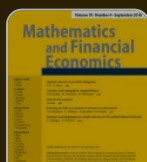


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Impact of contingent payments on systemic risk in financial networks

| Published: 18 February 2019

| Volume 13, pages 617–636, (2019) [Cite this article](#)



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$$V(x) = x + \frac{1}{p} (V(x))^{\frac{p}{p-1}} \left(\frac{1}{p} (V(x))^{\frac{p}{p-1}} - V(x) \right)^{\frac{p}{p-1}} - \frac{1}{p} (V(x))^{\frac{p}{p-1}}$$

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

$$\text{graph}(V^x) = \{ (y, V(y)) \in X \times \mathbb{R}^{n+1}_+ : y \in X, V(y) \in \mathbb{R}^{n+1}_+, V(y) \leq V^x(y) \}$$

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Cite this article

Banerjee, T., Feinstein, Z. Impact of contingent payments on systemic risk in financial networks. *Math Finan Econ* **13**, 617–636 (2019). <https://doi.org/10.1007/s11579-019-00239-9>

Received

25 May 2018

Version of record

18 February 2019

DOI

Accepted

11 February 2019

Issue date

15 September 2019

Published

18 February 2019

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