



DERA 2.0

Country and Sector Model Report

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Acronyms

Acronym	Meaning
BII	British International Investment
DEG	Deutsche Investitions- und Entwicklungsgesellschaft mbH
DFI	Development Finance Institution
ECB	European Central Bank
ECI	Economic Complexity Index
EVI	Economic Vulnerability Index
FAO	Food and Agriculture Organisation
FD	Financial Development
FDI	Foreign direct Investment
FII	Financial Inclusion Index
GDP	Gross Domestic Product
GNI	Gross National Income
HIC	High Income Country
ICT	Information and Communication Technologies
IDA	International Development Assistance
IEA	International Energy Agency
IFC	International Finance Corporation
ILO	International Labour Organisation
IMF	International Monetary Fund
ISP	Internet Service Providers
ITU	International Telecommunications Union
IWRM	Integrated Water Resources Management
LCOE	Levelized Cost of Energy
LDC	Least Developed Country
LPI	Logistics Performance Index
OECD	Organisation for Economic Cooperation and Development
PCI	Productive Capacities Index
PCM	Private Capital Mobilisation
PPP	Purchasing Power Parity
PV	Photovoltaic
PVOUT	Photovoltaic Power Potential
SDG	Sustainable Development Goals
TCD	Trade Concentration and Diversification
UMIC	Upper Middle-Income Country
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WBG	World Bank Group

Executive Summary

By 2022, DEG managed a substantial portfolio of approximately €9.9 billion. The organization is ambitiously aiming for a greenhouse gas-neutral portfolio by 2040. This objective underscores DEG's dedication to investments that significantly contribute to development and the SDGs, by offering long-term financial assistance to companies for expansion and modernization. The investment tools employed range from loans and equity to mezzanine finance and guarantees.

The Development Effectiveness Rating (DERa) tool, used by DEG, is a crucial instrument for assessing the impact of these investments. The DERa tool employs theories of change to establish the relationship between investments and their intended impacts, covering critical areas such as job creation, income augmentation, market and sector development, environmental responsibility, and community benefits. It enables investment officers to measure these impacts using predefined indicators, setting a baseline, and monitoring the lifecycle of investments.

The report proposes a new Country and Sector model for DEG's new DERa 2.0, an updated system necessitated by DEG's evolving investment strategy and the discontinuation of the World Bank's Ease of Doing Business index. The proposed country and sector model for DERa 2.0 is built on the original's foundation, integrating core principles of DEG's five impact goals: Decent Jobs, Local Income, Market and Sector Development, Environmental Stewardship, and Community Benefits. This integration not only ensures continuity with existing investment strategies but also introduces a more nuanced understanding of the economic landscapes in which DEG operates. The new country and sector models are specifically designed to reflect recent developments in global economic scenarios, focusing particularly on aspects such as economic vulnerability, additionality, and the capacity for transformative impact.

The report elaborates on the enhancements made to the original country and sector model in DERa 1.0. This includes integrating economic transformation metrics aligned with DEG's impact goals. It also explains the new country and sector models, detailing the indicators used for assessment and emphasizing the integration of DEG's impact goals with these models. This ensures that investments are targeted towards countries based on their economic vulnerability, additionality needs, and capacity for economic transformation, and directed towards sectors that align with DEG's impact goals. The annexes of the report provide a detailed function of these models.

There are three indicator categories for the Country Model: Economic Vulnerability, Additionality, and Economic Capacity. These three categories together provide a country score which offers a comprehensive understanding of the economic challenges and opportunities of nations globally.

1. **Economic Vulnerability:** This indicator category assesses the susceptibility of a nation to external economic shocks, which could be due to factors like dependency on a limited range of exports, sensitivity to global market fluctuations, or political instability. Understanding economic vulnerability helps in identifying nations that may benefit the most from targeted investments, particularly in bolstering economic resilience.

2. **Additionality:** This indicator category refers to the extra value or benefits that DEG's investments bring to a country that would not have occurred without its involvement. This might include job creation, technology transfer, or improved market access. It is a crucial measure to ensure that the investments are not just profitable but also contribute significantly to the development of the host country.
3. **Economic Capacity:** This indicator category evaluates a nation's ability to utilize investments effectively for sustainable growth. Factors such as the existing infrastructure, human capital, legal and regulatory frameworks, and the overall economic health of the country are considered. A robust economic capacity means a higher likelihood of successful and impactful investment outcomes.

The three country model indicator categories each include multiple sub-indicators with an aim to offer a comprehensive view of the economic scenarios in various nations, allowing DEG to tailor its investment strategies to meet specific needs and challenges.

Country Model Indicators	Weights	Sources
Vulnerability		
Gross National Income per Capita	50%	World Bank
Economic Vulnerability Index (EVI)	50%	UNDESA
Additionality		
Financial Development Index (FDI)	50%	International Monetary Fund
Financial Inflow Index (FII)	50%	World Bank
Economic Capacity		
Trade Concentration and Diversification Index (TCD)	25%	UNCTADStat
Labour Productivity	25%	ILO's ILOStat
Structural Change (part of the Product. Capacity Index)	25%	UNCTAD
Economic Complexity Index	25%	Atlas of Economic Complexity

The Sector Model is equally detailed, highlighting indicators for various sectors like Energy, ICT, Transport Infrastructure, Finance, and Water Management. These sectors play a critical role in sustainable economic development.

1. **Energy:** This sector's indicators evaluate the potential for renewable energy generation and economic viability. It includes metrics like the average practical potential for solar and wind energy (measured in kWh/kWp/day and kWh/Capita, respectively) and the Levelized Cost of Energy (LCOE). These indicators are weighted to reflect their importance in assessing a country's energy sector potential and performance.
2. **Information and Communication Technology (ICT):** Indicators in this sector focus on the availability and affordability of digital services. This includes the number of internet service providers, cost benchmarks for fixed-broadband and mobile cellular services, and the inclusion of broadband in universal service frameworks. The ICT sector's performance is also evaluated in terms of its contribution to the economy.
3. **Transport Infrastructure:** This area measures the quality and effectiveness of a country's transport systems and logistics. The Logistics Performance Index, which assesses the quality of trade and transport-related infrastructure, is a key indicator. The sector's overall performance is gauged by its impact on facilitating trade and improving mobility.

4. **Finance:** This sector's metrics gauge the accessibility and depth of financial services, including the extent of domestic credit provided to the private sector by banks as a percentage of GDP, and the accessibility of financial institutions and markets. These indicators help assess the health and inclusiveness of a country's financial system.
5. **Water Management:** Indicators here assess the management and efficiency of water use, focusing on the progress in integrated water resources management and water use efficiency (measured in USD/m³). These metrics are critical for understanding a country's effectiveness in managing its water resources sustainably.

