Relativistic invariant banking

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Abstract

World market is very unstable . In this Essay we show why. For the growing stream of liquid money on the market , the velocity of financial processes is going to the limit value , invariant stream velocity. Which is the maximal velocity for physical processes in the market. When v= vin market is unstable and uncontrolled. It is ready to critical behavior with negative trends, i.e abrupt decreasing Price, smaller then established values

Money, share certificates, passwords and other tokens are familiar quantities whose definitions nonetheless continue to evolve. For example, our conceptions of the function and physical form of money were expanded by the inventions of cryptocurrencies Here we reconsider money from another perspective, in which they are used on a network of points in space-time with a causal structure enforced by trusted constraints. Our primary motivation is that relativistic signaling (v_{in}) constraints imply a causal structure that plays a significant and growing role in the global economy. Since general relativistic corrections in weak gravitational fields are small, the background space-time around Earth is well approximated by Minkowski space.

However, our discussion applies to any fixed background space-time, so general relativistic corrections can also be included where significant. Our discussion also applies to network causal structures defined by additional constraints arising from trusted technological limitations. For example, one or both parties might accept that the other cannot practically communicate at or near light speed through the interior of the Earth, even though physics gives several ways to do this in principle.

The v_{in} speed bound on communications plays a significant role in the global financial system and some of its implications for arbitrage are well known. However, the broader financial implications of special relativity have received little attention

In the subsequent we start with analogy between banking and special relativity

Table 1

Special Relativity	Finance
Invariant mass , mc^2	Value, V
Energy, $E=\frac{mc^2}{\sqrt{1-\left(\frac{v}{c}\right)^2}}$	Price,P $P=\frac{V}{\sqrt{1-\left(\frac{v}{v_{in}}\right)^2}}$
Invariant velocity,c	Invariant velocity, vin
Kinetic Energy, T=E-mc^2	Liquid money, L= P-V

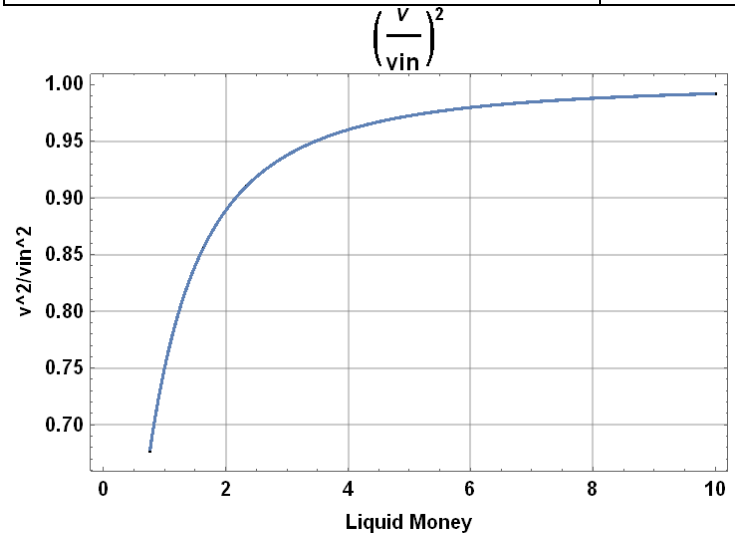

Fig.1 V/vin as the function of liquid Money, L

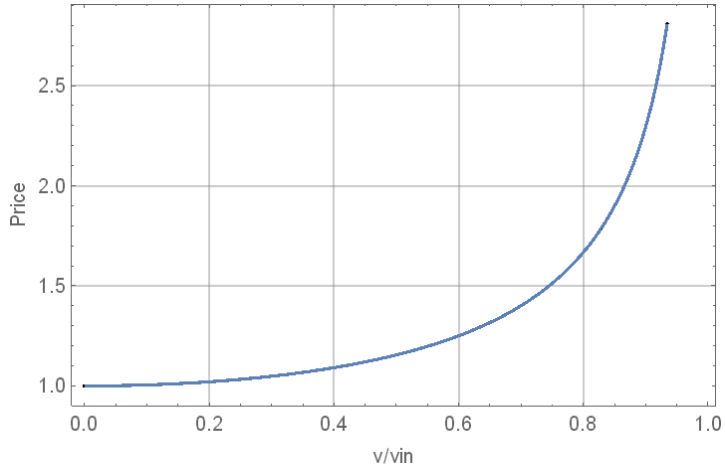

Fig2 Price as the function of $v/_{vin}$, low values

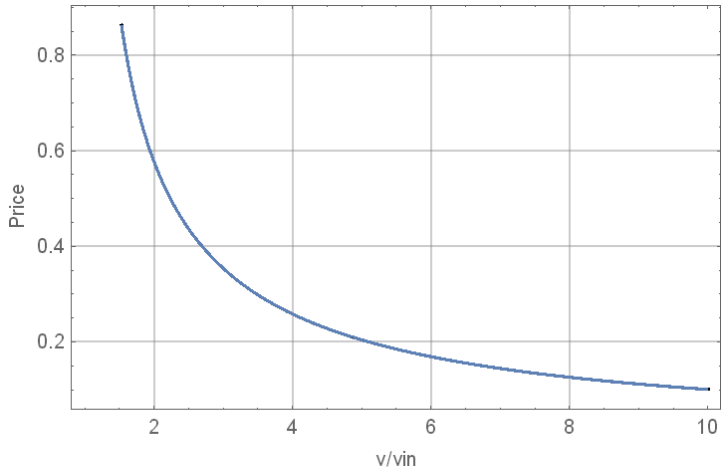

Fig.3 Price as the function of $v/_{vin}$,high values

Results

It is interesting that for growing number of liquid money on the market $v \to v_{in}$ market is unstable for price is going to infinity and finally change the trend (1) For $v \to v_{in}$ we observe growing rice. For $v=v_{in}$ the infinity can be observe. For $v > v_{in}$ the decreasing of price is observed (Figs 2 and3)