

# CHAPTER 1

## INTRODUCTION

In 1907, Irving Fisher proposed a consumption-based theory of interest rates. Fisher suggested that, in equilibrium, the one year interest rate would reflect the marginal value of income today relative to the marginal value of income next year. The intuition is straight-forward. If a recession is expected next year, then there is an incentive to sacrifice today to buy a one year bond that pays off in the bad times. The demand for the bond will bid up the price and lower the yield. The theory implies that there is information in current real interest rates about expected economic growth.

This paper tests whether there is information in the term structure of interest rates that is relevant for forecasting economic growth. The consumption-based asset pricing framework refined by Rubinstein (1974, 1976), Breeden and Litzenberger (1978) and Lucas (1978) provides a set of first-order conditions that relate marginal rates of substitution to asset returns. The first-order conditions are manipulated to express the expected marginal rates of substitution as functions of real interest rates of various maturities. With a convenient utility specification, real interest rates can be linked to expected real aggregate consumption growth.

Two types of interest rate variables are studied. The first is the real rate of interest for various maturities. This measure is linked to consumption growth rates over the same maturity. Second, the spread between annualized real rates – a

common measure of the term structure – is also examined. This variable is linked to one-step ahead growth in consumption. The empirical analysis documents the time series behavior of these interest rate variables. While the real interest rates do not appear to be strong predictors of real consumption growth, the yield spread variable has some predictive power – especially over the final 20 years of the sample. The variable out-performs lagged consumption and real stock returns in predicting economic growth within-sample and out-of-sample. Some evidence is also presented that suggests that the spread specification forecasts have more information than the forecasts of the commercial macroeconomic models.

The paper is organized as follows. Chapter 2 presents the framework whereby expectations of consumption growth can be recovered. Chapter 3 documents the data sources. The empirical tests are presented in chapter 4. Chapter 5 offers some concluding remarks.