A semiparametric analysis of the term structure of the US interest rates

Fabrizio Iacone*
Department of Economics and Related Studies
University of York
Heslington
York
YO10 5DD

March 7, 2008

Abstract

The short end of the US$ term structure of interest rates is analysed allowing for the possibility of fractional integration and cointegration. This permits to simultaneously maintain mean-reverting dynamics for the data, and the existence of a common long run stochastic trend.

We estimate the model for the period 1963-2006, and find it compatible with this structure. The restriction that the data are $I(1)$ and the errors are $I(0)$ is rejected, mainly because the latter still display long memory.

This is consistent with a model of monetary policy in which the central bank operates affecting contracts with short term maturity, and the impulses are transmitted to contracts with longer maturities and then to the final goals. However, the transmission of the impulses along the term structure cannot be modelled using the Expectations Hypothesis.

Keywords: fractional cointegration; term structure.

JEL classification: C22, E43.

*Financial support from the Economic and Social Research Council through grant R000239936, from the Ente per gli Studi Luigi Einaudi and from the Dennis Sargan Memorial Fund is gratefully acknowledged. I thank Peter M. Robinson, Javier Hualde, Valentina Corradi, Roderick McCrorie, the Editor and two anonymous Referees for their helpful suggestions.