  )
view(normalized)
```

The code above adds 6 new columns where the data is normalized and starts at 100 on the 19. September 2003.