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The Transition Wall

Assessing Climate Investment Dynamics in Vulnerable Countries

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The transition wall: Assessing climate investment dynamics in vulnerable countries

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Executive Summary

Some developing economies are approaching what can be described as a "transition wall" – a situation in which they are highly vulnerable to climate change and nature loss, yet unable to mobilize the investments required to mitigate and adapt to their impacts. More specifically, the concept refers to transition pathways that, while theoretically feasible, prove financially or socially unsustainable, making the political economy of the transition unlikely to succeed. Such situations may arise when the transformations required to shift toward greener, more resilient, and investment-led growth pathways that would enable the transition risk generating unsustainable macroeconomic, fiscal, or social pressures.

In particular, as climate change impacts intensify and become macro-critical in highly exposed economies, the need for adaptation and mitigation investments are increasingly urgent – yet investment remains chronically insufficient. This study explores the interaction between investment capacity and climate vulnerability, aiming to identify the factors that enable or hinder countries in implementing investment-centered economic policies to navigate the climate transition.

The study first outlines global investment needs for shifting toward resilient and low-carbon development pathways, with a focus on the specific challenges faced by developing countries exposed to macro-critical climate risks. Through a cross-country analysis of selected indicators, it examines the relationship between investment capacity and climate vulnerability across a broad sample of countries.

The findings reveal that certain country groups are particularly exposed to transition wall situations. Despite intra-group disparities, low-income countries - and especially Least Developed Countries -, Small Island Developing States, and Countries in Fragile and Conflict-Affected Situations appear most at risk. African economies are also overrepresented among those facing high climate vulnerability and limited investment capacity. Structural features, such as a high share of agriculture in value added, limited economic diversification, and narrow fiscal space emerge as key determinants of this vulnerability. Moreover, climate vulnerability often interacts with pre-existing economic and social fragilities, potentially reinforcing one another.

Based on this empirical analysis, the study reviews the macroeconomic self-reinforcing feedback loops that characterize transition wall contexts. It shows how investment patterns interact with fiscal and debt dynamics, and with external risk perception, potentially generating financial instability and persistent underinvestment trajectories.

Finally, the study discusses a range of reforms of the domestic and international financial architecture to help vulnerable countries overcome situations of transition wall. These include preserving the financial solvency of the most exposed economic agents, strengthening risk-absorption chains for physical and transition risks at national, regional and global levels, and revisiting the growing "conflict of seniority" within the financial commitment architecture, which is emerging as a critical challenge to address.

Mots-clés :

climate finance, adaptation, investsment, low-carbon and resilient pathway, insurance, financial sector

Classification JEL : A13, D62, E01, E22, I30, I31, O11, Q01, Q51

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Acronyms

AFD: Agence Française de Développement

AFII: Anthropocene Fixed Income Institute

AFOLU: Agriculture, Forestry and Other Land Use

ARC: African Risk Capacity

AR 6 WGII/WGIII: Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Working Group 2/Working Group 3

BAU: Business as Usual

CCRIF: Caribbean Catastrophe Risk Insurance Facility

CPI: Climate Policy Initiative

DRC: Democratic Republic of Congo

ECLAC: Economic Commission for Latin America and the Caribbean

EMDC: Emerging Markets and Developing Countries

ERDCN: Expert Review on Debt, Climate and Nature

FCS: Fragile and Conflict-affected Situations

GCA: Global Center on Adaptation

GDP: Gross Domestic Product

GHG: Greenhouse Gas

GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit

IEA: International Energy Agency

IFI: International Financial Institution

IMF: International Monetary Fund

IPCC: Intergovernmental Panel on Climate Change

LDC: Least Developed Countries

LTS: Long-term Strategies

MSME: Micro, Small and Medium Enterprises

NDC: Nationally Determined Contribution

ND-GAIN: Notre Dame Global Adaptation Initiative

SDR: Special Drawing Rights

SIDS: Small Island Developing States

UNCTAD: United Nations Conference on Trade and Development

USD: United States Dollar

Introduction

Global warming is now widely recognized as a systemic threat for human beings and ecosystems. As the IPCC AR6 report forcefully highlighted, deteriorating climate conditions are already degrading living conditions at multiple levels, including "widespread adverse impacts and related losses and damages to nature and people" (IPCC, 2023). Global warming increases the frequency and intensity of extreme weather events such as heavy rainfall episodes, hurricanes, heatwaves and droughts, as well as slow-onset events, including the gradual rise in temperature and sea level. These events affect not only human activity but also ecosystems, which are increasingly unable to provide services (e.g., water cycle regulation) at the same level. The AR6 report also points out that vulnerable countries and communities, despite their historically low levels of GHG emissions, are disproportionately affected by global warming and ecosystem degradation. Food insecurity, water scarcity, and declining agricultural and fishery productivity are among the consequences faced by 3.3 to 3.6 billion people considered particularly exposed (IPCC, 2023).

The IPCC AR6 report also reminds us that the economic consequences of climate change are particularly severe in sectors such as agriculture, fisheries, forestry, energy, and tourism. These sectors are overrepresented in the value-added structure of developing and vulnerable economies compared with developed countries. Climate change and ecosystem degradation undermine key economic assets (infrastructure, energy systems, land, etc.) and worsen labor conditions in exposed countries. Extreme weather events cause direct destruction of economic capital (Hallegatte and Vogt-Schilb, 2019), while slow-onset events may generate a gradual decline in productivity (e.g., reduced land regeneration capacity, lower hydro-electric power generation; see Kalkuhl and Wenz, 2020) and permanent loss in asset value (soil acidification, coastal erosion, crop viability, etc.).

As mentioned, vulnerable countries with historically low levels of GHG emissions are disproportionately affected by global warming and ecosystem degradation. At the same time, they benefit disproportionately less from international climate finance flows. For instance, Least Developed Countries (LDCs) receive less than 3% of the total climate finance. According to the 2021/2022 CPI Climate Finance Landscape, "the ten countries most affected by climate change between 2000 and 2019 received less than 2% of total climate finance" (CPI, 2023). These figures should be considered in light of the substantial gap that remains in adaptation finance in particular. While estimates vary, CPI calculates that developing countries alone will require USD 212 billion per year for adaptation by 2030, compared with only USD 63 billion provided in 2020/2021 (CPI, 2023). Similarly, the Second Report of the Independent High-Level Expert Group on Climate Finance estimates that current flows of international public finance for adaptation would need to be multiplied by 10 to 18 times to meet the needs (Bhattacharya et al., 2023).

However, we argue in this study that simply comparing investment needs with actual financial flows does not allow to fully capture the effective dynamics of shifting toward low-carbon and resilient

trajectories. A wide range of social, economic and financial challenges emerge when transiting to a more investment-led transition[1] pathway. In particular, the political economy of investment is critical to understanding the feasibility and acceptability of any given transition scenario. This study therefore seeks to go beyond the simple dichotomy between financing needs and current flows by foregrounding the heterogeneity of country situations with respect to mitigation and adaptation investment policies. In some vulnerable countries, the required transformations may even generate unsustainable economic and financial dynamics, leading to inviable transition pathways.

In this paper, we delve deeper into these tensions, examining how existing investment capacity may either enable or hinder transition dynamics. We also aim to identify ways to rethink existing financial practices so as to mitigate potential negative effects of current practices and enable countries to shift toward more investment-led development pathways in the current climate context. Section 1 introduces the conceptual framework of the "transition wall". Section 2 presents the results of our data analysis. Section 3 highlights key macroeconomic dynamics that may shape situations of transition wall. Section 4 outlines proposals for rethinking finance practices in order to address the transition wall faced by the most vulnerable countries.

[1] In this study, we refer to the concept of *transition* as a comprehensive and cross-sectoral socio-economic transformation, following the IPCC's definition: "Transition: The process of changing from one state or condition to another in a given period of time. Transition can occur in individuals, firms, cities, regions and nations, and can be based on incremental or transformative change" (IPCC AR6 Glossary). In the IPCC AR6 Report, the concept of *transition* appears in the context of linking climate change with development. More specifically, system transitions are identified as key enablers of "Climate Development Resilient Pathways", which aim to integrate to integrate mitigation, adaptation and development objectives in a coherent trajectory (IPCC AR6 WGII Chapter 18).

