The Yield Curve as a Predictor of U.S. Recessions

Forecasting Recessions It is often suggested that the slope of the term structure of interest rates contains information about the expected future path of inflation. Mishkin (1990) has recently shown that the spread between the 12-month and 3-month interest rates helps to predict the difference between the 12-month and 3-month inflation rates. His approach however, lacks a theoretical foundation, other than the (rejected) hypothesis that the real interest rate is constant. This paper applies a simple existing theoretical framework, which allows the real interest rate to vary in the short run but converge to a constant in the long run, to the problem of predicting the inflation spread. It is shown that the appropriate indicator of expected inflation can make use of the entire length of the yield curve, in particular by estimating the steepness of a specific nonlinear transformation of the curve, rather than being restricted to a spread between two points. The resulting indicator, besides having a firmer theoretical foundation does a relatively good job of predicting the inflation rate over the period 1960 to 1988.

Banking and Finance This book discusses wide topics related to current issues in economic growth and development, international trade, macroeconomic and financial stability, inflation, monetary policy, banking, productivity, agriculture and food security. It is a collection of seventeen research papers selected based on their quality in terms of contemporary topic, newness in the methodology, and themes. All selected papers have followed an empirical approach to address research issues, and are segregated in five parts. Part one covers papers related to fiscal and price stability, monetary policy and economic growth. The second part contains works related to financial integration, capital market volatility and macroeconomic stability. Third part deals with issues related to international trade and economic growth. Part four covers topics related to productivity and firm performance. The final part discusses issues related to agriculture and food security. The book would be of interest to researchers, academicians as a ready reference on current issues in economics and finance.

The Yield Curve The book analyzes how modern portfolio theory and dynamic term structure models can be applied to government bond portfolio optimization problems. The author studies the necessary adjustments, examines the models with regard to the plausibility of their results and compares the outcomes to portfolio selection techniques used by practitioners. Both single-period and continuous-time bond portfolio optimization problems are considered.

Interest Rate Modeling and a Time Series Model for Functional Data This work has been selected by scholars as being culturally important, and is part of the knowledge base of civilization as we know it. This work was
reproduced from the original artifact, and remains as true to the original work as possible. Therefore, you will see the original copyright references, library stamps (as most of these works have been housed in our most important libraries around the world), and other notations in the work. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. As a reproduction of a historical artifact, this work may contain missing or blurred pages, poor pictures, errant marks, etc. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.

Finance and Economics Discussion Series

Current Issues in Economics and Finance This Element is intended for students and practitioners as a gentle and intuitive introduction to the field of discrete-time yield curve modelling. I strive to be as comprehensive as possible, while still adhering to the overall premise of putting a strong focus on practical applications. In addition to a thorough description of the Nelson-Siegel family of model, the Element contains a section on the intuitive relationship between P and Q measures, one on how the structure of a Nelson-Siegel model can be retained in the arbitrage-free framework, and a dedicated section that provides a detailed explanation for the Joslin, Singleton, and Zhu (2011) model.

The Explanatory Power of the Yield Curve in Predicting Recessions in South Africa Artificial intelligence (AI) is regarded as the science and technology for producing an intelligent machine, particularly, an intelligent computer program. Machine learning is an approach to realizing AI comprising a collection of statistical algorithms, of which deep learning is one such example. Due to the rapid development of computer technology, AI has been actively explored for a variety of academic and practical purposes in the context of financial markets. This book focuses on the broad topic of “AI and Financial Markets”, and includes novel research associated with this topic. The book includes contributions on the application of machine learning, agent-based artificial market simulation, and other related skills to the analysis of various aspects of financial markets.

A Companion to Economic Forecasting The scope of this study is to estimate the zero-coupon yield curve of tomorrow by using Vasicek yield curve model with the zero-coupon bond yield data of today. The raw data of this study is the yearly simple spot rates of the Turkish zero-coupon bonds with different maturities of each day from July 1, 1999 to March 17, 2004. We completed the missing data by using Nelson-Siegel yield curve model and we estimated tomorrow yield curve with the discretized Vasicek yield curve model.

The Predictive Power of the Yield Curve Finds that predicting interest rates of 90-day treasury bills using artificial neural networks works better than using multiple regression models.