Sector Model Indicators	Indicator Weight	Sources
Energy		
<i>Average practical potential (PVOU Level 1, kWh/kWp/day PLUS Wind Generation KWh/Capita), long-term</i>	30%	World Bank + Solargis
<i>LCOE</i>	30%	World Bank + Solargis
<i>PCI – Energy</i>	40%	UNCTAD Stats, updated yearly
ICT		
<i>Number of internet service providers</i>	15%	ITU Data Hub, updated yearly
<i>Fixed-broadband Internet basket</i>	15%	ITU Data Hub, updated yearly
<i>Mobile cellular data and voice high-consumption basket</i>	15%	ITU Data Hub, updated yearly
<i>Broadband services part of universal access</i>	15%	ITU Data Hub, updated yearly
<i>PCI – ICT</i>	40%	UNCTAD Stats, updated yearly
Transport Infrastructure		
<i>Logistics performance index: Quality of trade and transport-related</i>	40%	World Bank, updated 2022
<i>PCI transport</i>	60%	UNCTAD Stats, updated yearly
Finance		
<i>Domestic credit to private sector by banks (% of GDP)</i>	33%	World Bank, updated 2023
<i>Financial Institutions Access</i>	33%	World Bank, updated 2023
<i>Financial Market Access Index</i>	33%	World Bank, updated 2023
Water Management		
<i>Progress on Integrated Water Resources Management</i>	75%	UN Water Database, updated 2020
<i>Water use efficiency (USD/m³)</i>	25%	Aqueduct, updated yearly

Each of these sectors plays a crucial role in sustainable economic development. By closely monitoring and evaluating these sector-specific indicators, DEG can ensure that its investments not only contribute to the economic growth of a country but also align with broader developmental objectives like environmental sustainability, social inclusion, and improved quality of life. This detailed approach in the Sector Model, aligned with the comprehensive analysis provided by the Country Model, enables DEG to make more informed, impactful, and sustainable investment decisions.

Additionally, the report provides an overview of strategies and approaches adopted by other Development Finance Institutions (DFIs) like BII, FMO, Norfund, and Swedfund. This context is essential for understanding the updated DERA toolkit's place in the broader landscape of development finance. The report concludes by underscoring the importance of the integration and synergy between the Country and Sector Models in DERA 2.0, emphasizing how this comprehensive framework maximizes the impact of DEG's investments.

The proposed Country and Sector Model for DERA 2.0 maintains the basic structure of the original model, enhancing rather than replacing it. This approach ensures continuity with existing investments and familiarity for DEG's investment and impact evaluation officers. The model undergoes significant updates and expansions, including the integration of economic transformation metrics, as these are more aligned with DEG's five impact goals.

1. Introduction

DEG (Deutsche Investitions- und Entwicklungsgesellschaft mbH), a subsidiary of KfW Bankengruppe, serves as the German Government's Development Finance Institution (DFI). Its primary role is to fund investments in private enterprises within developing and emerging nations. By 2022, DEG managed a portfolio of about €9.9 billion, focusing on enhancing the private sector's ability to foster sustainable economic progress and improve living standards. This is achieved by offering long-term financial assistance to both new and established companies, infrastructure projects, financial institutions or investment funds, to finance their expansion or fund modernization processes. DEG's investment tools range from loans and equity to mezzanine finance and guarantees. Aiming for a greenhouse gas-neutral portfolio by 2040, DEG also strives for investments that significantly contribute to development and Sustainable Development Goals (SDGs).

The Development Effectiveness Rating (DERA) tool is utilised to assess the impact of these investments. DERA employs theories of change to establish the relationship between investments and their intended impacts, covering five areas: decent job creation, local income augmentation, market and sector development, environmental responsibility, and community benefits. DERA helps investment officers to measure these impacts using predefined indicators, setting a baseline and monitoring the lifecycle of investments. Presently, DERA evaluates based on location and sector, like the 'market and sector development' category. However, DEG is updating its investment strategy, necessitating a new system, the DERA 2.0, to categorize country and sector needs for foreign investment. This is partly due to the discontinuation of the World Bank's Ease of Doing Business index and outdated data in the current sector model.

In this report we present a potential Country and Sector model for the updated DERA 2.0. The proposed country and sector model builds on the foundation of the original DERA, this version marks a significant stride in DEG's commitment to fostering sustainable economic development through informed and impactful investments.

This document provides an approach to update the Country and Sector model, aiming to integrate the core principles of DEG's five impact goals – Decent Jobs, Local Income, Market and Sector Development, Environmental Stewardship, and Community Benefits. This integration not only ensures continuity with DEG's existing investment strategies but also introduces a more nuanced understanding of the economic landscapes in which they operate. The new country and sector models are designed to reflect the latest developments in global

economic scenarios, focusing particularly on economic vulnerability, additionality, and the capacity for transformative impact.

The first section of the report outlines the enhancements made to the original country and sector model in DERA 1.0, ensuring continuity with existing investments. The model integrates economic transformation metrics aligned with DEG's five impact goals: Decent Jobs, Local Income, Market and Sector Development, Environmental Stewardship, and Community Benefits.

The report subsequently explains the new country and sector models, detailing the indicators used for assessment. It emphasizes the integration of DEG's impact goals with these models, ensuring that investments are targeted towards countries based on their economic vulnerability, additionality needs, and capacity for economic transformation, as well as directed towards sectors that align with DEG's impact goals. The annexes explain the function of the models in more detail.

The next section delves into specific indicators for the Country Model such as Economic Vulnerability, Additionality, and Economic Capacity, providing a comprehensive understanding of the economic challenges and opportunities of nations globally. We subsequently conduct the same exercise for the Sector Model, detailing indicators for various sectors like Energy, ICT, Transport Infrastructure, Finance, and Water Management, highlighting their critical role in sustainable economic development.

The report then provides an overview of strategies and approaches adopted by other DFIs (Development Finance Institutions) like BII, FMO, Norfund, and Swedfund is provided, giving context to the updated DERA toolkit. Finally, the report concludes by summarizing the importance of the integration and synergy between the Country and Sector Models in DERA 2.0, emphasizing how this comprehensive framework maximizes the impact of DEG's investments.

2. Our Approach

Our proposed Country and Sector Model for DERA 2.0 maintains the basic structure of the original country and sector model, enhancing it rather than replacing it. This is to ensure continuity with existing investments and familiarity for DEG's investment and impact evaluation officers. Despite this, the model undergoes significant updates and expansions, including integrating economic transformation metrics, as these are more aligned with DEG's five impact goals:

1. **Decent Jobs:** Focused on creating and safeguarding formal employment in compliance with ILO standards. This goal recognizes the importance of jobs not only for providing income but also for boosting living standards, raising productivity, and fostering social cohesion. The emphasis is on both the number and the quality of jobs, aiming for decent work conditions as defined by SDG 8.
2. **Local Income:** This goal involves increasing local income to enhance self-determined decisions of individuals and institutions in developing countries. The private sector plays a critical role here, especially when their business models are strongly linked to the local context, such as employing local personnel, paying local taxes, and sourcing from local suppliers. This approach aligns with the UN 'Agenda 2030', emphasizing the mobilization and effective use of domestic resources for achieving the SDGs.

3. **Market and Sector Development:** This goal recognizes that the impact of business activities varies depending on the country of operation and the sector. Investments in less developed countries or in sectors that enable further private sector development are likely to have a higher impact. Key aspects of this goal include enhancing competition and fostering innovation, contributing to SDG 9 (innovation).
4. **Environmental Stewardship:** Acknowledging that a sizeable portion of the global private sector depends on natural resources, this goal emphasizes the importance of environmental and climate protection and resource efficiency. Companies are encouraged to comply with international environmental standards, implement sustainable operations, and potentially engage in renewable energy production.
5. **Community Benefits:** This goal highlights the role of entrepreneurs and businesses as active societal members. It goes beyond the principle of "do no harm" to encouraging businesses to "do good" by engaging with local communities. This engagement can lead to mutual benefits, such as securing a local license to operate for businesses and providing communities with increased amenities and opportunities.