I –
The transition wall: a conceptual framework

Huge investments are needed to ensure sustainable development pathways

Global warming and ecosystem degradation are driving critical biophysical transformations, which in turn cause a wide range of adverse economic and financial impacts (Burke et al., 2015). Extreme weather events and the associated destruction of physical assets – such as infrastructure, housing, and transport - are well-known examples. Slow on-set events, including rising temperatures and sea levels, also damage physical assets (land, housing) while gradually reducing productivity in key sectors such as agriculture and energy (Kalkuhl and Wenz, 2020; Kotz and al., 2024, and revised version). Labor conditions may deteriorate in countries exposed to recurrent heatwaves, while urban areas concentrate multiple sources of vulnerability. As the IPCC AR6 report highlights, the impacts of climate change and ecosystem degradation on food security and health can also be severe, particularly in vulnerable countries (IPCC, 2023).

Extreme weather events directly cause major losses to lives, ecosystems, capital, and overall economic activity, generating significant costs (Hallegatte and Vogt-Schilb, 2019). A wide range of estimates exists, depending on the scope of damages considered. Using Extreme Event Attribution methodologies, Newman and Noy (2023) estimate that the costs of climate change-attributed costs of extreme weather events - including both direct and indirect, as well as economic and social costs - averaged USD 143 billion per year between 2000 and 2019 (Newman and Noy, 2023). Economic damages alone are estimated at USD 53 billion per year, with strong variation across event type, locations, and income levels. For example, the 2022 floods in Pakistan caused USD 30 billion in damage and economic losses (Hong et al., 2023).

Low-income countries bear the highest relative cost compared with GDP (Kotz et al., 2024, and revised version). On average, climate change-attributable extreme weather events economic costs accounts for nearly 1% of GDP annually in these countries.

Climate change impacts therefore create financial needs to compensate for climate damages, support reconstruction and economic recovery, and fund adaptation strategies to mitigate the costs of future extreme weather events.

A second major source of financing needs arises from investments required to decarbonize economies, particularly in sectors such as energy, transport and agriculture. These investments can be seen as opportunities for growth and future income generation, provided that large-scale investment occurs in the near term (Bhattacharya et al., 2022). Developing green supply chains to support the expansion of green technologies, renewable energy, efficient building materials, and sustainable transport is also part of this opportunity.

Various estimates of the financing required for transitioning toward green and resilient economic trajectories have been produced. As with any global estimate, they must be interpreted with caution, but they nonetheless give a sense of the scale of needs. Songwe et al. (2022) estimate that total financial requirements (investment and spending) to achieve transition goals amount to USD 2 to 2.8 trillion per year by 2030 (Songwe et al., 2022). This figure reflects global financial needs, though not all of it corresponds to additional financing needs. In Emerging Markets and Developing countries (EMDCs) other than China, climate-related investment would need to rise by USD 1,8 trillion in 2030 compared to 2019 spending levels – equivalent to an average of 4,8% of GDP for this group of countries (Songwe et al., 2022; Bhattacharya et al., 2022).

According to Climate Policy Initiative, "*estimated needs to mitigate and adapt to climate change range from USD 5.4 trillion to USD 11.7 trillion per year until 2030, and between USD 9.3 trillion and 12.2 trillion annually in the two following decades*", compared with USD 1.27 trillion mobilized in 2021/22. In particular, "*developing countries need USD 212 billion per year in adaptation finance up to 2030, and USD 239 billion per year between 2031 and 2050. This is roughly 3,5 times higher than the USD 63 billion adaptation finance tracked in 2021/2022*". CPI also finds that Least Developed Countries (LDCs) received only 18% of total global adaptation finance in 2021/2022 (CPI, 2023).

The required increase in climate-related finance is particularly striking in Africa. Based on NDC analysis, CPI estimates that USD 250 billion will be needed annually by 2030[2], while total annual climate finance flows in 2020 amounted to only USD 30 billion, about 12% of the required level. The additional climate finance needed is equivalent to more than 10% of total Africa's current annual GDP (CPI, 2022), with adaptation finance accounting for 24% of total needs (USD 579 billion between 2020 and 2023), despite data uncertainty and the potential underestimation of these needs. Some countries exhibit extraordinarily high needs relative to their GDP. For instance, climate finance needs represent 141% of GDP for the DRC, 80% for Somalia, 63% for the Seychelles, 49% for Eritrea, 31% for Madagascar, 59% for Mauritania, 23% for Ethiopia and Mozambique, 32% for South Africa and 19% for Zambia[3]. In terms of adaptation, despite the limited granularity of available data, additional financing is required across a wide range of sectors, including coastal zone protection, health, ecosystems and biodiversity, disaster risk management, infrastructure, water and AFOLU. Among these, water and AFOLU emerge as the most vulnerable sectors in Africa.

For many countries, these additional financing needs are immense relative to their existing capacity to mobilize resources and invest.

In this study, we focus on the capacity of developing countries, including the most vulnerable, to implement the investments required to navigate the climate transformation. It theoretically encompasses all types of investments for the transition, with a relatively higher share of adaptation investment in the most vulnerable countries. For economies with historically low levels of investment ratios, meeting these requirements demands structural

[2] This is an estimation of additional finance needs, so this does not include financial resources already committed at national level.
[3] See the complete table in Climate Policy Initiative, 2022, *The State of Climate Finance in Africa: Climate Finance Needs of African Countries,* June 2022.

transformation and a shift toward investment-led growth paths (ECLAC, 2024). Indeed, the transition to a resilient economy requires substantial upfront investment across a wide range of sectors, as well as an adaptation of productive and financial systems to worsening climate conditions (IPCC AR6 WIII, Chapter 15, 2022). This transformation is inherently cross-sectoral and cannot be achieved without significant changes in both domestic and international financial architecture. It entails reforms in investment policies, rapid increases in financial flows, and the establishment of renewed "socio-financial" pacts, for instance regarding fiscal policy.

The macro-criticality of climate change and nature losses impacts: a dynamic perspective

Beyond definitional and methodological challenges (Althouse et al., 2025), the macro-criticality of climate change and nature loss impacts invites us to analyze the transition within a theoretical framework of instability dynamics.

It is now widely recognized that climate change and nature loss have already "committed" negative impacts on key economic aggregates, leading to weaker economic performance and increasing financial instability (Kahn et al., 2021). In a revised version of their paper, Kotz et al. show that the world is already committed to an income reduction of 17% within the next 26 years (compared with a counterfactual scenario without climate change), with strong regional heterogeneity. Within this global picture, low-income countries and those at lower latitudes will experience the largest losses - 22% for South Asia and 21% for Africa (Kotz et al., 2024, and revised version). Given that these already-committed impacts are so substantial - even before considering that current mitigation strategies will critically influence impact trajectories after mid-century - any emissions pathway will expose economies to significant losses with major macroeconomic consequences. In the most exposed regions, climate change and nature losses can therefore be considered macro-critical, as their impacts are expected to have significant, systemic and prolonged effects on macroeconomic and financial aggregates.

Climate change and ecosystem degradation are also considered macro-critical in contexts where the ability of economies to absorb and dissipate the negative consequences of external shocks is comparatively low. Absorbing and dissipating such shocks is costly and not immediate, and fundamentally depends on existing buffers, both financial and non-financial. These include, among others, natural disaster management systems, financial mechanisms to smooth variability in economic activity, and the risk-absorption capacities of public and private financial institutions.

In this context, low-income countries are more exposed to macro-critical impacts of climate change and nature loss, as they are comparatively more vulnerable – particularly to temperature variations - than higher-income countries (Dell et al., 2012; Acevedo et. al, 2020). At the same time, their risk absorption capacities are significantly weaker. Several factors explain this phenomenon: the large share of agriculture in value added, limited economic diversification, low preparedness for extreme weather events, precarious housing conditions, and insufficient social and economic safety nets, among others (IPCC AR 6 WG II,

2022). Among developing countries, vulnerability to climate change is also positively associated with rising income inequality (Cevik and Jalles, 2023).

