

Interactive comment on “Assessment of ripple effect and spatial heterogeneity of total losses in the capital of China after a great catastrophe shocks” by Zhengtao Zhang et al.

Anonymous Referee #2

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The paper conducts a hypothetical case by applying 2008 Wenchuan earthquake into Beijing. It integrates scenario analysis, Adaptive Regional Input-Output (ARIO) model and Inter-regional ripple effect (IRRE) model to assess both direct and indirect economic loss of this hypothetical earthquake in Beijing. Specifically, the proposed IRRE model allows to investigate the spatial heterogeneity of direct and indirect loss. The paper appears to be one of the few papers conducting scenario analysis based on real past catastrophe and applying it onto another region. In this respect, the paper has certain level of novelty and it provides strong evidence to support pre-disaster preparation by Chinese local governments.

However, the paper is subject to a couple of limitations as follows: The paper utilizes

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an ARIO model to simulate the post-catastrophe economy in Beijing. However, some key parameters in the ARIO model requires more detailed explanation. For adaptation mechanisms, apart from overproduction capacity, how did you deal with imports? Price/quantity changes after floods? It's fine not to consider those factors as they can be very complicated, but the authors need to clearly state those parameters. Is those factors considered exogenously or endogenously?

The paper distributes the direct and indirect economic loss into specific districts based on street-total capital ratio and street-total business income ratio, respectively. There are assumptions underlying here. Please state clearly about this.

The paper requires thorough language-editing, especially in section 4-Results of loss assessment. Some of the results are given mistakenly in 4.1, such as 'The indirect economic loss accounts for 41.5% of total loss, and almost the same as the indirect economic loss', 'The total loss has exceeded the 2.6% of BJ's GDP in 2008, and accounted for 3.6% of the national GDP of 2008.'

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