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Is there evidence of pessimism and doubt in subjective distributions? Implications for the equity premium puzzle

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Abstract

Abel (2002) shows that pessimism and doubt in the subjective distribution of the growth rate of consumption reduce the equity premium puzzle. We quantify the amount of pessimism and doubt in survey data on US consumption and income. Individual forecasters are in fact pessimistic, but show marked overconfidence rather than doubt. However, the implications for Abel's model depend on how the empirically heterogeneous beliefs are mapped into beliefs of a representative agent. We use an Arrow-Debreu economy to show that disagreement increases the equity premium. When incorporating this in our estimation, we find little empirical evidence of either overconfidence or doubt.

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1. Introduction

A number of recent papers on the riskfree rate and equity premium puzzles explore departures from the neoclassical paradigm in which the puzzle was originally formulated. For example, [Barberis et al. \(2001\)](#) adopt a non-standard utility function, motivated by prospect theory; [Anderson et al. \(2003\)](#) and [Tornell \(2000\)](#) relax the rational expectation hypothesis, postulating ambiguity-averse agents; and [Benartzi and Thaler \(1995\)](#) consider myopic loss aversion. While several theoretical explanations have been proposed, empirical attempts at discriminating the more successful models are lagging behind. This paper is one such attempt.

We concentrate on the work of [Abel \(2002\)](#), who studies deviations from rational expectations in an otherwise standard neoclassical framework. Starting from the [Lucas \(1978\)](#) fruit-tree asset pricing model, he shows that uniform pessimism and doubt enhance the empirical performance of the model, in particular by reducing the equity premium and riskfree rate puzzles. Uniform pessimism is defined as (the subjective distribution being) a leftward translation of the objective distribution, doubt as a mean-preserving spread of the objective distribution.

Given the crucial role played by the behavioral assumptions, an evaluation of their empirical plausibility is desirable. In Abel's words '...this demonstration leads naturally to the next question: How much pessimism and doubt might characterize subjective distributions?' (p. 1088). In this paper we take on the question. We commence our investigation with no strong prior on the presence of pessimism in actual expectations. As for doubt, surveys and experimental studies typically conclude that people are prone to overconfidence, that is, its opposite.¹ Using methods discussed in [Giordani and Söderlind \(2003\)](#), we study data from the Livingston Survey and, in particular, from the Survey of Professional Forecasters (SPF), looking for evidence for and against pessimism and doubt in the subjective distributions of US consumption and real output growth.

The plan of the paper is as follows: Section 2 summarizes the model in [Abel \(2002\)](#); Section 3 describes the survey data; Section 4 looks at pessimism; Section 5 is concerned with doubt in individual distributions; Section 6 develops a simple model to argue that when the focus is on asset pricing it may be more appropriate to look for doubt in the average (across forecasters) distribution; and Section 7 summarizes our findings.

2. A short recap of Abel's model

This section presents a simplified version of the model in [Abel \(2002\)](#). It shows the risk premium on a consumption claim when the representative investor has pessimism and doubt.

¹[Rabin \(1998\)](#) and [Hirshleifer \(2001\)](#) discuss overconfidence in their surveys of behavioral economics and finance. In this literature, the term 'overconfidence' usually describes overly narrow confidence bands (the opposite of Abel's doubt), but it can also stand for inadequate adjustment of one's forecast when given knowledge of other agents' forecasts.

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