[Elements of Economics, Finance, and Computational Mathematics]

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Abstract

We examine an emerging pedagogical realm in which the importance of three major disciplines are considered in synchronicity. The aim is to understand the coherence of an interdisciplinary science formed around modern Economics, Finance, and Computational Mathematics. We recognize the rapidly evolving progress in data encoding techniques and contemplate economic, financial, and societal phenomena that may arise from technology evolving at increasing rates.

Contents

1 Introduction

We will preface this paper with a few notions believed to be true, honest, and scientifically informed to the best of our abilities.

The first fundamental axiom we consider is that recent evolutions in cryptography [7] [17] [20] [1] create new possibilities in many financial, legal, and economic processes allowing for the properties of full transparency and trust-less execution. We make an inherent connection between economic and social prosperity. We also borrow the illustrious concept of *efficient market hypothesis* as famously described by Fama and Samuelson [6] to justify the veracity of market convergence to optimal results given sufficient coverage and volume. We recognize contemporary technology as a potentially pernicious solution to economic processes and their corruption by malicious intent. Semantic junctures between various meanings of the word *corrupt* lend themselves perfectly to our study for one principal reason: we claim that a mathematically incorruptible informational process is the ideal tool for transitioning vital financial processes to a transparent framework designed to protect against malicious human intent (i.e., *corruption*).

2 Recent computational developments

2.1 Zero Knowledge Proofs

2.2 Machine learning in numerical methods

3 Decentralization and Ethics

3.1 Recent case studies

3.1.1 Kleros [27]

3.1.2 Tornado Cash [20] [22]

3.1.3 Polymarket information content

3.2 Perspectives

4 Hypotheticals

4.1 Macroeconomic trend prediction using live shipping data

4.2 Decentralization for internal and external policy

4.3 Commodities markets and their decentralization

4.4 FX option markets and their decentralization

4.5 Commerical legal services and their decentralization

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