Inflation when the inflation risk premium is zero at all points in time

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Abstract

In this paper, I describe inflation when the inflation risk premium is zero at all points in time. The paper ends with "The End"

Introduction

In a previous paper, I've described how the inflation risk premium can be zero at all points in time. A natural question that arises now is "What is inflation in this scenario?" In this paper, I describe inflation when the inflation risk premium is zero at all points in time.

Inflation when the inflation risk premium is zero at all points in time

Suppose

$$i(t) = \begin{cases} \lambda e^{-\lambda t} & t \geq 0 \\ 0 & t < 0 \end{cases}$$

Then

$$E[i(t)] = \frac{1}{\lambda} = e^{-Ft} \begin{cases} Ft - e^{Ft}(e^{-Ft}Ft - \frac{e^{-\frac{(t-\mu)^2}{2\sigma^2}}}{\sqrt{2\pi}\sigma}) & t \leq 0 \\ Ft - e^{Ft}(e^{-Ft}Ft + \frac{2e^{-\frac{t^2\theta^2}{\pi}}\theta}{\pi} - \frac{e^{-\frac{(t-\mu)^2}{2\sigma^2}}}{\sqrt{2\pi}\sigma}) & t > 0 \end{cases}$$

$$\iff$$

$$\lambda = \begin{cases} e^{\frac{(t-\mu)^2}{2\sigma^2}}\sqrt{2\pi}\sigma & t \leq 0 \\ \frac{1}{\frac{e^{-\frac{(t-\mu)^2}{2\sigma^2}}}{\sqrt{2\pi}\sigma} - \frac{2e^{-\frac{t^2\theta^2}{\pi}}\theta}{\pi}} & t > 0 \end{cases}$$

The End