These goals collectively aim to foster sustainable development and positive community impact through responsible and impactful private sector involvement in developing and emerging markets.

Integrating DEG's five impact goals with the proposed Country and Sector Models in DERA 2.0 is pivotal for a holistic and impactful investment strategy. This synergy ensures that DEG's investments are not only targeted towards countries based on their economic vulnerability, additionality needs, and capacity for economic transformation but also directed towards sectors that align with these impact goals. Such an approach facilitates a more nuanced assessment of potential investments, informed decision-making, and effective monitoring and evaluation.

This integration allows DEG to dynamically adapt its strategies to the specific needs of a sector within the context of a country's economic situation, leveraging each country's strengths for sector development and balancing risk with impact.

It also ensures that DEG's investments are not only targeted towards countries that can most benefit from them based on their economic vulnerability, additionality needs, and capacity for economic transformation, but also directed towards sectors that align with DEG's five impact goals.

1. **Aligned Impact Assessment:** Both models are designed to operate in harmony, ensuring that the assessment of a potential investment considers both the country's broader economic context and the specific sector's impact potential. This dual-layered approach allows for a more nuanced understanding of the potential impacts of an investment.
2. **Comprehensive Decision-Making:** By incorporating both country-specific and sector-specific factors, DEG can make more informed decisions. Investments are selected not only based on a country's need or a sector's potential but on a combination of both, ensuring a higher impact per investment.
3. **Enhanced Monitoring and Evaluation:** The integration facilitates better monitoring and evaluation processes. By understanding the dynamics of both the country and the sector, DEG can more accurately measure the impact of its investments against its

goals, such as job creation, income growth, market development, environmental stewardship, and community benefits.

4. **Dynamic Adaptability:** The interconnected nature of the models allows for greater adaptability to changing global and regional economic landscapes. This flexibility ensures that DEG's investment strategies remain relevant and effective in diverse circumstances.
5. **Sector-Country Specific Strategies:** The synergy between the two models enables the development of strategies tailored to the specific needs of a sector within the context of a country's economic situation. For example, investing in renewable energy in a country with high economic vulnerability can have a different impact and require different strategies than in a more stable economic environment.
6. **Leveraging Country Strengths for Sector Development:** The model also allows for leveraging a country's particular strengths or needs to develop sectors that are strategically aligned with both the country's and DEG's objectives. This approach ensures that investments are not only impactful but also sustainable and growth-oriented.
7. **Balancing Risk and Impact:** Finally, the integration of the two models helps in balancing risk and impact. While some countries might present higher economic risks, their potential for sector development and impact might justify the investment, aligning with DEG's goals of fostering sustainable development.

Overall, the integration and synergy between the Country and Sector Models in DERA 2.0 provide a comprehensive framework for DEG to maximize the impact of its investments, ensuring that they contribute effectively to both economic transformation and sustainable development.

The Country Model

The current DERA toolkit currently employs a methodology that focuses on both country and sector levels. This approach primarily hinges on data from the World Bank's Ease of Doing Business Index (EoDB), specifically using its 'Distance to Frontier' score. This score is an aggregate measure that combines all 41 EoDB indicators, comparing a country's performance in each area to that of the top-performing country. The result is a comprehensive 'Distance from the Frontier' score. However, with the discontinuation of the EoDB in 2021, DERA can no longer utilize this index for its assessments.

In response to this challenge, we carried out two key processes. The first involved a review of the EoDB index to determine which aspects of the 'Distance to Frontier' score can be replicated using alternative indexes or databases. Additionally, we identified which elements required replacement. By emulating parts of the EoDB, we aim to maintain a level of consistency between projects previously assessed under the existing DERA toolkit and those that will be evaluated with the updated toolkit.

An updated country selection model should help DEG investors understand whether the investment is being carried in a country and sector that would benefit from a DEG investment. We thereby divided the three main impact channels into three indicator categories: economic vulnerability, additionality and economic capacity, each of these categories aims to capture a different facet of the development impact potential of an investment within a given country:

- 1) **Economic Vulnerability:** Targeting finance to the most vulnerable areas of our world. Investments targeted at economically vulnerable countries aim to mitigate these vulnerabilities by boosting economic stability, creating sustainable job opportunities, and enhancing resilience against environmental and market shocks.
- 2) **Additionality:** Raising access to finance for economies that cannot access finance within their domestic markets or via existing resources. The focus here is on raising access to finance for economies that struggle to secure finance domestically or through existing resources. Investments in such countries aim to fill financial gaps, support local businesses, and stimulate economic activities.
- 3) **Economic Capacity:** Transforming countries whose economic base isn't productively serving their transformation. The aim is to invest in countries that are on the path to economic transformation but require support to enhance their productive capacities. By focusing on these areas, DEG investments can facilitate a shift towards more complex, higher-value economic activities, thereby promoting sustainable growth and development.

The updated country selection model is designed to guide DEG investments towards countries where they can have the most meaningful impact. By evaluating countries based on their economic vulnerability, additionality needs, and capacity for economic transformation, DEG can effectively align its investments with its overarching goals of promoting sustainable development and economic growth.

The Sector Model

Relative to the country model, the sector model approach was based on the main sectors where DEG undertakes its investments. The updated sector model in DERa 2.0 is designed to complement the country model, focusing on the specific sectors where DEG invests. This model is critical in identifying how sector-specific investments can align with DEG's five impact goals: creating decent jobs, increasing local incomes, developing markets and sectors, improving environmental stewardship, and providing community benefits. The sector model integrates the latest economic transformation metrics, enabling a deeper understanding of each sector's potential impact.

Energy Sector

1. **Economic Impact and Job Creation:** Investment in energy, assessed through indicators such as PVOUT, wind energy generation and LCOE, has significant potential for job creation, particularly in solar and wind energy sectors. These jobs range from manufacturing to installation and maintenance, contributing to local income growth.
2. **Market Development and Environmental Stewardship:** The transition to renewable energy sources aligns with environmental stewardship goals. Using the PCI - Energy, DEG can evaluate how investments contribute to reducing carbon emissions and fostering sustainable energy markets.

ICT Sector

1. **Developing Markets and Technology Adoption:** Investment in the ICT sector, gauged through indicators such as the number of internet service providers and broadband accessibility, is vital for market development. Enhanced ICT infrastructure

can lead to greater digital literacy, opening up new market opportunities and fostering innovation.

2. **Community Benefits:** Improved ICT infrastructure can significantly benefit communities by providing greater access to information, education, and health services, thus aligning with DEG's goal of community development.

Transport Infrastructure

1. **Facilitating Trade and Economic Growth:** Indicators like the Global Quality Infrastructure Index and Logistics Performance Index demonstrate the impact of transport infrastructure on trade efficiency and economic growth. Investments in this sector can significantly improve a country's connectivity and competitiveness.
2. **Job Creation and Local Income Increase:** Developing transport infrastructure can create numerous jobs in construction, maintenance, and logistics, directly impacting local income levels.