The rest of the study focuses on climate change rather than on nature and biodiviersity loss, although some of the assumptions and dynamics described can aslo apply to nature degradation.

The transition wall: A definition

Based on the above, it is clear that some countries - especially vulnerable economies – simultaneously face (i) huge investment needs to mitigate and adapt to the main impacts of climate change, and (ii) limited capacity to mobilize resources and implement the required investments to transition toward a low-carbon and resilient economy. **For some, the combination of these two challenges creates a situation we refer to as a transition wall**[4].

This concept describes transition pathways that, although theoretically possible, are financially or socially unsustainable, making the political economy of the transition unlikely to succeed. Transition scenarios in which the financial, economic and social costs of shifting to an investment-led development pathway exceed a certain threshold can be considered divergent and unviable. Such situations may arise when the set of transformations needed to scale up investment to the required level generates unsustainable macroeconomic or social adverse effects.

These negative effects may stem from unbearable social costs, excessive financial and macroeconomic instability, intractable fiscal trade-offs, or overstretched risk-absorption capacities that could trigger liquidity and solvency challenges in financial institutions. The resulting uncertainty may also generate negative spillovers, further reducing the likelihood of successful transition.

The higher the expected costs of transition, the greater the likelihood that structural constraints to investment will persist in the medium to long term, while economic and financial variability increases in the short term – ultimately hindering the transition. In such a situation, countries may fall into a trap of structural underinvestment (ECLAC, 2024).

In more adverse cases, unstable transition dynamics may even lead to reverse transition pathways. For instance, in a highly uncertain international financial environment, countries may be tempted to exploit new fossil fuel reserves to strengthen their external financial position. Similarly, dynamics of re-primarization of economies have been observed in adverse global trade contexts.

[4] Once again, in this study, we refer to the concept of *transition* as a comprehensive and cross-sectoral socio-economic transformation, following the IPCC's definition. See footnote n°1.

II –
Assessing countries' exposure to the transition wall

Methodology and indicators

Building on the conditions described above that may generate a transition wall in countries exposed to macro-critical impacts of climate change combined with limited investment capacity, this section seeks to empirically assess which countries may face such a situation. To this end, we examine the propensity of a country to follow an investment trajectory that would enable a shift toward a more investment-led development pathway in the current climate transformation.

As a first step, we proxy investment capacity using the current investment-to-GDP ratio[5]. This indicator has the advantage of being simple with a large geographical coverage, and quite stable over time. To estimate exposure to a transition wall, we combine this measure with an indicator of climate vulnerability. Several indicators exist to capture climate vulnerability. For a number of reasons, we rely on the ND-GAIN Vulnerability index[6], which measures exposure, sensitivity and adaptative capacity (the latter referring to non-financial social resources to adapt at the sectoral level)[7]. We exclude the ND-Gain Readiness Index, which reflects a country's "*ability to leverage investment and convert them to adaptation actions*" to avoid redundancy with the investment capacity indicator.

By combining these two indicators, we obtain a sample of 182 countries for which data are available (see Annex 1). A few countries are excluded due to missing data[8]. However, it is worth noting that attempts to use alternative indicators did not allow us to expand the sample.

[5] Figures are drawn from the World Bank and IMF databases (World Development Indicators and International Financial Statistics). The average of the three most recent years available - 2022 to 2024 for most countries - is used. For Micronesia, only public investment is included, as data on total investment are not available. The investment capacity is expressed as a linearly normalized score based on the distribution of investment-to-GDP ratio across all sample countries. The higher the investment-to-GDP ratio, the higher the investment capacity.

[6] The choice of this indicator is motivated by its wide geographical coverage, transparent methodology, and the possibility to select only the most relevant sub-dimensions of the global index.

[7] For a detailed presentation of the components of the ND-GAIN Vulnerability index, see (ND-GAIN, 2024). The Vulnerability index is defined as follows: "It measures a country's exposure, sensitivity and capacity to adapt to the negative effects of climate change. ND-GAIN measures overall vulnerability by considering six life-supporting sectors – food, water, health, ecosystem service, human habitat, and infrastructure. **Exposure** is defined as the degree to which a system is exposed to significant climate change from a biophysical perspective. It is a component of vulnerability independent of socio-economic context. Exposure indicators are projected impacts for the coming decades and are therefore invariant over time in ND-GAIN. **Sensitivity** is defined as the extent to which a country is dependent upon a sector negatively affected by climate hazard, or the proportion of the population particularly susceptible to a climate change hazard. A country's sensitivity can vary over time. Finally, **Adaptative capacity** is defined as the availability of social resources for sector-specific adaptation. In some cases, these capacities reflect sustainable adaptation solutions. In other cases, they reflect capacities to put newer, more sustainable adaptations into place. Adaptive capacity also varies over time.

[8] This includes Liechtenstein, Andorra, Greenland, Antigua and Barbuda, Korea, Dem. People's Rep., Hong Kong SAR, Lao PDR, Liberia, Myanmar, Nauru, Papua New Guinea, Qatar, St. Kitts and Nevis, St. Lucia, Suriname, Tuvalu, and Venezuela.

Results

In this section, we cross the two indicators introduced above and add a third dimension to refine the analysis and explore structural factors that may determine countries' exposure to transition wall situations.

The lower the income level, the higher the exposure to the transition wall

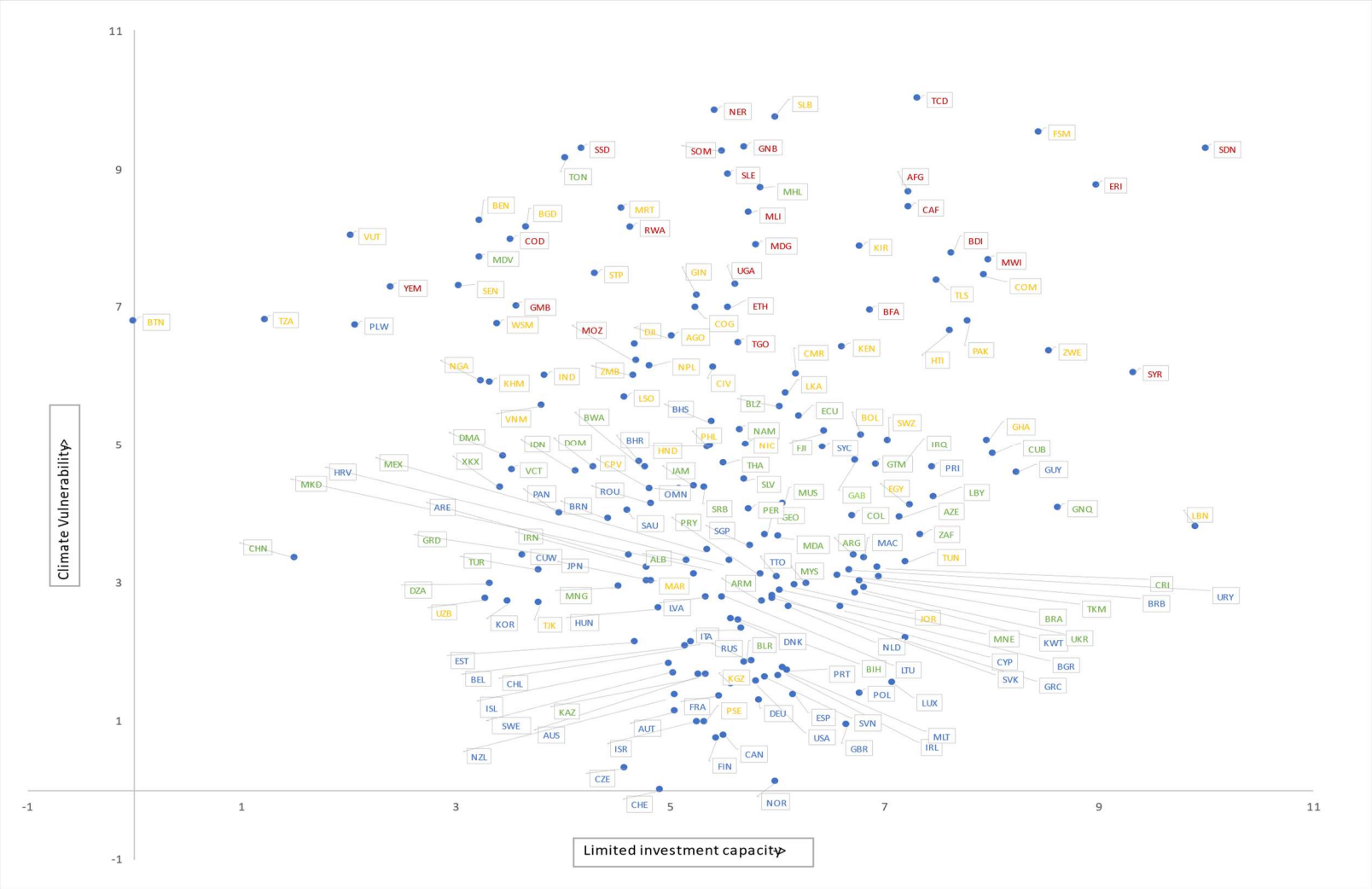
In Figure 1, the investment capacity indicator is plotted on the X-axis, while climate vulnerability is plotted on the Y-axis. Countries located closer to the upper-right corner (i.e., combining high climate vulnerability with limited investment capacity) are considered more exposed to a transition wall.

