

4 fixed growth rates

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Abstract

In this paper, I describe 4 fixed growth rates in increasing order.
The paper ends with "The End"

Introduction

A **fixed growth rate** is a non-trivial growth rate that satisfies a transcendental equation and thus is a fixed point in the growth rate space.
In this paper, I describe 4 fixed growth rates in increasing order.

The low growth rate

For $P \neq 0$, the low growth rate $g_l \neq 0$ satisfies

$$P(1 + g_l) = P(1 + \exp(g_l))^{g_l}$$

$$\text{i.e., } g_l = 0.321848\dots$$

The medium-low growth rate

For $P \neq 0$, the medium-low growth rate $g_{ml} \neq 0$ satisfies

$$P(1 + g_{ml}) = P(\exp(g_{ml}))^{g_{ml}}$$

$$\text{i.e., } g_{ml} = 0.746881\dots$$

The medium-high growth rate

For $P \neq 0$, the medium-high growth rate $g_{mh} \neq 0$ satisfies

$$P(1 + g_{mh}) = P(1 + \log(g_{mh}))^{g_{mh}}$$

$$\text{i.e., } g_{mh} = 2.057477\dots$$

The high growth rate

For $P \neq 0$, the medium-high growth rate $g_h \neq 0$ satisfies

$$P(1 + g_h) = P(\log(g_h))^{g_h}$$

$$\text{i.e., } g_h = 4.350779\dots$$

The End