Finance Sector

1. **Access to Finance and Market Development:** Financial indicators, such as Domestic Credit to Private Sector and Financial Market Access Index, highlight the importance of a robust financial sector in providing access to finance, crucial for SMEs and entrepreneurs. Investments in this sector can stimulate economic growth and market development.
2. **Enhancing Economic Capacity:** A strong financial sector underpins economic capacity, supporting various industries and contributing to overall economic stability and growth.

Water Management

1. **Environmental Stewardship and Sustainable Development:** Efficient water management, measured through indicators like Integrated Water Resources Management, is key for environmental sustainability. Investments in this sector can contribute to better water conservation practices and sustainable usage.
2. **Community Impact:** Improving water efficiency and management directly benefits communities, particularly in agriculture-dependent regions, supporting DEG's goal of providing community benefits.

The sector model in DERA 2.0 is designed to provide a nuanced, sector-specific approach to investments, aligning each sector's potential with DEG's broader impact goals. This model allows for a more targeted assessment of how investments in various sectors can contribute to sustainable economic transformation and the achievement of DEG's objectives.

3. The Country Model

In this section we provide an in-depth analysis of various indicators critical for understanding and assessing the economic challenges and opportunities of nations globally. This analysis is segmented into the three indicator categories: Economic Vulnerability, Additionality, and

Economic Capacity. Each of these categories encompasses a set of specific metrics that together offer a multifaceted view of a country's economic state.

Economic Vulnerability Indicators: This category focuses on two pivotal metrics – Gross National Income (GNI) per capita and the Economic Vulnerability Index (EVI). GNI per capita offers insight into a country's overall economic health and dependence on external financial aid. In contrast, the EVI provides a granular view of a nation's susceptibility to economic and environmental risks through its eight sub-indicators. These indicators collectively address the country's structural economic challenges, exposure to climatic and market changes, and the socio-economic impacts of such vulnerabilities.

Additionality Indicators: This category includes the Financial Development Index (FDI) and the Financial Inflow Index (FII). Both indices, updated as of July 2023, are crucial in understanding the financial robustness and needs of a country. The FDI, developed by the International Monetary Fund (IMF), assesses the maturity of a country's financial institutions and markets. The FII, on the other hand, focuses on the dynamics of financial inflows, including Foreign Direct Investment and remittances. These indicators help determine the vulnerability of a country's financial system and its potential need for additional external finance.

Economic Capacity Sub-Score: This category delves into indicators that gauge a country's economic transformation progress. It includes the Trade Concentration and Diversification Index (TCD), labour productivity, the structural change component of the Productive Capacity Index (PCI), and the Economic Complexity Index (ECI). Each indicator offers a perspective on the country's movement from lower to higher productivity activities, the sophistication of its economic activities, and its potential for sustainable growth and development.

Overall, this section aims to provide a comprehensive understanding of where Development Finance Institutions (DFIs) can most effectively channel their investments to foster economic stability, sustainable development, and resilience against global risks. By examining these metrics in tandem, stakeholders can develop a nuanced understanding of the economic status and potential of different countries, guiding strategic decision-making in global development finance.

Economic Vulnerability

In a world of burgeoning global challenges and economic disparities, understanding the nuanced aspects of a country's vulnerability is crucial for directing financial support where it is most needed. The economic vulnerability category, is a composite metric that evaluates a country's susceptibility to economic and environmental risks, stands at the forefront of this analytical endeavour. This category therefore incorporates two fundamental metrics: **Gross National Income (GNI) per capita** and the **Economic Vulnerability Index (EVI)**, each providing a distinctive lens through which the economic vulnerability of a country could be assessed and addressed.

Gross National Income per Capita is a pivotal metric, representing the total monetary value of all goods and services produced by a nation, including income from abroad, divided by its population count. This figure serves not just as a static snapshot of national wealth, but as a dynamic indicator of economic health, societal wellbeing, and potential dependence on external financial assistance. With the World Bank's timely updates, the latest figures from July 2023 offer a fresh perspective on the global economic landscape. GNI per capita is instrumental in gauging three critical dimensions of a country's economic status, a factor which

plays a significant role in determining the necessity and strategic focus of Development Finance Institution (DFI) investments.

The Economic Vulnerability Index (EVI), on the other hand, provides a more granular view by amalgamating eight sub-indicators that measure a country's exposure to a range of economic and environmental shocks. These include the dependency on agriculture, forestry, and fishing, which are sectors highly sensitive to climatic and market changes; the challenges posed by remoteness and landlockedness; the dangers of relying heavily on a narrow range of export goods; and the socioeconomic instability brought on by fluctuating export demands. Furthermore, the EVI considers the demographic factors that compound vulnerability, such as the proportion of the population residing in low elevated coastal zones or drylands, which are areas particularly prone to the adverse effects of climate change. The EVI also factors in the resilience of agricultural production and the human impact of natural disasters, which are critical for understanding and mitigating the risks associated with environmental and climate-related events.

By examining these metrics in tandem, stakeholders can develop a more nuanced understanding of where DFI investments could be effectively channelled to foster economic stability, promote sustainable development, and enhance resilience against an array of global risks. As the world grapples with unprecedented challenges, the strategic application of these indices is more pertinent than ever, providing a roadmap for international agencies, policymakers, and development practitioners to navigate the complex terrain of global development finance.

Gross National Income per Capita

Gross National Income (GNI) per capita is the monetary value of a country's final income within a given year, divided by its total population. It represents the total amount of money earned by a country's people and its businesses, domestically and abroad. Unlike Gross Domestic Product (GDP), it measures a country's wealth in terms of income rather than output. It is, therefore, a crucial indicator for evaluating a country's economic health and its requirement for Development Finance Institution (DFI) investments.

The country model uses the GNI per Capita as a method to estimate the average wealth of a citizen within the country. Higher wealth countries will be less likely to require DFI investments. The GNI per capita indicator is sourced from the World Bank, it is updated on a yearly basis (July) and was last updated in July 2023.

GNI per capita offers an overview of a country's average income, which can be a valuable measure of economic vulnerability. Countries with a lower GNI per capita are often more susceptible to economic shocks and have a reduced capacity to manage crises, making them primary targets for DFI investments (World Bank, 2023). It can also indicate the level of access to finance within a country. A lower GNI per capita often correlates with less developed financial markets, implying that businesses and individuals in these countries may struggle to access finance domestically (World Bank, 2023). This makes them potential beneficiaries of DFI investments, which aim to supplement domestic resources and improve access to finance. Lastly, GNI per capita can be a useful indicator of a country's economic base and its potential for transformation. Countries with lower GNI per capita may have economies that are not productively serving their transformation, indicating a need for investments that can stimulate economic diversification and growth (World Bank, 2023).