Low Interest Rates, Policy, and the Predictive Content of the Yield Curve Does the yield curve's ability to predict future output and recessions differ when interest rates are low, as in the current global environment? In this paper we build on recent econometric work by Shi, Phillips and Hurn that detects changes in the causal impact of the yield curve and relate that to the level of interest rates. We explore the issue using historical data going back to the 19th century for the US and more recent data for the UK, Germany, and Japan. This paper is similar in spirit to Ramey and Zubairy (2018) who look at the government spending multiplier in times of low interest rates.

Robustness in Econometrics

Modeling and Predicting the Yield Curve's Risk Premium A negative-sloped Treasury curve is often cited in financial news articles and by Federal Reserve economists as a predictor of recessions. This report reviews previously published research examining the reliability of yield curves predicting recessions. Findings show that the yield curve inverts two or more quarters before recessions, with short-term interest rates rising above long-term interest rates. Probit regression has proven a reliable method for generating estimated probabilities of future recessions that, in turn, are useful for both monetary policy and asset allocation decision-making.

Yield Curve Modeling and Forecasting
Analysing and Interpreting the Yield Curve The financial press frequently suggest that the shape of yield curve reflects information about the prospects of the economy. This paper attempts to formalize the link between the yield curve and the real economic activity. A closed-form formula for the term structure of interest rates is derived. It is shown that the term structure embodies the market's expectation about changes in the macroeconomic fundamental—the growth in real aggregate output of the economy. The paper then documents the use of bond market data for predicting GDP growth in the G-7 industrial countries. The results suggest that a simple measure of the slope of the yield curve, namely the yield spread, serves as a good predictor of future economic growth. The out-of-sample forecasting performance of the yield spread compares favorably with that of the alternative stock price-based model and a univariate time series (ARMA) model. One practical implication is that it may be useful to add some measure of the term structure to the list of

Bond Pricing and Yield Curve Modeling In finance, an interest rate derivative is a financial instrument where the underlying asset is an interest rate at which payments are made based on a notional amount. A common approach to price interest rate derivatives is through the use of interest rate models. However, a drawback with this approach is that calibration of interest rate models does not involve the interest rate being modeled. Hence, calibrated models may not be good representations of interest rates and may not produce reliable derivative prices. To deal with the issue, we propose a time series modeling approach to analyze interest rates, specifically, the zero-coupon yield curves. In this approach, yield curves are modeled as functional data and we introduce models that are based on the well-known autoregressive model in time series analysis. The objective of this approach is to understand the dependency of the yield curves on historical data and to predict future yield curves before they are observed. The proposed models are illustrated and compared with the time series of US Treasury zero-coupon yield curves. We explore how individual models perform during different times in an economic cycle. We also propose a way to predict future caplet prices by combining yield curve prediction using functional time series models and historical implied volatilities of caplets. The time series approach that we propose are shown to work well against existing models such as the Hull-White model.

AI and Financial Markets This paper provides a brief survey of the relationship between the yield curve and future changes in interest rates and inflation. The expectations hypothesis of the term structure indicates that when the yield curve is upward sloping, future short-term and long-term interest rates are expected to rise. Empirical evidence finds that as predicted by the expectations hypothesis, yield spreads are positively correlated with future changes in short-term interest rates, particularly at long horizons. However, yield spreads are negatively correlated with next period's change in long-term interest rates, the opposite prediction of the expectations hypothesis. Empirical evidence also suggests that the yield curve has almost no ability to forecast future inflation changes for short horizons; however, at horizons of a year or greater, the yield curve contains a great deal of information about the future path of inflation.

The Yield Curve's Predictive Power on U.S. Recessions We assess the ability of yield curve factors to predict risk premia in short-term interest rates and exchange rates across a large sample of major advanced economies. We find that the same tick-shaped linear combination of (relative) bond yields predicts risk premia in both short-term interest rates and exchange rates at return-forecasting horizons of up to six months for all (but one) countries and currencies in our sample. Our single forecasting factor loads positively on the short and long end of the curve and negatively on the medium-term and is therefore inversely related to Nelson-Siegel's curvature factor. In line with recent interpretations of the yield curve factors, our findings suggest that the hump of the yield curve bears important information about future short-term interest rates. A relatively high curvature predicts a surprise rise in short-term interest rates beyond expectations and, coincidentally, an appreciation of the home currency in line with uncovered interest rate parity.

