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Final Report

VBA Initiation

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# INTRODUCTION

As a part of the <VBA Initiation> course in MSc Program at EMLyon Business School, this final project were accomplished by three team members (Yiting LIAN, XXX and XXXX). The goal of this project is to create a pricing tool in VBA programming language by implementing the Molodovsky and Fuller model.

This report will begins with the introduction of Molodovsky and Fuller model, which includes its functionality description and formulas.

After that, this report will focus on the technical part. It will explain our programming logic by explaining directly the codes written in this final project. In this part, we also talk about the error handling issues which is obviously necessary for a better user experience.

We will end this report by a conclusion and the bibliography used in this report.

# Description of the model

## Definition

The Molodovsky and Fuller model describe a form of the dividend discount model which divides a company into three phases. A dividend discount model is a calculation of the value of a publicly-traded company's common stock based on the present value of its future dividends. The three-phase DDM assumes that a company's dividend policy is determined by one of three phases: a growth phase, a transition phase, and a maturity phase. The company's goals differ in each phase and its dividend policy changes accordingly. The three-phase DDM attempts to account for this in its calculation.

## Objectives / Interests / Limites

# Description of formulas in English

Since described before, the Molodovsky and Fuller model compute the price of today by a three-phase model. That leads us to define the following variables for our VBA project.

## Input

**D(0)** : Last paid dividend (in money units , $, €, £ etc)

**Gb**: Growth rate at the beginning phase, i.e Phase 1 in the model (in percentages)

**Nb:** Time for the beginning phase (Phase 1) (in years)

**Nd:** Time for the second phase (Phase 2) (in years)

**Gc:** Growth rate at the last phase (Phase 3), which is also the final growth rate (in percentages)

**R:** Discount rate (in percentages)

In our project, we assume that our users could estimate the discount rate R by using the Capital Asset Pricing Model. In this case, we need to take three more variables as the input variables for our program.

**Rf:** Risk free rate (in percentages)

**Rm:** Return of the market portfolio (in percentages)

**Beta**

## Output

**M:** the dividend multiplier

**P:** the calculated price (in money units , $, €, £ etc)

**R:** Discount rate (in percentages). Obliviously, it’s an output variables if the user tried to calculate this variables via Capital Asset Pricing Model

# Description of mathematical formulas

# Bibliography

<http://financial-dictionary.thefreedictionary.com/3-Phase+Dividend+Discount+Model>

<Programming the three-phase dividend discount model> by Russell J. Fuller