Response to Reviewer2：

The paper investigates the impact of cross-border mergers and acquisitions (M&As) on enterprise productivity in emerging markets, focusing on the interaction between technology distance and host country market size. The study introduces a spatial structural framework that considers the nonlinear conduction effect of these factors on productivity progress in cross-border M&As. By developing a model with moderate nonlinear conduction effects, the research offers a new perspective on how emerging market enterprises can benefit from M&As. Despite the effort made by this paper, I believe that in its current state, it is lacking in several aspects and need to be improved to warrant publication in any decent journal.

1. Suggest rewriting the “Introduction” and “Conclusion” to show more clearly motivation of the paper, novelty, effectiveness, and what contribution the manuscript has.

Response 1: Thank you very much for your thoughtful comments and suggestions regarding the revision of our manuscript. We appreciate the opportunity to refine our paper and address your concerns regarding the clarity of the motivation, novelty, effectiveness, and contributions of our research.We have thoroughly revised the "Introduction" and "Conclusion" sections to better clarify the motivation and contributions of our study. Specifically, we have added 15 new references that not only support our arguments more robustly but also align with the latest research trends, which enhance the novelty and effectiveness of our manuscript. We have removed references that were less effective in supporting our research to strengthen our narrative.

Details are as follows:**Motivation of the paper:** We have clarified the research gaps our study addresses, particularly focusing on how emerging market companies utilize cross-border M&As to enhance long-term productivity. This includes a detailed discussion on the challenges and opportunities these firms face in different host market structures.**Novelty:** We have emphasized the unique aspects of our moderated U-shaped mediation model and the application of robust statistical methods like Two-stage Least Squares and Generalized Method of Moments. This approach not only differentiates our study from existing literature but also enhances our understanding of the complex dynamics involved in cross-border M&As. **Effectiveness:** The revised sections highlight the practical implications of our findings, especially how enterprises can strategically manage technological distances and market sizes effect to maximize productivity outcomes. Additionally，the study underscores the necessity of selecting appropriate host country market structures and effectively managing the acquisition timeline to impact both short-term and long-term productivity positively. **Contributions:** We now explicitly detail the contributions of our research, particularly the conceptualization of technological absorption efforts as a moderating factor. This adds a significant dimension to the academic discourse on international business strategy and economic geography.

2.The paper should define and explain key terms such as "technology distance," "host country market size," and "nonlinear conduction effect" more explicitly to ensure readers have a clear understanding of the concepts being discussed.

Response 2: Thank you for your valuable feedback concerning the clarity of key terms within our manuscript. In response to your insightful comments, we have thoroughly revised our paper to define and elucidate critical concepts more clearly, ensuring that our readership can fully grasp the complex dynamics discussed.

Specifically, we have provided a detailed definition of "technological distance," clarifying that it refers to“the technological gap between the home and host countries”. We have conceptualize in the frameworks established by Blomström and Kokko (2001) and Yu Haichao et al., (2022), illustrating its macro-level implications as well as its micro-level manifestation as a measure of a firm's technological absorption capacity or the effort required.

Furthermore, we have refined the term "nonlinear conduction effect" to "U-shaped mediation role" to more accurately reflect the mechanisms through which the host country market size impacts firm productivity in cross-border mergers and acquisitions. This adjustment not only clarifies the term but also sharpens the focus of our study.These enhancements have been made to ensure that all readers, can access and understand the concepts critical to our analysis. We are confident that these revisions have significantly improved the manuscript.

3. Suggest providing more detailed information about the methodology used to analyze the cross-border M&A data. Include information on data collection methods, statistical analysis techniques, and any potential limitations or biases in the research approach.

Response 3: Thank you for your insightful comments regarding the need for more detailed information on our methodology.

To provide a thorough understanding, we have clarified the sources and processes involved in gathering our micro-level data from multiple databases. We make supplemented instructions about Zephyr database, which is the main source of cross-border M & A data of Chinese enterprises from 2008 to 2016. Out of 1313 recorded M&A events, we selected 507 completed transactions, each verified manually to ensure data integrity. Additionally, the parent company names associated with these M&As were cross-referenced using the China Tonghuashun database for further validation.Furthermore, we included information on our use of the CSMAR and WIND databases for supplementary micro-level data, emphasizing the stringent measures taken to ensure data accuracy. This included a manual match and verification process for the 507 sample companies, resulting in 1,622 sample observations. (**See lines 333-342 for specific modifications.)**

4. Suggest offering a more in-depth discussion on how the data from Chinese enterprises' cross-border M&As from 2008 to 2016 was analyzed and interpreted to derive the conclusions presented. This will enhance the credibility and robustness of the study findings.

Response 4: Thank you for your insightful suggestion to deepen the discussion on our data analysis from Chinese enterprises' cross-border M&As during 2008 to 2016. We have updated our manuscript to include a concise yet comprehensive explanation of our data interpretation methods.We clarified the steps taken to analyze the data, including the use of Two-stage Least Squares and Generalized Method of Moments, which are pivotal for mitigating endogeneity concerns and enhancing the robustness of our results. This expanded description ensures that readers can fully appreciate the analytical rigor behind our conclusions.

5.While the paper touches on practical implications for enterprises in emerging markets engaging in cross-border M&As, it could benefit from a more detailed discussion on specific strategies or recommendations based on the study findings. This will make the research more actionable for practitioners in the field.

Response 5: Thank you for your constructive feedback regarding the practical implications section of our paper. We appreciate your suggestion to elaborate on specific strategies and recommendations based on our study findings to make the research more actionable for practitioners. We have added and improved this part.

The specific strategic application emphasizes the following aspects. (1)Economic Geographic Strategic Decision-Making: We emphasize the importance of considering both market size effects and technological distances when selecting host countries. This approach helps firms balance immediate productivity gains with long-term growth opportunities.(2)Management of M&A Timeline: We recommend focusing on market expansion early in the acquisition process to maximize market size effects, thereby facilitating stronger technology absorption as operations mature.(3)Policy Support and Technical Assistance:We suggest that governments offer targeted support, such as R&D grants and technical training subsidies, to firms tackling high technological distance challenges, ensuring smoother technology integration and enhancing competitive edges.(4)Adaptive Selection of Host Market Structures:We advocate for a diversified selection of acquisition markets to improve economic resilience and adapt to global supply chain shifts, ensuring sustainable growth.

These enhancements to our manuscript clarify how our research translates into tangible strategies for enterprises and policymakers engaged in cross-border M&As, ensuring the paper's findings are not only insightful but also practically applicable.

6. Although the paper is reasonably well presented, it is strongly recommended to carefully proofread for grammatical and type errors. There are some hard-to-understand sentences over the paper.

Response 6: Thank you for your valuable feedback on our manuscript, particularly regarding the grammatical and typographical errors that impacted the readability of our paper. We apologize for the oversight and appreciate your patience and attention to detail.

In response to your recommendations, we have conducted a thorough proofreading and revision of the entire manuscript. We employed the services of a professional editor who specializes in academic publications to ensure that all language issues were addressed. This has greatly enhanced the clarity and flow of the text, and we have made sure to clarify or rephrase any sentences that were previously difficult to understand.