Multi-Factor Commodity Price Process: Spot and Forward Price Simulation

Jake C. Fowler

January 2020

1 Introduction

This document describes a very general multi-factor price process, which is suitable use in simulating the spot and forward prices of a a commodity under the risk-neutral probability measure.

$$\frac{dF(t,T)}{F(t,T)} = \sum_{i=1}^{n} \sigma_i(T) e^{-\alpha_i (T-t)} dz_i(t) \tag{1}$$

Where $F(t,T)$ is the forward price for delivery at time T observed at time t.

$$F(t,T) = \tag{2}$$

2 Appendices

2.1 Appendix I - Integration of Forward Price SDE

This appendix gives the detailed step for integrated the forward price process SDE, hence getting from 1 to 2.