The first observation is that some developing countries, although highly exposed to climate vulnerability, show comparatively stronger investment capacity, which may allow to shift toward a more investment-led development path to adapt to climate change. For instance, Senegal, Tanzania, Samoa, Benin, Bangladesh and Bhutan all face significant climate risks but display relatively high investment propensities.

Conversely, some countries register low investment ratios while showing moderate climate vulnerability. If our climate vulnerability index is taken as a proxy for adaptation investments needs, these countries appear comparatively less exposed to transition wall situations compared to other developing countries. Examples include Lebanon, Equatorial Guinea, Guyana, Puerto Rico and South Africa, although their levels of climate vulnerability still vary[9].

[9] However, some of these countries are exposed to transition risks due to their reliance on carbonized supply chains or direct extraction of fossil fuels (e.g., Equatorial Guinea and South Africa). This exposure also implies high investments to shift to a low carbon and resilient pathways. This study does not address this vulnerability in particular, as the climate vulnerability indicator does not explicitly capture this feature.

Figure 1: Exposure to transition wall (color coding: Red = Low-income countries; Orange = Lower middle-income countries; Green = Upper middle-income countries; Blue = High-income countries)
Source : Author



When this assessment is combined with countries' income level, clearer patterns emerge regarding their distance to transition wall situations. High-income economies (blue) are strongly concentrated in the lower half of the graph. These countries are, on average, less vulnerable to climate change, while their investment capacity equals the overall sample average (see Figure 2). However, within this group, a few countries stand out with relatively low investment capacity and/or higher climate vulnerability compared to their peers, including Guyana, Puerto Rico, Seychelles, Barbados the Bahamas and Uruguay.

Figure 2: Climate vulnerability and investment capacity by income group
Source: Author calculations

Category	Number of countries (sample)	Average Climate Vulnerability Index	Average Investment Capacity Index
High-income	58	2,5	5,6
Upper middle-income	51	4,1	5,6
Lower middle-income	48	5,9	5,3
Low-income	24	8,1	6,1
Total (average)	181	4,6	5,6
Total (median)	177	4,4	5,6

Upper middle-income countries are concentrated within climate vulnerability scores ranging between 3 and 5. However, they show greater dispersion in terms of investment capacity. Some countries record low investment ratios (e.g., South Africa, Iraq, Cuba, Equatorial Guinea, Libya, Azerbaijan) while others exhibit high investment capacity (e.g., China, Dominica, Algeria, Kosovo). On average, the investment ratio in this group is the same as that of high-income economies and matches the sample average. Within this category, a number of countries combine relatively limited investment capacity with comparatively high climate vulnerability. These include small island states such as Tonga, the Marshall Islands, Fiji, and Cuba; African countries such as Namibia, Gabon, and Equatorial Guinea; South and Central American countries such as Belize, Guatemala and Ecuador; and Middle East countries such as Libya and Iraq.

Lower middle-income countries display higher climate vulnerability, with strong concentration between scores of 5 and 8 (average: 5,9, see Figure 2). A significant share of countries in this group face both high climate vulnerability and limited investment capacity, suggesting a heightened risk of transition wall. This includes small islands States such as Timor-Leste, Comoros, Micronesia, Kiribati, Haiti, and the Solomon Islands; African countries such as Zimbabwe, Kenya, Ghana, Cameroon and Eswatini; as well as Pakistan. Nevertheless, some lower middle-income countries present high climate vulnerability while showing comparatively fewer investment capacity constraints (e.g., Bhutan, Tanzania, Vanuatu, Senegal and Nigeria). On average, the investment capacity limitations of lower middle-income countries are lower than those of the total sample.

Low-income countries are heavily concentrated in the upper-right quadrant, combining very high levels of climate vulnerability (average score: 8,1) with severe investment capacity

limitations. With few exceptions, most low-income countries appear highly exposed to transition wall situations, with particularly fragile conditions in Sudan, Eritrea, Malawi, Afghanistan, Chad, Burundi, Central African Republic, and Syria. On average, this group scores significantly higher than others in both climate vulnerability and investment capacity limitations.

Overall, income level appears to be a useful criterion to explain the distribution of countries across the graph. The lower the income level, the higher the likelihood of facing a transition wall, as these economies combine strong investment capacity constraints with high climate vulnerability. It is also worth noting that countries within the same income group show a relatively homogeneous profile with respect to the transition wall challenge. This suggests that a focused interventions on common challenges facing low-income countries could be particularly relevant, especially to reduce climate vulnerability (see following sections).

Focusing on the most exposed countries (upper right quadrant of the graph[10]), we observe that a few categories of countries are clearly overrepresented:

- **Small Island Developing States (SIDS)**. About 38% of SIDS in the sample belong to the group of most exposed countries (11 out of 29). The most exposed include Comoros, Guinea-Bissau, Haiti, Kiribati, Marshall Islands, Micronesia, Solomon Islands, and Timor-Leste[11].

- **Countries in Fragile and Conflict-Affected Situations (FCS)**[12]. These countries are also significantly overrepresented, with 68% of FCS countries in the sample (23 out of 34) belonging to the most exposed group. Examples include Somalia, Syria, Niger, Mali and Eritrea.

- **Least Developed countries (LDCs)**. More than 60% of LDCs in the sample (24 out of 40) fall within the most exposed group. In addition, 56% of the countries most exposed to a transition wall situation are LDCs.

Some countries also cumulate multiple fragilities, such as Afghanistan, Burkina Faso, Burundi, Chad, Comoros, Eritrea, Guinea Bissau and Haiti. For these countries, climate vulnerability compounds existing multidimensional fragilities – a conclusion that is fully consistent with the IPCC's assessment of multidimensional fragility (Birkmann et al., 2022).

Finally, African countries are strongly represented among the most exposed. This include both low-income countries (e.g., Eritrea, Sudan, Malawi) and middle-income countries (e.g., Zimbabwe, Kenya, Republic of Congo and Namibia). Several subregions appear prominently: East Africa (Kenya, Burundi, Ethiopia), Southern Africa (Eswatini, Namibia, Malawi), and West Africa (Mali, Togo, Côte d'Ivoire). Additionally, commodity exporters (e.g., Angola), costal countries (e.g., Guinea, Cote d'Ivoire, Namibia) and landlock Sahelian countries (e.g., Mali,

[10] Countries with scores higher than 5 in both climate vulnerability and investment capacity limitations.
[11] For a comprehensive view, note that some SIDS are not included in the sample due to missing data.
[12] This category includes (i) Countries with high levels of institutional and social fragility, identified based on indicators that measure the quality of policy and institutions, and manifestations of fragility and (ii) Countries affected by violent conflict, identified based on a threshold number of conflict-related deaths relative to the population (Source: World Bank).

Chad, Burkina Faso) are represented, highlighting the diversity of structural vulnerabilities within the group.

