**Concept CAPM**

Concept: “Our program uses the CAPM (Capital Asset Pricing Model) in order to give our users the ability to make a data based decision on entering the stock market in a specific stock or not”

### Challenges / Conditions:

* Taxes -> current stage: Give all information before taxes
* Currency -> current stage: Use EUR and Euro - zone Market
* Kind of Stock (Growth vs value): How to calculate with with/without dividend
  + Current stage: Only dividends (value) titles and not growth titles
* Risk free interest: Current stage: Program so that the program takes the risk free interest from a website that regularly updates the current market risk free interest
* Expected Market Return: Current Stage: Many different ways to calculate / extract from the internet. Either calculate or extract as risk free interest. Important: Watch that it is in alignment with globally USD figures as in the above

### Ideas (Future capabilities):

* Host a html page on which our information are displayed for users, based on a python page
* Include expectations for the future into the formula (global economic development projections for 1/3/5 years)
* Visual add ons: F.e. mark good results in green, bad in red,..
* Creating Excel sheets as “database” for multiple stocks
* Related benchmarks in Excel for the result of the searcher as added result for the research of the user

### Pseudo Code:

#### # FUNCTION “USER INPUT”: # - Ticker for the company

# - Choose year for GDP growth (real) and Expected Inflation Rate

# FUNCTION RETURN (Stock, YearGDP)

#### # FUNCTION: “GET FROM INTERNET” # Funktion needs (Stock, YearGDP)

# scrape from the net:

# GDP growth (real)

# Expected Inflation Rate, <https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country/euro-area_en>

# Beta for the stock

# dividend for the stock

# German 10 Year Bond Rate (-0,25%)

# Return On Equity (In Percent)

#

# check data is usable type, change type if needed.

#

# FUNCTION RETURN: (GDP Growth, ExpInflRate, Beta, Dividend, GerTenYRate, ROE)

#### # FUNCTION “CALCULATIONS”: # Funktion needs (GDP Growth, ExpInflRate, Beta, Dividend, GerTenYRate, ROE):

# calculate Expected Market Return

# ExpactedMarketReturn = GDP growth (real) + Expected Inflation Rate

#

# calculate Risk Premium for the Investor.

# Risk Premium= ExpMarketReturn - RiskFreeRate = 6,0%

#

# calculate Required Rate Of Return

# RequiredRateOfReturn = RiskPremium x Beta

#

# calculate Percentage Of Retained Earnings

# PercentageOFReteinedEarnings = (EarningsPerShare - Dividend) / EarningsPerShare

#

# calculate Growth Rate

# growthRate = ReturnOnEquity(In Percent) x PercentageOfRetainedEarnings

#

# calculate Value of the Stock  
# Value = dividend / (required rate of return - growth rate)

#

# FUNCTION RETURN: (Value)

#### # FUNCTION “OUTPUT”

# Function needs (Stock, Value)

# Print out nice sentence with value.

### NEXT STEPS:

* create github repository to store all data and code, invite everybody DONE
* begin coding the main functions
* start with extraction function (getting data from internet)