Economic Vulnerability Index

The **Economic Vulnerability Index (EVI)** is a composite indicator used by the United Nations to inform its Least Developed Country (LDC) classification process. It is prepared by the United Nations Department of Economic and Social Affairs (UNDESA) and encompasses a range of indicators that collectively inform on the economic fragility, potential for additional finance, and transformational opportunities within a country, aligning closely with the country model's objectives. The EVI is composed of eight sub-indicators, each of which contributes to the three outcomes as follows:

1. **Share of agriculture, forestry and fishing in GDP:** This indicator helps understand a country's exposure to shocks caused by its economic structure. These sectors are particularly vulnerable to natural and economic shocks. Countries with a high share of these sectors in their GDP may be more vulnerable and thus require targeted finance to build resilience (UN, 2023; Zhang, 2022).
2. **Remoteness and landlockedness:** Both circumstances can inhibit trade and growth by increasing transport costs and limiting economic diversification potential. Countries facing these challenges may require additional finance to overcome these barriers and transform their economies (UN, 2022; UN, 2023).
3. **Merchandise export concentration:** This indicator helps understand the exposure to trade shocks resulting from a concentrated export structure. Countries with a high export concentration may be more vulnerable to global market fluctuations and may benefit from finance aimed at diversifying their export base (UN, 2023; Guillaumont, 2008).
4. **Instability of exports of goods and services:** Instability in exports can hamper sustainable growth. Countries experiencing this instability may require targeted finance to stabilize their export sectors and foster economic transformation (UN, 2023; Guillaumont, 2008).
5. **Share of the population in low elevated coastal zones:** This indicator helps understand how vulnerable the population is to coastal environmental shocks stemming from climate change. Countries with a high share of their population in these zones may require finance aimed at climate change adaptation (UN, 2023; Zhang, 2022).
6. **Share of the population living in drylands:** Higher percentages of people living in highly vulnerable drylands increases the negative impacts of climate change and other shocks. These countries may require targeted finance to build resilience and adapt to climate change (UN, 2023; Zhang, 2022).
7. **Instability of agricultural production:** Countries with highly fluctuating crop production levels are more vulnerable to natural shocks such as droughts and changes to rainfall patterns. Targeted finance in these countries can help stabilize agricultural production and build resilience (UN, 2023; Zhang, 2022).
8. **Victims of disasters:** A greater number of victims of disasters indicates a country's vulnerability to natural disasters, particularly their human impact. Countries with a high number of disaster victims may require additional finance to build resilience and mitigate the impacts of disasters (UN, 2023; Zhang, 2022).

These indicators pinpoint where a country's vulnerabilities lie and where targeted finance can help build resilience. The EVI considers factors like remoteness, landlocked countries, and merchandise export concentration. These aspects reveal the structural economic challenges that can limit a country's access to finance and its ability to diversify economically. Highlighting these issues suggests where additional finance is required to help countries overcome these intrinsic challenges. Finally, the EVI addresses areas that could be economically transformed with the aid of targeted finance. By measuring the instability of exports and the concentration of merchandise exports, the EVI identifies where an economy might be overly reliant on a narrow range of exports, which could be altered to create a more diverse and robust economic foundation conducive to transformative growth.

Additionality

The additionality category forms a pivotal part of evaluating a country's financial system's capacity to support local firms in securing investment finance. It answers a critical question: Can the internal financial systems of a country meet the investment needs of its businesses, or is there a necessity to look beyond borders for development finance institutions (DFIs) to fill the gap? The intricacy of this evaluation is distilled into two distinct yet interconnected components: the **Financial Development Index (FDI)** and the **Financial Inflow Index (FII)**, both of which offer a multi-faceted view of the financial robustness and needs of a country.

The Financial Development Index is a nuanced barometer developed by the International Monetary Fund (IMF) to gauge the maturity of a country's financial institutions and markets. It is an amalgamation of indices that measure depth, access, and efficiency, providing a comprehensive look at the financial health of a nation. Updated annually, the latest figures from July 2023 grant an updated perspective on international financial development. FDI is instrumental in assessing three key areas of a country's financial landscape: its vulnerability to economic fluctuations, the additionality or supplementary financial support it may require, and its potential for transformative economic growth.

Similarly, the Financial Inflow Index acts as a composite score that captures the essence of a country's financial inflow dynamics, with a particular focus on Foreign Direct Investment (FDI) and remittances, both as proportions of the Gross Domestic Product (GDP). Compiled by the World Bank, the FII is a crucial indicator of a country's economic vitality and its receptivity to external financial support. Like the FDI, the FII is pivotal in determining the vulnerability of a country's financial system, the potential need for additional finance, and the capacity for economic transformation.

The intertwined nature of the FDI and FII offers a holistic view of a country's financial landscape, suggesting where DFIs can play a transformative role. The indices evaluate the robustness of financial institutions and markets, the sufficiency of financial inflows, and the overall economic environment. Countries scoring lower on these indices may be more exposed to economic uncertainties and are likely to benefit from strategic financial interventions. These interventions could aim to enhance financial access, augment efficiency, diversify economic activity and contribute to sustainable economic growth.

The additionality category, through the lenses of the FDI and FII, informs the targeted deployment of DFIs. It illuminates the critical role these indices play in identifying which countries are in the greatest need of external financial support and where such interventions can be most effective. In a global economy where the right support can catalyse profound change, understanding and applying the insights from the additionality sub-score is essential for fostering resilience, growth, and prosperity in developing economies.

Financial Development Index

The **Financial Development** index is an International Monetary Fund (IMF) maintained index which shows the relative ranking of countries on the depth access and efficiency of their financial institutions and financial markets, it is an aggregate of the financial institutions index and financial market index. The index is a dataset that contains nine indices that summarize how developed financial institutions and financial markets are in terms of their depth, access, and efficiency. These indices are aggregated into an overall index of financial development.

The Financial Development Index is a comprehensive measure that provides insights into the development of a country's financial institutions and markets. It plays a crucial role in understanding a country's economic development and its need for targeted interventions. The FDI can indicate the level of access to finance within a country. Countries with lower FDI scores may have less developed financial markets, implying that businesses and individuals in these countries may struggle to access finance domestically. This makes them potential beneficiaries of interventions aimed at improving access to finance (World Bank, 2016; IMF, 2016).

Financial institutional quality can have a significant impact on the economy. A study which examines the impact of financial development, institutional quality, and globalization on economic growth in 40 African countries between 1980 and 2014 finds that these factors positively affect long-term economic growth across different income levels. Notably, the interaction of financial development and institutional quality shows a varied effect on growth, indicating their heterogeneous influence across varying income levels (Berhane, 2018). A similar study analyses the effect of institutional quality on Foreign Direct Investment (FDI) inflows in various income-level countries from 1996 to 2016 using the system Generalized Method of Moments (GMM). The findings indicate that institutional quality positively influences FDI across all income groups (Sabir et al., 2019).

With its focus on the depth, access, and efficiency of financial institutions and markets, can help identify countries that are economically vulnerable. Countries with lower FDI scores may have less developed financial systems, making them more susceptible to economic shocks and crises. These countries could be prime targets for interventions aimed at improving their financial systems (World Bank, 2016; IMF, 2016). Finally, the FDI can be a useful indicator of a country's potential for economic transformation. Countries with lower FDI scores may have economies that are not productively serving their transformation, indicating a need for interventions that can stimulate economic diversification and growth (World Bank, 2016; IMF, 2016).