Unequal regional exposure to the transition wall

Figure 3 plots all countries, with regional shapes encapsulating group of countries from a same region[13]. As mentioned earlier, African countries are concentrated in the upper part of the graph, indicating comparatively higher vulnerability to climate change. Within this group, investment capacity varies widely - from very low (e.g., Eritrea, Chad, Soudan, Zimbabwe) to relatively higher levels (e.g., Senegal, Tanzania, Nigeria, Benin). Overall, African countries as a group can therefore be considered significantly more exposed to transition wall situations than the rest of the sample.

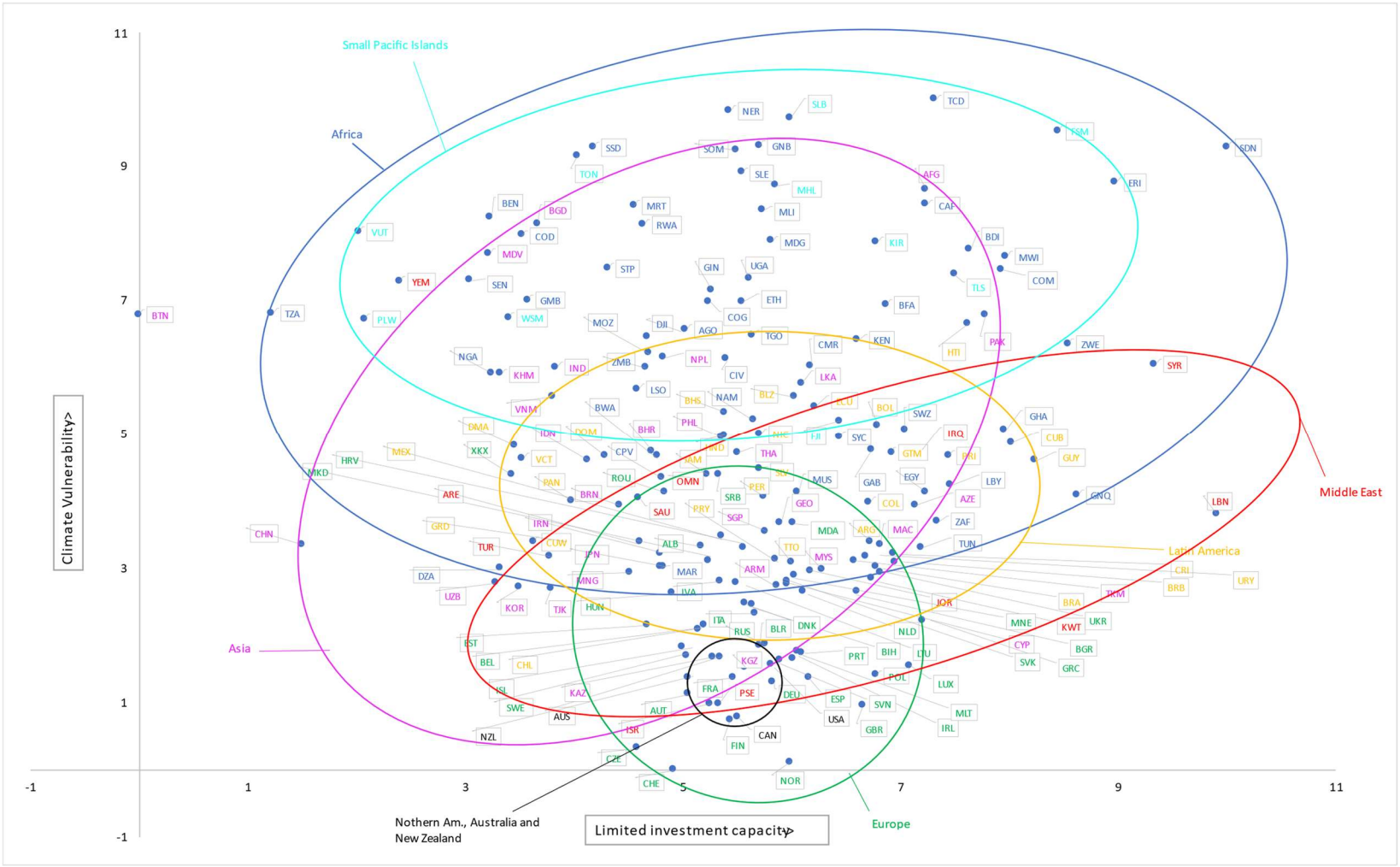
By contrast, Asian countries are largely concentrated in the bottom-left quadrant of the graph, meaning they combine relatively lower climate vulnerability with higher investment capacity. Small Pacific Islands States, many of which are SIDS, are clustered in the area characterized by both high climate vulnerability and limited investment capacity. As already noted, these countries appear among the most exposed to transition wall situations.

Latin American countries, displaying relatively higher intra-group homogeneity, are mostly located in the center-right of the graph, suggesting that they combine on average moderate climate vulnerability with limited investment capacity. Within this group, countries such as Haiti, Bolivia, Cuba and Guyana are more exposed than their regional peers. Middle Eastern countries show more intra-group heterogeneity: while most of them share moderate exposure to transition wall situations, some – including the Syrian Arab Republic, Iraq and Lebanon – display particularly low investment capacity and are therefore more exposed.

Finally, despite average investment capacity, European and Northern American countries are much less vulnerable to climate change. Within these regions, however, some countries – such as Serbia, Ukraine, Albania, Moldova and Croatia - are comparatively more exposed.

[13] Except for one or two countries, which are excluded as exceptional cases for representation purposes.

Figure 3: Exposure to transition wall (color coding: Green = Europe ; Dark Blue = Africa ; Orange = Latin America ; Black = North America, Australia and New Zealand; Purple = Asia; Light blue = Small Pacific Islands; Red = Middle East)
Source : Author



III –
The macroeconomics of the transition wall

As stated in section 1, the propensity of transition towards a more investment-led and resilient development path should be assessed dynamically. It is now widely recognized that climate change, nature loss and economic dynamics are deeply intertwined (ERDNC, 2025). In this context, a range of feedback loops emerge from these interactions, which can either amplify or mitigate the propagation of vulnerabilities within the economy. When negative feedback loops prevail and amplification effects dominate, the resulting instability and adverse impacts may exceed the path of adaptation.

This section highlights three categories of feedback loops that, depending on the context, may be self-reinforcing or self-mitigating - and positive or negative in terms of improving or deteriorating macroeconomic conditions. Assessing the dynamics of these feedback loops is essential to better understand transition wall situations, as it directly informs the viability of specific transition pathways. For instance, in countries critically exposed to such situations, investing in adaptation might not be sufficient to prevent scenarios in which uncovered damage costs surpass the economy's absorption capacity of shocks – leading to divergent trajectories where damages continue to rise while macroeconomic aggregates keep deteriorating. In these cases, additional and ambitious tailor-made measures, including substantial international financial support, are required to avoid trajectories characterized by permanent losses in GDP, income and welfare (Cantelmo et al., 2023), as well as persistent underinvestment in the long run (see final section).

The multiplier effect of climate investment

A substantial body of research has examined the positive impacts of mitigation and adaptation investments – not only in reducing the economic and financial effects of climate change, but also in generating additional growth and income (GCA, 2019). For instance, investing in major infrastructure such as dams and dikes, as well as in climate-resilient urban development (e.g., reducing heat islands, using resilient construction materials, and improving energy efficiency for heating and cooling), enhance the resilience of economic activity and living conditions to climate change (Aligishiev et al., 2022). Similarly, investing in climate-resilient agriculture practices – such as improving irrigation systems, adjusting crops selection, and strengthening storage mechanisms to cope with water scarcity, rising temperature, and soil acidification – is critical to maintaining productivity and income generation in a sector that remains strategic for many developing countries.

