

## Corrigendum

*Time consistent Markov policies in dynamic economies with quasi-hyperbolic consumers*

by

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We would like to point out that Assumption 1 (page 90) is not sufficient for conclusions of the paper. Specifically, lemma 1 and all other theorems based on this lemma require two additional assumptions:

- $A(x) \subset A \subset \mathbb{R}^m$  is compact and [subcomplete sublattice](#) valued with  $A(0) = \{0\}$ ,
- $x \rightarrow A(x)$  is measurable.

The first missing condition is necessary to assure existence of the maximal and minimal selection of the argmax correspondence. Indeed only then the sentence:

*Since  $A(x)$  is a [subcomplete sublattice](#) and  $\mathcal{V}$  a poset, we obtain by Topkis (1978) theorem that the extremal selections ( $\overline{B}$  and  $\underline{B}$ ) of the best reply  $BR(V)(x) = \arg \max_{a \in A(x)} G(a, x, V)$  are decreasing on  $\mathcal{V}$*

is correct.

The second missing condition is necessary to assure that the extremal selections:  $\overline{B}$  and  $\underline{B}$  are measurable. Indeed, one additionally needs [measurability of the correspondence](#)  $x \rightarrow A(x)$  to recall a Measurable Maximum Theorem and assure that  $BR$  is measurable. Then by standard arguments recalling Measurable Maximum Theorem one more time on the correspondence  $BR$  one obtains measurability of  $\overline{B}$  and  $\underline{B}$ . See Proposition 2 in Hopenhaym, Prescott (1992) or Lemma 5.3 in Balbus, Reffett, Wozny (2014) for details.

### Acknowledgments

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### References

Balbus, L, Reffett, K and Wozny, L (2014). A constructive study of Markov equilibria in stochastic games with strategic complementarities, Journal of Economic Theory, vol. 150(C), p. 815-840.

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Topkis, DM (1978). Minimizing a submodular function on a lattice, Operations Research, vol. 26(2), p. 305-321.

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