Financial Inflow Index

The Financial Inflow Index is a composite score based on the sum of Foreign Direct Investment inflows (as a percentage of Gross Domestic Product) and remittances inflows (as a percentage of GDP). This is a composite index using two different datasets ('FDI Inflows as a % of GDP' and 'Remittances as a % of GDP') available from the World Development Indicators prepared by the World Bank. Both were last updated in July 2023 and are updated on an annual basis.

The main impact channels of DFI investments on a country work through positive FDI spillover effects (see table 2 below), which, aggregated at the sectoral and national levels, would facilitate knowledge transfers, which, in turn, would increase productivity, facilitate technological transfer (and facilitate local capital deepening and production as initially

highlighted by Borensztein et al., 1998), enhance management techniques, etc., as well as help create jobs, contribute to structural transformation, increase export diversification levels, complement local investments with foreign investment capital and help increase overall technological levels (Alfaro, 2015).

Table 1: FDI Spillover Effects

Outcome	Determinant	Driver
FDI national growth and productivity level	<i>Sector type</i>	FDI into more capital- and technology-intensive sectors as well as FDI into secondary and tertiary sectors results in more productive outcomes than FDI into primary sectors.
	<i>Labour force education</i>	Better-educated labour force increases capacity of FDI to spread positive knowledge and technology absorption spillovers.
	<i>Firm links</i>	Greater links (vertical and horizontal) between firms helps promote FDI impacts. Stronger impacts between vertically linked firms, but horizontal links can also matter.
	<i>Financial development</i>	Availability of deeper/stronger financial markets can positively influence FDI spillover (especially technological adoption) effects.
FDI affecting firm growth and productivity levels	<i>Employee training</i>	More training given to employees increases firm-level absorptive capacity (i.e. technology adoption) but also improves the overall labour pool, increasing other firm productivity levels when employee dispersion occurs.
	<i>Technology and innovation capacity</i>	Firms closer to the technological frontier have greater FDI spillover absorptive capacity and tend to have better productivity outcomes. Similarly, firms better able to carry out R&D activities are more capable of adapting FDI technology to local markets.
	<i>Management systems</i>	Firms with management systems geared towards longer-term outcomes tend to have better FDI productivity spillovers as they are better prepared to invest money in training (or capital) required to facilitate knowledge/technology adoption.

Source: Lemma (2019)

The relationship between remittances as a percentage of GDP and access to finance in a country exhibits a nuanced interplay, which is influenced by the scale of remittance inflows relative to the national economy. Research indicates that when remittances exceed a critical level, identified in various studies as around 13% of GDP on average, they begin to complement formal financial systems. This transition facilitates an increase in formal household bank savings, enhances financial intermediation, and positively influences various indicators of financial development such as domestic credit to the private sector, bank deposits, and liquid liabilities (Azizi, 2020; Ben Naceur et al., 2020; Brown & Carmignani, 2015; Chowdhury, 2011). These dynamics underscore the important role of remittances in shaping the financial landscape of recipient countries, particularly in contexts where they constitute a significant share of the national GDP.

Given the importance of these two metrics the FII is, therefore, a significant measure for understanding a country's financial health and its need for targeted interventions. The FII primarily indicates the level of access to finance within a country. Countries with lower FII scores may have less developed financial markets, implying that businesses and individuals in these countries may struggle to access finance domestically. This makes them potential beneficiaries of interventions aimed at improving access to finance (World Bank, n.d.; IMF, n.d). The FII can also help identify countries that are economically vulnerable. Countries with lower FII scores may have less developed financial systems, making them more susceptible to economic shocks and crises. These countries could be prime targets for interventions aimed at improving their financial systems (World Bank, n.d.; IMF, n.d.). Lastly, the FII can be a useful indicator of a country's potential for economic transformation. Countries with lower FII scores may have economies that are not productively serving their transformation, indicating a need for interventions that can stimulate economic diversification and growth (World Bank, n.d.; IMF, n.d.).

Economic Capacity

The economic capacity category aims to understand how far a country's economic transformation process has progressed. Economic transformation is the movement from lower productivity activities into higher productivity activities, both within and between sectors as well as within firms. Economic transformation also posits the capacity to produce higher complexity goods and increased diversification of exports (see box 1 below).

Box 1. Economic Transformation

Economic transformation is 'the continuous process of (a) moving labour and other resources from lower- to higher-productivity sectors (structural change) and (b) raising within-sector productivity growth' (McMillan et al., 2017). There are three main pathways to economic: (i) moving resources (i.e. labour, capital or policy focus) to more productive or competitive sectors; (ii) promoting the entry or growth of more productive firms; and (iii) improving productivity within firms. Even though most countries would state that the reallocation of resources should follow market principles, market failures may require some push in the right direction by the government (through fiscal policies or changes in the business environment) to channel resources towards desired outcomes (Lemma, 2021).

The economic capacity category serves as an essential gauge for assessing the extent of a country's economic transformation. This transformation is a shift from low to high productivity activities within and across various sectors and firms, encapsulating the transition towards the production of more complex goods and a broadened spectrum of exports. It reflects the dynamism and adaptability of an economy, and more importantly, its potential for sustainable growth and development.

This category incorporates four key indicators, each representing a different dimension of economic capacity: the trade concentration and diversification index (TCD), labour productivity, the structural change component of the Productive Capacity Index (PCI), and the Economic Complexity Index (ECI). Together, these indicators offer a comprehensive picture of a country's economic landscape and its transformation journey.

The TCD index, updated annually in the UNCTADStat database, evaluates the extent to which a country's export portfolio is varied or concentrated. A high concentration signals potential

vulnerability to external shocks and underscores the importance of diversifying the export base to mitigate risks and ensure economic stability.

Labour productivity examines the efficiency of a country's workforce, measuring GDP per hours worked. This indicator is crucial as it encapsulates the overall productivity of the labor force across all economic sectors, indicating whether the average worker is involved in higher or lower productivity activities. The International Labour Organisation's ILOStat database provides this data, reflecting the productivity status as of 2021.

The structural change aspect of the PCI focuses on the investment in capital formation as a percentage of GDP and the industrial ratio, which denotes the GDP share occupied by the industrial and services sectors. This indicator sheds light on the degree to which an economy is moving towards more industrially based, higher-value activities, a sign of progressive economic development.

Lastly, the ECI measures the complexity of a country's productive structure, evaluating the knowledge intensity and sophistication of its productive capabilities. Higher scores on the ECI suggest an economy's ability to produce a diverse range of complex goods, a harbinger of robust economic potential and resilience.

The economic capacity sub-score, through these indicators, thus acts as a critical tool for decision-makers, indicating where a country stands in terms of economic development and where targeted efforts can catalyze further transformation. It informs policy on where to direct investments and support to enhance productivity, promote diversification, and drive economic complexity, contributing to the nation's long-term economic health and resilience against future shocks.

Trade concentration and diversification index

The **trade concentration and diversification (TCD)** index measures, for each country, the degree of concentration of goods exported. It tells us if a large share of a country's exports is accounted for by a small number of commodities. It can be used as a warning sign of low export diversification, with ensuing economic vulnerabilities. The data stems from the UNCTADStat database and is updated yearly, with the last update occurring in 2022.

