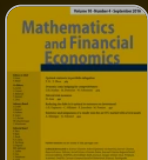


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Impact of contingent payments on systemic risk in financial networks

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$$\begin{aligned} V(x) = x + \Pi(V(x))^{\text{top}}[\bar{p}(V(x)) - V(x)^{-}]^{+} - \bar{p}(V(x)). \end{aligned}$$

We will prove continuity by utilizing the closed graph theorem (see, e.g., [2, Theorem 2.58]) noting that Proposition 3.6 provides us with the condition that the clearing wealths map into a compact set. Theorem 4 of [34] immediately provides the monotonicity of the clearing wealths.

Fix $(x \in \mathbb{R}^{n+1}_+)$ and let $(\mathcal{X} = x + [-1, 1]^{n+1})$ be a closed compact neighborhood of x in the full Euclidean space (\mathbb{R}^{n+1}) . Then we can define $(V^x: \mathcal{X} \rightarrow \mathbb{R}^{n+1}_+)$ as the restriction (and possible expansion to negative terms) of the domain of V to (\mathcal{X}) . The graph of (V^x) is given by:

$$\begin{aligned} \text{graph}(V^x) = \{ (x, V^x(x)) \in \mathcal{X} \times \mathbb{R}^{n+1}_+ \mid V^x(x) = \dots \} \end{aligned}$$

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