These types of investments often entail high upfront costs but generate systemic, positive effects across a wide range of economic sectors while improving household living standards. However, both short- and long-term benefits are often difficult to quantify in purely financial terms. Despite these challenges, studies using cost-benefit analysis, simulations, and other quantified methods show that adaptation investments are generally

profitable compared to a no-adaptation scenario with higher damage costs. Some even find that adaptation in certain sectors yield very high returns (Massetti and Mendelsohn, 2018; Aligishiev et al., 2022). For instance, Aligishiev et al. report that annual adaptation costs can exceed 10 percent of GDP in some small islands countries, while benefit-cost ratios for adaptation investments range between 2:1 and 10:1 depending on the sector - with the highest ratios found for early warning systems (GCA, 2019). Investment in disaster preparedness and public health measures also fall within this category of relatively low-cost, high benefit interventions.

At the macroeconomic level, as with any additional investment, spending on mitigation and adaptation can generate further economic activity, job creation, and income growth – thereby increasing public resources available for reinvestment (IMF, 2020). Beyond this traditional multiplier effect, adaptation investments also help reduce future losses and provide social and environmental co-benefits. These three dimensions of benefit are often referred to as the "triple dividend" of adaptation (GCA, 2019). In transition wall situations, adaptation investments may thus create a virtuous circle in which new investments simultaneously reduces future losses and stimulates additional economic activity, potentially generating further resources for investment. This positive, self-reinforcing feedback loop can help overcome a transition wall by boosting investment levels while reducing climate vulnerability.

Climate investment and risk perception

The positive effects of adaptation investments can be reinforced by improvements in risk perception among both domestic and international investors and lending institutions. Indeed, effective risk management strategies and robust financial disaster instruments can strengthen macroeconomic performance and mitigate the impact of climate shocks on the economy. Improved risk perception can therefore enhance financial creditworthiness and, ultimately, reduce the cost of funding. In turn, lower borrowing costs can ease debt service burdens and allow countries to allocate additional resources to climate-related investments. Kharas and Rivard show that a "big push" scenario – characterized by higher investment in mitigation and adaptation – can strengthen creditworthiness by fostering stronger growth performance through the positive multiplier effect of green investment described above (Kharas and Rivard, 2022).

Conversely, economic and financial volatility induced by climate change and nature degradation may adversely affect growth performance and other macroeconomic indicators (Cabezon et al., 2019), leading to sovereign credit rating downgrades (Volz et al., 2020). This, in turn, raises the cost of borrowing for exposed countries and reduces the volume of external financial resources available to them (Kling et al., 2025; Beirne et al., 2021). In some cases, this deterioration can even constrain sovereign borrowers' access to international financial markets (Mallucci, 2022). A non-linear, negative self-reinforcing feedback loop may thus emerge between deteriorating creditworthiness and risk perception on one side, and underinvestment in adaptation and recovery mechanisms (e.g., disaster preparedness) on the other. Such dynamics can further exacerbate transition wall situations in the most exposed countries.

Such an investment trap also arises for mitigation and clean technology investments when increased risk perceptions associated with climate variability raise the cost of capital provided for green projects, leading to delays or cancellations. Heightened risk perception raises equity and lending costs, as well as leverage ratios, thereby making green business models more fragile – or even unviable – in sectors such as renewables, clean technologies, smart agriculture, and sustainable construction materials. This creates a significant barrier to the diffusion of green technologies, including the most mature ones[14] (IEA, 2023). It also slows down the energy transition and associated emissions reductions, thereby increasing exposure to both transition risks and climate variability (Ameli et al., 2021). At the same time, higher interest rates extend the life expectancy of fossil fuels-based technologies and value chains, as these typically require lower upfront investments. In the short term, such trade-offs can make fossil-fuel based options appear more profitable, representing a first-best solution for countries facing elevated capital costs.

The climate-financial trap

More frequent and intense climate shocks generate both direct and indirect fiscal costs – for instance, through compensation schemes for natural disasters, the restoration of economic and natural assets, and post-disaster recovery support. Bearing such high but unpredictable fiscal burdens can constrain governments' ability to invest in adaptation, in tight budget contexts. These pressures also tend to increase public indebtedness, as additional resources are needed to cover mounting damage costs (Koetsier, 2017). In turn, underinvestment in adaptation reduces the capacity of economic agents to limit the consequences of future impacts, creating a vicious circle in which each new shock further weakens fiscal space and resilience.

Over time, this dynamic amplifies the fiscal costs of future damages, as the frequency and intensity of extreme weather events rise and slow-onset events accelerate. Countries most exposed to this "climate-financial trap" are those that combine high macro-financial vulnerability with high climate vulnerability (Bedossa, 2023). In the context of transition wall situations, countries may thus become trapped in a cycle of underinvestment in adaptation, persistent vulnerability, and growing fiscal stress.

In this regard, it is worth noting that countries exposed to the climate-financial trap partially overlap with those facing transition wall situations. Small Island countries are certainly the category of countries that are jointly exposed to both phenomena. African countries and LDCs appear to be more systematically exposed to transition wall situations, regardless of the size or geographic characteristics of the economy (for instance, whether coastal or landlocked), while the climate-financial trap particularly affects small economies, including middle-income countries, and coastal countries in particular. Not surprisingly, some countries that combine multifactorial fragilities - especially those in Fragile and Conflict-Affected Situations and LDCs - are also simultaneously exposed to both the climate-

[14] https://www.iea.org/commentaries/financial-headwinds-for-renewables-investors-what-s-the-way-forward

financial trap and transition wall situations. This includes, for instance, Eritrea, Burundi, Comoros, Guinea-Bissau, and Haiti.

The climate-financial trap can therefore be viewed as a negative, self-reinforcing feedback loop that prevents exposed economies from escaping a transition wall trajectory.

IV – Rethinking finance to cope with the transition wall

In this section, we share a set of open ideas that could help overcome the transition wall in the most vulnerable countries. These reflections range from broader political economy considerations to more specific reforms of the domestic and international financial architecture. The list is not intended to be exhaustive or systematic, and each proposal is not necessarily applicable to all country categories. Rather, the objective is to contribute to the public debate by advancing a few proposals.

Countries facing a transition wall are those for which no viable low-carbon and resilient investment trajectory can emerge without a fundamental reshaping of the financial environment in which such a transition would take place. From a financial perspective, transitioning towards a low-carbon and resilient pathway requires climate-related risk mitigation instruments and investment strategies to reinforce one another in a virtuous circle - where (i) mitigation instruments reduce climate-induced macroeconomic variability sufficiently to enable (ii) an ambitious investment strategy that effectively lowers exposure to climate transformation.

Such a virtuous circle can create mutually reinforcing incentives to invest in climate and to develop risk mitigation instruments at both the microeconomic and macroeconomic levels – thereby helping countries to move beyond the transition wall. In this section, we discuss what would be needed in certain contexts to make this transition trajectory not only feasible, but also desirable for decision-makers.

Rethinking the hierarchy of risks: placing the "no-transition" risk at its right level

High-investment trajectories will continue to be perceived as risky and potentially unstable from a macroeconomic standpoint unless a fundamental paradigm shift occurs. Alongside the conventional understanding of transition risk –typically referring to potential regulatory changes, rapid asset price depreciation, and their effects on macroeconomic stability - it is also necessary to assess the risk of "no-transition".

Area 1: Defining the "no-transition" risk in the context of climate instability, and properly assessing the impacts of a no-transition scenario relative to alternative development pathways.

The “no-transition” risk refers to the risk that a country fails to undertake a shift towards a low-carbon and resilient development pathway. Building on the literature on the cost of inaction (CPI, 2023), this risk could be estimated based on the induced economic underperformance, the persistence of existing social and institutional fragilities, financial instability, and continued high climate vulnerability stemming from not transitioning towards a more resilient pathway.

This conceptual shift requires formally distinguishing between the probability of occurrence and the impacts assessment of various scenarios. In scenario-building exercises, business-as-usual (BAU) trajectories are often considered the most probable and therefore designated as the “baseline” or “central scenario” – implicitly treating them as low-impact scenarios at the same time. All alternative scenarios are then compared to this baseline both in terms of probability and impact assessment. Decision biases such as path dependency, preference for minimal change, and familiarity bias may partly explain this cognitive association between high probability and low impact.