Yield Curve In this book, well-known expert Riccardo Rebonato provides the theoretical foundations (no-arbitrage, convexity, expectations, risk premia) needed for the affine modeling of the government bond markets. He presents and critically discusses the wealth of empirical findings that have appeared in the literature of the last decade, and introduces the 'structural' models that are used by central banks, institutional investors, sovereign wealth funds, academics, and advanced practitioners to model the yield curve, to answer policy questions, to estimate the magnitude of the risk premium, to gauge market expectations, and to assess investment opportunities. Rebonato weaves precise theory with up-to-date empirical evidence to build, with the minimum mathematical sophistication required for the task, a critical understanding of what drives the government bond market.
YIELD CURVE ESTIMATION AND PREDICTION WITH VASICEK MODEL. I started my career on Wall Street in 1978. For the past 40 years on the Street, I have been thinking and writing about the economy and financial markets as both an economist and an investment strategist. While I have a solid academic background to be a Wall Street prognosticator, I learned a great deal on the job. In this book, I share my professional insights into predicting the economy and financial markets.

Economics Gone Astray This book presents recent research on robustness in econometrics. Robust data processing techniques – i.e., techniques that yield results minimally affected by outliers – and their applications to real-life economic and financial situations are the main focus of this book. The book also discusses applications of more traditional statistical techniques to econometric problems. Econometrics is a branch of economics that uses mathematical (especially statistical) methods to analyze economic systems, to forecast economic and financial dynamics, and to develop strategies for achieving desirable economic performance. In day-by-day data, we often encounter outliers that do not reflect the long-term economic trends, e.g., unexpected and abrupt fluctuations. As such, it is important to develop robust data processing techniques that can accommodate these fluctuations.

The Yield Curve and Real Activity

Why Does the Yield Curve Predict Economic Activity? Understand and interpret the global debt capital markets Now in a completely updated and expanded edition, this is a technical guide to the yield curve, a key indicator of the global capital markets and the understanding and accurate prediction of which is critical to all market participants. Being able to accurately and timely predict the shape and direction of the curve permits practitioners to consistently outperform the market. Analysing and Interpreting the Yield Curve, 2nd Edition describes what the yield curve is, explains what it tells participants, outlines the significance of certain shapes that the curve assumes and, most importantly, demonstrates what factors drive it and how it is modelled and used. Covers the FTP curve, the multi-currency curve, CSA, OIS-Libor and 3-curve models Gets you up to speed on the secured curve Describes application of theoretical versus market curve relative value trading Explains the concept of the risk-free rate Accessible demonstration of curve interpolation best-practice using cubic spline, Nelson-Siegel and Svensson 94 models This advanced text is essential reading for traders, asset managers, bankers and financial analysts, as well as graduate students in banking and finance.

Predicting the Markets The use of forward interest rates as a monetary policy indicator is demonstrated, using Sweden 1992-1994 as an example. The forward rates are interpreted as indicating market expectations of the time-path of future interest rates, future inflation rates, and future currency depreciation rates. They separate market expectations for the short-, medium-, and long-term more easily than the standard yield curve. Forward rates are estimated with an extended and more flexible version of Nelson and Siegel's functional form.

Modeling and Forecasting the Yield Curve Under Model Uncertainty The banking and finance industry plays a significant role in the economy of a nation. As such, continuous research and up-to-date feeds are necessary for it to stay competitive and resilient. Due to its revolving and dynamic nature as well as its significance and interlinkages with other industries, a well-functioning banking and finance system is vital in safeguarding the interest of all stakeholders. Banking and Finance covers a wide range of essential topics highlighting major issues related to banking and finance. The book is rich with empirical evidence, scientific researches, best practices, and recommendations, making it a compact yet handy reference for readers, especially those who are in the field of banking and finance.