The Trade Concentration and Diversification (TCD) Index is a significant measure for understanding a country's economic health and its need for targeted interventions. The TCD Index can be a useful indicator of a country's potential for economic transformation. Countries with a high degree of trade concentration may have economies that are not productively serving their transformation, indicating a need to diversify their production capabilities (OECD/WTO, 2019; Osakwe et al. 2018).

It can help identify countries that are economically vulnerable. Countries with a high degree of trade concentration may be more susceptible to economic shocks and crises, particularly if they rely heavily on a limited number of commodities for their exports (OECD/WTO, 2019; Osakwe et al. 2018). These countries could be prime targets for interventions aimed at improving their trade diversification and thus reducing their vulnerability.

Finally, it can also indicate the level of economic diversification within a country. Countries with a high degree of trade concentration may have less diversified economies, implying that businesses in these countries may struggle to access diverse markets. This makes them potential beneficiaries of interventions aimed at improving trade diversification (OECD/WTO, 2019; Osakwe et al. 2018).

Labour Productivity

Labour productivity, defined as the Gross Domestic Product (GDP) per hours worked, is a fundamental indicator of the economic health of a country and its potential for development impact. It provides a comprehensive view of the productivity levels across all sectors of a country's economy. This indicator is particularly significant in understanding whether workers, on average, are engaged in activities that yield high or low productivity. The data for labour productivity is provided by the International Labour Organisation's ILOStat and is measured in constant 2017 US Dollars, Purchasing Power Parity (PPP) for the year 2021.

The role of labour productivity in determining the vulnerability, additionality, and transformative potential of a country is multifaceted. Labour productivity is integral to the economic transformation of a country. Improvements in labour productivity can catalyse structural changes in the economy, such as a shift from lower to higher productivity activities or sectors. This transformation of the economic base of a country can contribute to sustainable development and enhance the living standards of its population. This shift is integral for spurring job creation and enhancing living standards through increased per capita incomes, particularly in developing nations. The role of Development Finance Institutions (DFIs) in this context is significant. They have the potential to drive economic transformation by directing investments toward sectors with higher productivity (Lemma, 2018).

Furthermore, the link between economic transformation and poverty is explored in a detailed analysis. This transformation, characterized by the movement of labour and capital from low- to higher-productivity activities, is crucial for sustained job creation and fostering a more resilient economy. The study delves into the mechanisms through which economic transformation influences the poorest and most vulnerable in society. It outlines the various channels, including production patterns that involve the poor, their consumption patterns, and other routes like government services. The research also acknowledges the possibility of unintended consequences that may exclude certain groups from the benefits of economic transformation due to factors such as gender or ethnicity, suggesting the need for complementary measures to ensure inclusivity (Diwakar et al., 2019).

Labour productivity can also serve as a barometer for gauging the vulnerability of a country's economy. Economies with higher labour productivity are often more resilient, as their workers are engaged in higher productivity activities. This resilience can buffer the economy against various shocks and facilitate quicker recovery. On the other hand, economies with lower labour productivity may be more vulnerable, as they are more susceptible to economic shocks and may have a reduced capacity to recover (Lopez-Garcia & Szorfi, 2021).

Labour productivity also plays a pivotal role in additionality. Economies with lower labour productivity may face challenges in accessing finance within their domestic markets or through existing resources. This is because low productivity can signal higher risk to investors, thereby limiting the availability of finance. Therefore, investments aimed at enhancing labour productivity could potentially increase access to finance for these economies, thereby contributing to additionality (Karimu, 2019).

Structural Change

The **structural change** indicator is a component of the Productive Capacity Index (PCI). Structural change plays a significant role in assessing the development impact potential of an

investment within a country. The structural change indicator comprises two components: Gross Fixed Capital Formation as a percentage of GDP and the industrial ratio (industry and services over GDP). The PCI is produced by UNCTAD and is updated annually.

Structural change is inherently transformative. It involves a shift in the economic structure of a country, often from lower-productivity to higher-productivity sectors. This can lead to increased labour productivity, higher wages, and improved living standards. In this way, structural change can transform the economic base of a country and contribute to sustainable development.

Structural change can also be a measure of a country's economic vulnerability. Economies that are heavily reliant on a single sector may be more vulnerable to shocks affecting that sector. Diversification of the economy, as indicated by a higher industrial ratio, can reduce this vulnerability by spreading risk across multiple sectors.

Structural change can also contribute to additionality. Economies that are undergoing structural change may have greater needs for finance to support the transition, particularly if domestic markets or existing resources are insufficient. Investments that support structural change, such as those in infrastructure or education, productive structural change can therefore provide additional finance that would not otherwise be available¹.

Economic Complexity

The **Economic Complexity Index (ECI)** is a comprehensive measure that encapsulates the productive capabilities of large economic systems, typically cities, regions, or countries. The ECI is updated annually and uses country-level scores as a sub-indicator (Atlas of Economic Complexity, 2023).

The ECI is inherently linked to economic transformation. Improvements in a country's ECI can lead to structural changes in the economy, such as a shift from lower to higher productivity sectors (Ortiz-Ospina & Beltekian, 2018). This can transform the economic base of a country and contribute to sustainable development (Ortiz-Ospina & Beltekian, 2018).

The ECI can also provide insights into a country's economic vulnerability. Countries with a low ECI may be more vulnerable as they have fewer and less complex products that they can competitively export (Ortiz-Ospina & Beltekian, 2018). Conversely, countries with a high ECI, indicating a diverse and sophisticated export basket, may be less vulnerable as they are less dependent on a single sector (Ortiz-Ospina & Beltekian, 2018).

Countries with a low ECI may struggle to access finance within their domestic markets or via existing resources, as a low ECI can be a sign of higher risk to investors (Nguyen, Schinckus & Su, 2022). Therefore, investments that aim to improve a country's ECI could help raise access to finance for these economies (Nguyen, Schinckus & Su, 2022).

In conclusion, the ECI is a critical factor to consider when assessing the development impact potential of an investment within a given country.

Finalised Country Model

The DERA 2.0 Country Model, as illustrated in Table 2 (below), embodies a nuanced and comprehensive framework, pivotal for guiding DEG's investments towards countries with the most significant potential for sustainable development and economic growth. This model is

intricately designed, with a keen focus on three main impact channels: Economic Vulnerability, Additionality, and Economic Capacity. Each channel is assessed through specific indicators, sourced from reliable and updated databases like the World Bank, UNDESA, and IMF. For instance, the Economic Vulnerability component, assessed through Gross National Income per Capita and the Economic Vulnerability Index (EVI), targets investments towards countries facing structural economic challenges and susceptibility to environmental or market shocks. This approach ensures that DEG’s investments are strategically aligned with the goals of mitigating economic vulnerability, filling financial gaps, and fostering a transformative economic impact in the targeted countries.