However, ecological transformation calls for moving away from this approach by assessing probability of occurrence and impact separately. Indeed, minimal transformation scenarios will not correspond to the lowest-impact outcomes in the context of ecological change. This distinction would represent a critical step in reshaping the political economy of risk perception associated with the transition.

An effective assessment of the no-transition risk would bring several benefits:

- Re-pricing risks: It would enable a systematic re-pricing of risks associated with the BAU scenario relative to low-carbon and resilient pathways. This could serve as a valuable basis for rebuilding key decision-support tools – such as macroeconomic forecasting frameworks, debt sustainability analyses, or rating methodologies.

- Expanding the scenario space: Considering a continuum of scenarios – ranging from the more probable but riskier BAU to the less probable but safer resilient pathway – would shift the focus from single “central” scenarios to a spectrum of possible transitions, with possible explicit trade-offs between addressing transition and no-transition risks. Mapping transition scenarios along two dimensions – the degree of transformation required and the expected impacts - could help inform decision-making while mitigating path dependency bias.

- Aligning expectations and reduce perceived costs: It could also help dynamically align the expectations of investors, international financial institutions (IFIs), and economic stakeholders toward a shared perception that low-carbon and resilient pathways are collectively profitable. In such a context, joint expectations around a desirable transition scenario would give all actors, including governments, strong incentives to make that scenario as cost-effective as possible.

- Enhancing market differentiation: A revised risk assessment for the no-transition scenario could also increase pricing differentiation across market triggered-based financial instruments, depending on whether they support BAU or transition pathways. This could

also facilitate the development of hedging instruments, as multiple future trajectories could be explicitly priced based on their expected impacts.

Nonetheless, shifting from a "transition risk" to a "no-transition" risk mindset is neither straightforward nor immediate. It depends on the credibility of international climate goals, political will at various governance levels, and concrete domestic commitments and reforms – supported by enabling regional and international conditions.

The following enabling processes, while not sufficient on their own, could help reveal the full implications of no-transition scenarios and highlight the potential benefits of alternative transition pathways:

- Fully leveraging existing processes to define medium and long-term national transition strategies, such as Nationally Determined Contributions (NDCs) and Long-Term Strategies (LTSs).

- Strengthening political commitments through clear, measurable national targets and objectives.

- Engaging key economic and financial stakeholders - including ministries of finance, line ministries, central banks, and national development banks - to set explicit targets and provide incentives for the transition. Joint scenario-building exercises can help design concrete pathways, assess their impacts and costs, and guide medium and long-term commitments.

- Implement economic and financial policies that enable low-carbon and resilient pathways while preserving macroeconomic stability (see some examples in the following sub-sections).

Implementing these processes would help clarify expectations and gradually rebalance the risk-opportunity equation between maintaining minimal-change, carbon-intensive scenarios and investing in low-carbon and resilient alternatives. The next sub-sections present several breakthrough measures and practical shifts that could help accelerate this transformation.

Rethinking financial safety nets to share the costs of climate change

When extreme weather events occur, the burden of climate-related damage costs – including the destruction of private and public capital, loss in income generation, and recovery support – can be substantial for affected populations. For countries particularly exposed to recurrent and intense extreme weather events, rethinking the architecture of climate damage management at national, regional and international levels could help identify a broader range of instruments adapted to specific contexts. The following areas of reform could generate consensus:

Area 2: Preserving solvency for financially vulnerable households and Micro, Small and Medium Entreprises (MSMEs).

In the most affected countries, as a first line of defense, a comprehensive "financial shield" could be designed to protect households and MSMEs from the potentially high costs of climate damages. This may include public financial facilities to absorb short-term losses – such as automatic public guarantees, temporary tax relief, liquidity support, or the suspension of loan repayments - and to facilitate reconstruction and recovery in the medium term.

In countries where insurance instruments already exist, expanding both public and private insurance coverage for households and MSMEs to include damages related to extreme weather event is also essential to accelerate asset reconstruction and prevent widespread insolvency. Such instruments enable the rapid transfer of risk and associated financial losses to better-capitalized institutions with stronger absorption capacity. In low- and middle-income countries, preserving the solvency of economic agents that lack financial buffers to withstand major shocks may be considered a top priority.

Area 3: Building a structured risk absorption chain anchored in solvent national and regional entities.

A second line of defense should focus on strengthening national financial architecture to enable the transfer of climate-related risks to the most solvent institutions. Existing risk-transfer and risk-sharing mechanisms - including public and private insurance schemes, sectoral or macroeconomic stabilization funds, and market-based hedging instruments - aim to prevent insolvency within the risk absorption chain and to enable rapid recovery at the microeconomic level (GIZ, 2016).

Ultimately, the risk absorption chain should be backed by the most solvent entities at the national or regional level that can support the losses associated with such idiosyncratic risks. This could include national or regional development banks, dedicated risk-pooling mechanisms (such as the CCRIF for the Caribbean Islands or ARC in Africa), central banks, and other public entities[15].

This architecture could be structured around an "Insurer of last resort" at the national or regional level, mandated to absorb financial losses associated with physical climate risks (Pappas 2025). Such a risk absorption chain could help reduce climate vulnerability and macroeconomic uncertainty around viable pathways, especially in the most exposed countries - thereby limiting the potential adverse effects of self-reinforcing feedback loops related to risk perception, and avoiding transition wall situations.

Area 4: An international public insurer to support the "uninsurable" climate-related risks.

In the most vulnerable countries, national and regional risk absorption chains may be unable to absorb climate-related risks without endangering the financial stability of institutions along the chain. In such cases, they could be backed by a public international insurer of last resort.

[15] For instance, see the Consorcio de Compensación de Seguros in Spain.

Through risk transfer mechanisms – such as reinsurance instruments, catastrophe bonds, or guarantees - the residual risks that solvent national or regional entities cannot bear would be absorbed by this international entity. Its business model would need to reflect the specific nature of climate-related risks, particularly the uninsurable portion of the risk distribution (Linnerooth-Bayer et al., 2009). It should also incorporate climate justice principles, recognizing that the most exposed countries should not bear the cost of climate-related risks resulting from increasing global emissions for which they are least responsible. Considering an ability-to-contribute criterion, coupled with an international solidarity mechanism in the structuring of this insurance framework, would be essential to make the business model both fair and financially viable.

For instance, this mechanism could comprise two complementary structures:

- A Global Public Insurance Fund, responsible for aggregating the risks faced by vulnerable countries and pricing them according to actuarial techniques - replicating, at a larger scale and on a subsidiarity basis, what is already in place in regional risk pools.

- A Solidarity Facility, tasked with subsidizing the insurance premiums paid by vulnerable countries and offering reinsurance products on a non-profit basis, as a global common good[16].

Various alternative funding mechanisms could be explored to finance this Solidarity Facility, including international solidarity levies or the allocation of dedicated Special Drawing Rights (SDRs).

Rethinking the mandate of public financial institutions in transitioning carbon-intensive and ecologically damaging value chains

Many financial institutions, both public and private, are already committed to supporting greenfield investments in sectors such as renewable energy, water, and agriculture (Marodon et al., 2025).

However, far fewer are explicitly engaged in financing the transition of highly carbon-intensive and ecologically damaging value chains. As discussed above regarding mechanisms to absorb physical risks, it is equally essential to build a structured risk absorption chain for transition risks embedded in these sectors.

Indeed, many of these value chains constitute strategic economic assets (e.g., in the energy sector), are labor-intensive, or significantly contribute to GDP. Transitioning them entails substantial economic and social implications, and thus carries high political sensitivity. Ignoring this essential dimension of the transition could lead to lock-in effects, due to inextricable economic and social trade-offs, while propagating uncertainty across the broader economy and creating chronic financial fragilities among both public and private firms.

[16] This proposal comes from an unpublished work with Laurence Seca (AFD).

Area 5: Mobilize the most solvent public financial institutions at national and regional levels to actively absorb transition risks in carbon-intensive and ecologically damaging value chains.

Public financial institutions could play a central role in managing transition risks in these sectors. Dedicated risk appetite frameworks, appropriate capitalization and transition funds, and guarantee mechanisms, - combined with targeted technical assistance - could be packaged and offered to exposed companies. This would facilitate the necessary structural transformations while ensuring that transition pathways remain credible and orderly.

