Thorsrud, L.A. (2020), Forecasting: An Essential Introduction, by Castle, Jennifer, Clements, Michael and Hendry, David (Yale University Press, New Haven and London, 2019), pp. 240. . Econ Rec, 96: 526-527. https://doi.org/10.1111/1475-4932.12588

"Forecasting: An Essential Introduction" by Jennifer Castle, Michael Clements, and David Hendry (Yale, 2019)

A review by Leif Anders Thorsrud, Associate Professor, BI Norwegian Business School

"Some things are so unexpected that no one is prepared for them" wrote Leo C. Rosten according to one of the many citation in this new book by Jennifer Castle, Michael Clements, and David Hendry. While certainty descriptive for many forecasting experiences, it is absolutely not true for "Forecasting: An Essential Introduction". The book delivers what it promises, namely being a concise, engaging, and highly intuitive guide to the basic principles of forecasting.

Unsurprisingly, given the background of the authors, the readers of this book learn not only about basic forecasting principles and how to evaluate forecasts, but also about trends and non-stationarity, break points, indicator saturation, model and forecast combination. Still, while covering a lot of ground, the material is presented in a manner that makes it easy to digest.

This book is not for those wanting a technical book about forecasting. Rather, it is for those wanting a gentle, while at the same time thorough, introduction to forecasting. Instead of equations and math, you will find many illustrative graphs, entertaining anecdotes, well thought through examples, and citations and historical "fun-facts". Did you for example know that one of the earliest attempts at statistical forecasting was by the English economist, Sir William Petty, during the 17th Century, or that the famous weather forecaster Robert Fitzroy committed suicide in 1865 because of the difficulties in making "successful" forecasts?

Clearly, forecasting has a long history and is important. This book starts by giving the reader a short description of why forecasting is important, and then lists five lessons that are imperative when thinking about and conducting forecasting. In short, these lessons evolve around forecast uncertainty, evaluation of this uncertainty, challenges with non-linearity, and model misspecification. The remainder of the book, which contains 209 pages and 15 chapters, is essentially putting meat to the bone on these five main lessons.

It is impressive how the authors in the first two-three chapters of the book manage to describe important statistical concepts such as expectations, variance, and probability distributions in an intuitive and non-technical manner almost without using any math. In that respect, the usage of examples from both every-day life and economics is illuminating and constructive.

I also very much enjoy the focus in the following chapters on how to evaluate forecasts, and the emphasis the authors put on forecast uncertainty. Certainly, this is a theme that is often overlooked even in scientific publications, which very often only present and evaluate expected outcomes. In this book the readers even learn about how to evaluate density forecasts!

All forecasting practitioners know very well that forecasting it is a difficult business. The predictions we make are wrong most of the time. But, when you have learned about forecasting uncertainty you should not be too critical. That is, unless there are systematic forecast failures. Luckily, this book spends over five chapters describing the reasons for systematic forecast failures and how to potentially avoid such failures. Naturally, non-linearity and structural breaks are a central part of this story, and the authors again manage to covey this message in a very intuitive and engaging manner.

Of course, information is a key ingredient in all forecasting enterprises, and the authors focus on this topic towards the latter chapters of the book. Themes related to pooing information and different models are discussed, although to a far smaller degree than the time spent on discussing the reasons for systematic forecast failures. Finally, the last chapter of the book also gives the reader a very nice

suggestion for further reading. This list includes books and articles ranging from other soft-reads to more technical oriented scientific articles.

One could always desire more. This book is written by people with a special interest in economic forecasting and time series analysis. Not much is said about forecasting, e.g., cross-sectional data and classification problems, although many of the same underlying principles apply and examples from climate related forecasting domains are discussed. Likewise, the Bayesian perspective has a strong standing within decision theory and forecasting, but is hardly mentioned in this book. Moreover, given the large attention given to Machine Learning and Big Data these days, it feels somewhat strange that themes, lessons, and methods from this literature hardly are mentioned and discussed. It is for example now easy to argue that the potential biggest gains in terms of producing more accurate forecasts are by obtaining better and alternative data. In fact, in my opinion, this is the biggest weakness of the book. It feels rather introvert by focusing so much on classical econometrics, and it fells somewhat backward looking by not writing more about the large improvements in forecasting obtained the last decade(s) within data science more broadly.

Still, as an introduction to forecasting for people interested in how economists typically think about forecasting, the book is excellent. Although framed as a non-technical introduction to forecasting, even experienced forecasters and econometricians would find joy in reading it. The book stands out as something in between the international bestseller "The Signal and the Noise: Why Most Predictions Fail – but Some Don't" by Nate Silver and a more technical academic book on econometrics and forecasting. As such, it should work well as a supplement in introductionary forecasting courses at all levels of education, as well as in the hammock a warm summer's day.