ABSTRACT

Modeling the Economic Machine Using Bayesian Inference and Statistical Networks, and Optimal Portfolio Construction Using Operations Research

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In this paper, we propose a network-based model to attempt to connect modern macroeconomic theory with real world economic observations and trends. We find that by extending macroeconomic theory with credit leveraging/deleveraging thresholds, we are able to explain economic cycles in addition to long-term growth. Furthermore, we specifically explore the growth-inflation view of the macro economy as a basis for optimal portfolio construction and efficient asset trading. Connecting our network-based macroeconomic model and our optimal portfolio construction algorithm, we create a novel macroeconomic asset-trading framework.