An Indicator of Future Inflation Extracted from the Steepness of the Interest Rate Yield Curve Along Its Entire Length Understanding the dynamic evolution of the yield curve is critical to many financial tasks, including pricing financial assets and their derivatives, managing financial risk, allocating portfolios, structuring fiscal debt, conducting monetary policy, and valuing capital goods. Unfortunately, most yield curve models tend to be theoretically rigorous but empirically disappointing, or empirically successful but theoretically lacking. In this book, Francis Diebold and Glenn Rudebusch propose two extensions of the classic yield curve model of Nelson and Siegel that are both theoretically rigorous and empirically successful. The first extension is the dynamic Nelson-Siegel model (DNS), while the second takes this dynamic version and makes it arbitrage-free (AFNS). Diebold and Rudebusch show how these two models are just slightly different implementations of a single unified approach to dynamic yield curve modeling and forecasting. They emphasize both descriptive and efficient-markets aspects,
they pay special attention to the links between the yield curve and macroeconomic fundamentals, and they show why DNS and AFNS are likely to remain of lasting appeal even as alternative arbitrage-free models are developed. Based on the Econometric and Tinbergen Institutes Lectures, Yield Curve Modeling and Forecasting contains essential tools with enhanced utility for academics, central banks, governments, and industry.

Using the U.S. Treasury Yield Curve to Predict S & P 500 Returns and U.S. Recessions

The Yield Curve and Predicting Recessions

The Yield Curve As A Forecasting Tool We propose a methodology that permits to investigate and forecast the behavior of a variable and its determinants in real time, both in the time and in the frequency domain, starting from a model designed in the time domain, which makes the presentation and evaluation of the results straightforward. This paper applies the methodology to the yield curve. We extract all the shocks affecting the forward rates and the yields and we divide them into three disjoint classes: 1) long-run shocks giving rise to possibly permanent effects, 2) medium-run forces and 3) short-run forces giving rise to transitory effects. These forces drive the low-, medium- and high-frequency component, respectively, composing the time series of the variables used in the model. We explicitly model and estimate such cause-and-effect relationships. The analysis of the shocks and the frequency components provides a timely and comprehensive overview of the nature of the movements in the yields. Furthermore, using the forecast of the frequency components to forecast the yields enhances forecast accuracy, also at long prediction horizons. To perform the frequency decompositions, to identify the forces governing the evolution of the model variables, and to perform the out-of-sample forecasts we use a dynamic filter whose embedded feedback control corrects for model uncertainty.

Analysing and Interpreting the Yield Curve

The Term Structure of Interest Rates

Does the Yield Curve Predict Output? This paper examines the ability of the yield curve to predict recessions in South Africa, and compares its predictive power with other commonly used variables that include the growth rate in real money supply, changes in stock prices and the index of leading economic indicators. The study also makes an attempt to find out if monetary policy explains the yield spread’s predictive power with regards to future economic activity. Regarding methodology, the standard probit model proposed by Estrella and Mishkin (1996) that directly estimates the probability of the economy going into recession is used. Results from this model are compared with a modified probit model suggested by Dueker (1997) that includes a lagged dependent variable. Results presented in the paper provide further evidence that the yield curve, as represented by the yield spread between 3-month and 10-year government paper, can be used to estimate the likelihood of recessions in South Africa. The yield spread can produce recession forecasts up to 18 months, although its best predictive power is seen at two quarters.

Bond Portfolio Optimization ’It is written in clear English, without equations, and with plenty of charts to ground one's understanding in the real world … The authors make a compelling case that economists need to take their simplifying assumptions more seriously, to embrace statistical techniques that can track dynamic markets with time-varying parameters, and to always be aware of the importance of shifts in the underlying context.'Global Commodities Applied Research DigestEconomics Gone Astray is a collection of essays on critical topics in macroeconomics that frame the issues in terms of clearly stated assumptions, highlighting the errors often made by professional economists, and allowing readers to better analyze market behavior and the economic consequences of policy decisions. The book differs from textbook economics, as it tackles sophisticated topics without using mathematics or technical jargon. This makes the book highly accessible to all types of readers, from investors and investment professionals, to professors and their students. The book’s style integrates a large quantity of clearly drawn charts which help anchor the readers’ perceptions of the topics being examined, from inflation to taxes, to demographics.