Several financial instruments already exist to enable the gradual restructuring of private and public companies through credible transition plans and, where necessary, loss-absorption mechanisms. For instance, the mandates of public financial institutions could explicitly include supporting the decommissioning of fossil fuel-based energy producers (Kachi et al., 2024), restructuring highly carbonized supply chains, or preventing deforestation. Such operations often require long-term concessional funding combined with strategic and technical advisory services, as the transformations involved are complex and resource-intensive. While implementing this mandate at the national level, these institutions could also be supported by collective efforts at regional and international levels. Structuring such a risk absorption framework to address transition risks could generate positive feedback loops that reduce uncertainty and create incentives for investment, thereby helping to overcome transition wall situations.

Rethinking the hierarchy of financial commitments

Much has been written about sovereign debt relief mechanisms and debt for development swaps. The objective here is not to directly add to this literature, but rather to build on it to discuss the hierarchy and structure of financial commitments associated with both market-based and non-market-based financing instruments.

In a context of tight financial and fiscal constraints, different types of financial commitments increasingly compete with one another, while debt service continues to absorb a growing share of fiscal expenditures (UNCTAD, 2024). At the same time, the deepening interlinkages between debt, climate and nature dynamics call for a more comprehensive and systemic approach to transition financing, in order to avoid self-reinforcing vicious cycles (ERDNC, 2025).

Against this backdrop, a form of “conflict of seniority” may emerge among various financial commitments – regardless of their legal status – reflecting growing tensions between short-term repayment obligations and long-term sustainability objectives.

Area 6: As a contribution to orderly addressing this “conflict of seniority”, it is proposed to explore the feasibility of granting sustainability-linked financial commitments a senior status over conventional debt-related commitments.

Such a hierarchy could help both investors and borrowers prioritize the allocation of financial resources toward commitments more closely aligned with sustainable

development pathways. For market-based instruments, through induced pricing adjustments, this approach would also be consistent with the argument developed in sub-section 1, namely that transition-aligned pathways should be perceived as less risky than business-as-usual trajectories and their associated traditional debt instruments.

Finally, a redefined hierarchy of financial commitments could strengthen incentive alignment between investors and borrowers, thereby accelerating the development and iterative improvement of sustainability-linked financing instruments.

Conclusion

This paper argues that a growing number of emerging and developing economies are facing a “transition wall” - a situation in which countries simultaneously confront (i) massive investment needs to mitigate and adapt to the impacts of climate change and nature loss, and (ii) limited capacity to mobilize resources and implement the required investments to transition toward a low-carbon and resilient economy.

Addressing this transition wall requires rethinking prevailing analytical frameworks, financing practices, and approaches to policy design. It also calls for revisiting the political economy of investment policies at the country level, the ways transition scenarios are constructed within a rapidly evolving macroeconomic and ecological context, and the role of financial institutions and international cooperation in both creating opportunities and managing the costs of the transition. Among others, this paper argues for scaling up solidarity mechanisms in diverse forms to match the scale of the ecological transformation ahead.

Further research could further elaborate on the proposals outlined in the final section and assess their feasibility and potential impacts. In addition, a more comprehensive analysis of the political economy of climate and nature investment policies would help better understand and address the persistence of underinvestment trajectories. Finally, a systematic and empirical exploration of feedback loops between macroeconomic, nature and climate systems would be of particular interest to develop refined decision-support tools for policymakers.

Annex 1 : List of sample countries

Countries	Country code
Afghanistan	AFG
Albania	ALB
Algeria	DZA
Angola	AGO
Argentina	ARG
Armenia	ARM
Australia	AUS
Austria	AUT
Azerbaijan	AZE
Bahamas, The	BHS
Bahrain	BHR
Bangladesh	BGD
Barbados	BRB
Belarus	BLR
Belgium	BEL
Belize	BLZ
Benin	BEN
Bhutan	BTN
Bolivia	BOL
Bosnia and Herzegovina	BIH
Botswana	BWA
Brazil	BRA
Brunei Darussalam	BRN
Bulgaria	BGR
Burkina Faso	BFA
Burundi	BDI
Cabo Verde	CPV
Cambodia	KHM
Cameroon	CMR
Canada	CAN
Central African Republic	CAF
Chad	TCD
Chile	CHL
China	CHN
Colombia	COL
Comoros	COM
Congo, Dem. Rep.	COD
Congo, Rep.	COG
Costa Rica	CRI
Cote d'Ivoire	CIV
Croatia	HRV
Cuba	CUB
Curacao	CUW
Cyprus	CYP
Czechia	CZE
Denmark	DNK
Djibouti	DJI
Dominica	DMA
Dominican Republic	DOM
Ecuador	ECU
Egypt, Arab Rep.	EGY
El Salvador	SLV
Equatorial Guinea	GNQ
Eritrea	ERI
Estonia	EST
Eswatini	SWZ
Ethiopia	ETH
Fiji	FJI
Finland	FIN
France	FRA
Gabon	GAB
Gambia	GMB
Georgia	GEO
Germany	DEU
Ghana	GHA
Greece	GRC
Grenada	GRD
Guatemala	GTM
Guinea	GIN
Guinea-Bissau	GNB
Guyana	GUY
Haiti	HTI
Honduras	HND
Hungary	HUN
Iceland	ISL
India	IND
Indonesia	IDN
Iran, Islamic Rep.	IRN
Iraq	IRQ
Ireland	IRL
Israel	ISR
Italy	ITA
Jamaica	JAM
Japan	JPN
Jordan	JOR
Kazakhstan	KAZ
Kenya	KEN
Kiribati	KIR
Korea, Rep.	KOR
Kosovo	XKX
Kuwait	KWT
Kyrgyz Republic	KGZ
Lao PDR	LAO
Latvia	LVA
Lebanon	LBN
Lesotho	LSO
Libya	LBY
Lithuania	LTU
Luxembourg	LUX
Macao SAR, China	MAC
Madagascar	MDG
Malawi	MWI
Malaysia	MYS
Maldives	MDV
Mali	MLI
Malta	MLT
Marshall Islands	MHL
Mauritania	MRT
Mauritius	MUS
Mexico	MEX
Micronesia, Fed. Sts.	FSM
Moldova	MDA
Mongolia	MNG
Montenegro	MNE
Morocco	MAR
Mozambique	MOZ
Namibia	NAM
Nepal	NPL
Netherlands	NLD
New Zealand	NZL
Nicaragua	NIC
Niger	NER
Nigeria	NGA
North Macedonia	MKD
Norway	NOR
Oman	OMN

Pakistan	PAK	Ukraine	UKR
Palau	PLW	United Arab Emirates	ARE
Panama	PAN	United Kingdom	GBR
Paraguay	PRY	United States	USA
Peru	PER	Uruguay	URY
Philippines	PHL	Uzbekistan	UZB
Poland	POL	Vanuatu	VUT
Portugal	PRT	Viet Nam	VNM
Puerto Rico	PRI	West Bank and Gaza	PSE
Romania	ROU	Yemen, Rep.	YEM
Russian Federation	RUS	Zambia	ZMB
Rwanda	RWA	Zimbabwe	ZWE
Samoa	WSM		
Sao Tome and Principe	STP		
Saudi Arabia	SAU		
Senegal	SEN		
Serbia	SRB		
Seychelles	SYC		
Sierra Leone	SLE		
Singapore	SGP		
Slovak Republic	SVK		
Slovenia	SVN		
Solomon Islands	SLB		
Somalia	SOM		
South Africa	ZAF		
South Sudan	SSD		
Spain	ESP		
Sri Lanka	LKA		
St Vincent and the Grenadines	VCT		
Sudan	SDN		
Sweden	SWE		
Switzerland	CHE		
Syrian Arab Republic	SYR		
Tajikistan	TJK		
Tanzania	TZA		
Thailand	THA		
Timor-Leste	TLS		
Togo	TGO		
Tonga	TON		
Trinidad and Tobago	TTO		
Tunisia	TUN		
Turkey	TUR		
Turkmenistan	TKM		
Uganda	UGA		

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