Review of: "Visualizing the Contraction Mapping Theorem"

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Potential competing interests: No potential competing interests to declare.

The target readership for this paper is primarily instructors and first-year graduate students of Economics. The main goal of the paper and the companion video is to visualize the process of value function iteration and convergence in the context of the optimal growth model and optimal savings problem.

The optimal growth model is a concept in economics that aims to determine the most effective way for an economy to achieve sustainable growth. There are different types of optimal growth models available, but one of the most common ones is the neoclassical growth model. This model is used in conjunction with the Ramsey model and Bellman equation. The paper also includes numerical illustrations.
The optimal savings problem is a fundamental concept within the optimal growth model, focusing on an individual or household's decisions about consumption and savings over time. There are various approaches to solving the optimal savings problem, including Dynamic Programming and the Euler Equation. The paper mentions the Euler equation solved by policy function iteration, along with numerical illustrations.

As a scientific aspect, this work is about visualizing the Contraction Mapping Theorem (Banach fixed-point theorem) and clarifying the conditions under which value function iteration converges to a unique value function.
The last part of the paper contains many useful tricks, such as some transformations of the Bellman equation that can be used.

The bibliography is updated and in concord with the subject of the paper.