A Practitioner's Guide to Discrete-Time Yield Curve Modelling A Companion to Economic Forecasting provides an accessible and comprehensive account of recent developments in economic forecasting. Each of the chapters has been specially written by an expert in the field, bringing together in a single volume a range of contrasting
approaches and views. Uniquely surveying forecasting in a single volume, the Companion provides a comprehensive account of the leading approaches and modeling strategies that are routinely employed.

Riding the Yield Curve and Predicting the Interest Rates The yield curve has long been a subject of interest to macroeconomists and financial economists since the term structure of interest rates carries important information about expectations, monetary policy and market risk factors. As expectation hypothesis suggest; it is possible to extract expectations of economic actors about future economic activity by torturing the term structure of interest rates. Recent economic and financial crisis has manifested the importance of the indicators that correctly predict the future path of economy, and hence has increased the value of studies on the yield curve. In this study, we provide a literature survey of predictive power of the yield curve on inflation and real economic activity and, of policy effects on the predictive power of the yield curve. We also investigate whether the yield spreads and real economic activity has long-run relationship in Turkey. Economists, policymakers and market analyst who wish to investigate whether the term structure of interest rates contains significant information about the future economic activity can utilize this study.

Predicting Risk Premia in Short-term Interest Rates and Exchange Rates How to build a framework for forecasting interest rate market movements With trillions of dollars worth of trades conducted every year in everything from U.S. Treasury bonds to mortgage-backed securities, the U.S. interest rate market is one of the largest fixed income markets in the world. Interest Rate Markets: A Practical Approach to Fixed Income details the typical quantitative tools used to analyze rates markets; the range of fixed income products on the cash side; interest rate movements; and, the derivatives side of the business. Emphasizes the importance of hedging and quantitatively managing risks inherent in interest rate trades Details the common trades which can be used by investors to take views on interest rates in an efficient manner, the methods used to accurately set up these trades, as well as common pitfalls and risks?providing examples from previous market stress events such as 2008 Includes exclusive access to the Interest Rate Markets Web site which includes commonly used calculations and trade construction methods Interest Rate Markets helps readers to understand the structural nature of the rates markets and to develop a framework for thinking about these markets intuitively, rather than focusing on mathematical models

Financial Management for Small Businesses

Predicting a Recession Does the yield curve have the ability to predict output and recessions? At some times and in certain places, of course! But many details are matters of dispute: When and where does the yield curve predict successfully, which aspects of the curve matter most, and which economic forces account for the predictive ability? Over the years, an increasingly sophisticated set of tools, both statistical and theoretical, have addressed these issues. For the US, an inverted yield curve, particularly when the spread between the yield on 10-year and 3-month Treasuries becomes negative, has been a robust indicator of recessions in the post-World War Two period. The spread also predicts future real GDP growth for the US, although the forecast ability varies by time period, in ways that appear to depend on monetary policy. The evidence is less clear in other countries, but the yield curve shows some predictive ability for the UK and Germany, among others.

Interest Rate Markets The yield curve?specifically, the spread between the interest rates on the ten-year Treasury note and the three-month Treasury bill?is a valuable forecasting tool. It is simple to use and significantly outperforms other financial and macroeconomic indicators in predicting recessions two to six quarters ahead.

Estimating and Interpreting Forward Interest Rates Understand and interpret the global debt capital markets Now in a completely updated and expanded edition, this is a technical guide to the yield curve, a key indicator of the global capital markets and the understanding and accurate prediction of which is critical to all market participants. Being able to accurately and timely predict the shape and direction of the curve permits practitioners to consistently outperform the market. Analysing and Interpreting the Yield Curve, 2nd Edition describes what the yield curve is, explains what it tells participants, outlines the significance of certain shapes that the curve assumes and, most importantly, demonstrates what factors drive it and how it is modelled and used. Covers the FTP curve, the multi-currency curve, CSA, OIS-Libor and 3-curve models Gets you up to speed on the secured curve Describes application of theoretical versus market curve relative value trading Explains the concept of the risk-free rate Accessible demonstration of curve interpolation best-practice using cubic spline, Nelson-Siegel and Svensson 94 models This advanced text is essential reading for traders, asset managers, bankers and financial analysts, as
well as graduate students in banking and finance.

Copyright code: 93da2af407c319def83956caa9ee8208