

Response to reviewers:

Reviewer 1

I think the paper is an important paper for laying out the research agenda on how the financial sector could be an important transformative tool for greening our economies. However, before publication I would see the following aspects to be addressed:

1. Introduction: The introduction currently presents a rather negative view of finance. It would benefit from highlighting some of the progress made in sustainable finance over recent years, including advancements in regulation and increased volumes. While acknowledging that these efforts are still insufficient, the paper should recognize these developments, as suggested in the first review and point out more clearly where the actual gap lies. Additionally, incorporating insights from the recent World Bank Finance and Prosperity Report Chapter 3, which discusses climate finance instruments used by central banks, regulators, and supervisors, would be beneficial. In this context, the paper could even more clearly identify the existing gaps that hinder positive tipping points in the financial sector.

Thank you for your insightful comments. We have now addressed these points by expanding the introduction to highlight recent progress in sustainable finance and new tools and instruments from Chapter 3 of the recent World Bank Finance and Prosperity Report. While we acknowledge that these efforts remain insufficient, the revised introduction recognizes these developments and more clearly identifies the persistent gaps.

2. Clarifying the Tipping Point: The concept of the actual tipping point is not yet clear. The current description suggests a non-linear growth in sustainable finance, but it does not fully explain how sustainable finance will become the new default, even if inducing policies are phased out, which in my understanding would represent a true tipping point rather than just scale.

Thank you for your insightful feedback on clarifying the concept of a tipping point in sustainable finance. In response, we have refined the discussion to emphasize that a true tipping point represents a self-sustaining transformation in which sustainable finance becomes the standard within financial markets, independent of continued policy support. This clarifies that the tipping point involves structural permanence in sustainable finance, rather than merely an increase in scale.

3. Linking Financial Sector Policies and Decarbonization: The previous review requested a stronger connection between financial sector policies and the decarbonization of the real economy. The paper should address in more detail the actual transmission channels, e.g. if we are talking only about reductions in basis points or more substantial impacts that finance could have. My point is that if finance is seen as such a transformative tool for greening our economies, then it would be good to be more explicit on how it could do so.

Thank you for your suggestion to further specify the link between financial policies and decarbonization in the real economy. In response, we have enhanced our discussion to describe the transmission channels more explicitly. We highlight how financial sector policies, through mechanisms like carbon-adjusted capital requirements, influence both capital costs and allocation patterns, creating structural incentives for a shift toward low-carbon investments. This approach clarifies the substantial impact that finance, beyond minor cost reductions, can have on real-economy decarbonization.

4. Demand for Financing in the Real Economy: The financial sector requires demand for its financing, which is often lacking in the real economy. The paper could explore further where the incentives are and what real-sector policies are needed to complement financial sector efforts. The potential risk of a green bubble may also require further attention in this context.

Thank you for your insightful feedback regarding the demand for sustainable financing in the real economy and the potential risk of a green bubble. In response, we have expanded our discussion to clarify how real-sector policies can drive demand for sustainable finance and thereby complement financial sector efforts. Specifically, we discuss how instruments such as carbon pricing, renewable energy subsidies, and sector-specific decarbonization mandates create concrete incentives for firms to pursue sustainable financing. These policies anchor green investments in real economic activities, ensuring that capital flows support genuine decarbonization efforts rather than speculative growth.

We also address the potential for a green bubble by highlighting the importance of aligning real-sector policies with financial initiatives. By fostering substantive demand for sustainable finance within the real economy, such policy alignment minimizes the risk of asset inflation in green sectors. This integration helps prevent speculative distortions and supports a stable growth environment for sustainable finance, promoting resilience in capital flows. We believe these additions clarify the mechanisms by which real-sector policies can support a balanced expansion of low-carbon investments, reducing the risk of volatility and speculative bubbles.

5. Figure 1 and High-Carbon Investments: Figure 1 was added in response to previous reviewer comments to conceptualize the positive feedback loops leading to tipping point dynamics. However, it does not adequately address the reduction in high-carbon investments. The paper should discuss regulatory tools to reduce high-carbon investments earlier, leading up to Figure 1.

Thank you for your suggestion regarding the inclusion of regulatory tools to reduce high-carbon investments. We have addressed this point later in the paper, specifically on page 13, where we discuss the role of macroprudential regulation in reducing fossil fuel lending. In this section, we examine tools such as carbon-adjusted capital requirements and limits on fossil fuel asset holdings, which are designed to systematically decrease capital flows to high-emission sectors shifting flows towards alternative assets. These regulatory measures aim to align financial practices with decarbonization goals and reduce the financial viability of high-carbon investments. We hope this section provides the clarity and depth you were looking for on the use of regulatory tools to support a low-carbon transition.

6. Trade-offs in Sustainable Finance: The paper indicates that the focus on climate finance could be applied to other aspects of sustainable finance. However, it should also point out the trade-offs between larger climate investments and other sustainability goals, such as nature preservation. Mining is an example where these trade-offs are evident.

Thank you for your thoughtful feedback regarding the potential trade-offs between climate finance and other sustainability goals, such as biodiversity conservation. We agree that this is an important matter that was not sufficiently highlighted, and added an explanation as well as a specific reference on the issue of biodiversity and climate interactions as seen from finance.

8. Contradiction on Page 8: The second full paragraph on page 8 seems contradictory. It states that disclosure standards and transition plans could help the transition in an efficient market system but also mentions inherent limits. The messaging here should be strengthened for clarity.

Thank you for your feedback regarding the clarity of the paragraph on disclosure standards and transition plans. We have revised this section to improve the flow and strengthen the messaging. The updated text clarifies that, while disclosure standards and transition plans can facilitate the transition by supporting efficient market mechanisms, there are inherent limitations to the extent that markets alone can incorporate long-term climate risks due to the uncertainties and complexities involved in the low-carbon transition. We have highlighted that increasingly interventionist regulatory measures are

being proposed, particularly in Europe, to help address these limitations and reinforce the impact of disclosures. We hope this revision addresses your concerns and enhances the overall clarity of our argument.

9. Consistency in Terminology: The paper should ensure consistent use of terms such as GHG versus carbon emissions, which is not always the case.

Thank you for pointing out the need for consistent terminology. We have reviewed the manuscript to ensure uniform use of terms such as "GHG emissions" and "carbon emissions." Where appropriate, we standardized the terminology to "GHG emissions" for consistency throughout the paper. We appreciate your attention to detail, which has helped us improve the clarity and precision of our language.