Table 2: Proposed DERA 2.0 Country Model

Indicators	Weights	Sources
Economic Vulnerability		
Gross National Income per Capita	50%	World Bank
Economic Vulnerability Index (EVI)	50%	UNDESA
Additionality		
Financial Development Index (FDI)	50%	International Monetary Fund (IMF)
Financial Inflow Index (FII)	50%	World Bank
Economic Capacity		
Trade Concentration and Diversification Index (TCD)	25%	UNCTADStat
Labour Productivity	25%	International Labour Organisation’s ILOStat
Structural Change (part of the Productive Capacity Index)	25%	UNCTAD
Economic Complexity Index	25%	Atlas of Economic Complexity

The Additionality and Economic Capacity sections of the Country Model further refine the investment focus. The Additionality aspect, gauged through the Financial Development Index (FDI) and Financial Inflow Index (FII), identifies countries that struggle to secure finance domestically or through existing resources, thereby signifying where DEG’s investments can fill critical financial voids. On the other hand, the Economic Capacity section, measured by indicators such as the Trade Concentration and Diversification Index (TCD) and the Economic Complexity Index (ECI), concentrates on countries that show potential for sustainable growth and development through economic transformation. These indicators collectively offer a multifaceted view of a country's economic state, guiding DEG to channel its resources effectively. The weightage assigned¹ to each indicator in Table 2 mirrors their relative importance in the assessment process, ensuring a balanced and well-rounded evaluation of potential investment destinations.

¹ See Annex A for more details

4. The Sector Model

The indicators we have included provide focus on various critical aspects that are essential for sustainable economic development. Each set of indicators, from energy to water management, addresses a different dimension of how resources and infrastructure can be optimised to foster growth and development.

Box 2: The Productive Capacities Index

The Productive Capacities Index (PCI) is a dynamic and practical tool developed by the United Nations Conference on Trade and Development (UNCTAD) to support developing countries in understanding the status of their productive capacity and how this can be improved. It builds on UNCTAD's long-standing work on productive capacities, which are essential for generating inclusive and sustained economic growth and achieving sustainable development. The PCI covers 194 economies for the period 2000-2022 and maps the set of productive capacities and their specific combinations across 42 indicators. This makes the PCI multidimensional in its analytical abilities. The index can help diagnose the areas where countries may be leading or falling behind, spotlighting where policies are working and where corrective efforts are needed.

The PCI methodology encompasses several sophisticated steps to ensure accuracy and comprehensiveness. Initially, missing data across indicators and years are addressed through simple interpolation and imputation using data from similar neighbouring economies, adjusted by GDP per capita, to maintain data continuity. Optionally, forecasting methods are employed to generate new observations for each indicator, enhancing the index's currency and reliability. Principal Component Analysis (PCA) plays a crucial role in simplifying the data structure by identifying principal components that encapsulate shared information across indicators, effectively harmonizing indicators with divergent scale directions. The index itself is derived from the geometric average of scores across eight key domains, employing a geometric mean to minimize outliers' impact and underscore the importance of a balanced input mix. Finally, the scores undergo standardization and aggregation, ensuring that each indicator, irrespective of its original scale or direction, uniformly contributes to the overall PCI score, thereby facilitating a consistent and equitable assessment of productive capacities across economies.

It suggests a roadmap for future policy actions and interventions under each of its eight components: human capital, natural capital, ICTs, structural change, transport, institutions, and the private sector¹². The PCI has been peer-reviewed and validated at national and regional levels by leading technical experts across the UN system, as well as by academics and government stakeholders. The PCI is, therefore, a comprehensive tool that provides valuable insights into a country's productive capacities, including in the field of ICT. It serves as a guide for policy actions and interventions to improve these capacities and ultimately achieve sustainable development.

Source: UNCTAD (2023)

Energy

The indicators for energy, including the average practical potential (PVOOUT Level 1, kWh/kWp/day plus wind generation, kWh/capita), LCOE, and PCI for Energy, play a vital role in economic development. The average practical potential of solar and wind power, as quantified by the World Bank and Solargis, is a crucial measure for countries to assess their potential for solar energy utilization. This is particularly important in the context of the global shift towards sustainable energy sources. The Levelized Cost of Energy (LCOE) is another significant metric, indicating the average cost per unit of energy produced, a key factor in determining the economic viability of (renewable) energy projects. Lastly, the PCI – Energy from UNDESA underscores the importance of energy in the overall competitiveness and productivity of an economy.

These energy indicators provide a comprehensive overview of the potential, cost-effectiveness, and productivity of (renewable) energy sources. They are essential tools for governments, policymakers, investors, and energy companies in guiding decisions, investments, and policies towards a sustainable and economically viable energy future.

Average Practical Potential (Solar PVOOUT Level 1, kWh/kWp/day plus Wind generation, kWh/capita)

The average practical potential of renewable energy, particularly solar power, as measured by PVOOUT Level 1 (kWh/kWp/day), is a critical indicator of a region's solar energy potential. This indicator is provided by the World Bank and Solargis and provides a clear indication of the potential daily energy output per kilowatt-peak (kWp) of solar photovoltaic (PV) installations. It is a crucial parameter for evaluating the feasibility and efficiency of solar projects in various regions, especially in developing countries where energy needs are critical and often unmet.

The World Bank's report on "Solar Photovoltaic Power Potential by Country" evaluates the theoretical, practical, and economic potential of PV power generation. This comprehensive assessment considers factors affecting PV conversion efficiency, land use constraints, and electricity production costs. The report reveals that 93% of the global population lives in countries with an average daily solar PV potential between 3.0 and 5.0 kWh/kWp, highlighting the vast untapped potential in various regions, especially in the Middle East, North Africa, and Sub-Saharan Africa (World Bank, 2020).

The kWh/kWp/day metric reflects both geographical and climatic factors that influence solar energy production and the current technological advancements in solar PV efficiency. Areas with higher PVOOUT values present optimal opportunities for solar energy investments, aiding governments and private investors in strategic resource allocation for solar development (World Bank, 2020; Solargis, 2023).

Moreover, this indicator is instrumental in long-term renewable energy planning. It provides insights into the seasonal variations in solar energy production, which is vital for designing systems capable of either storing excess energy or integrating with other energy sources during lower solar output periods. This aspect is particularly crucial in developing countries, where energy reliability is key to economic stability and growth. By leveraging high PVOOUT areas, these countries can significantly reduce their reliance on traditional, often imported, energy sources, thereby reducing economic vulnerability, fostering sustainable development and boosting domestic employment (IRENA, 2023).

Wind energy generation per capita is a metric that measures the amount of wind-generated electricity produced per person. It's an indicator of how extensively a region or country has developed its wind energy resources in relation to its population size. Several research papers have discussed various aspects of wind power, including its per capita generation, economic viability, technological advancements, and policies.

Advances in wind turbine technology are expected to reduce the cost of wind energy, making it more competitive with other forms of electricity generation (Williams et al., 2017). The integration of energy storage systems with wind power generation is also an emerging focus, aiming to make wind energy more reliable and reduce its variability (Lu et al., 2009). Finally, the global technical potential of wind electricity is vast, with estimates suggesting it could exceed current world electricity consumption by several times (Hoogwijk et al., 2004).

The development and implementation of wind energy generation in developing countries have unique challenges and progress profiles when compared to developed nations. While some developing countries have made significant strides in wind power development, others are lagging, with the main barriers including technical, financial, institutional, and market-related issues (Timilsina et al., 2013). Africa has the least developed wind power infrastructure, there is therefore a need for increased investment for the continent to reach the world average level by 2030 (Liu et al., 2019). Similarly, investment is also needed to facilitate technology transfer from, for example, China and India which have seen substantial growth in wind power, largely due to technology development strategies by leading local manufacturers (Lewis, 2007).

Wind power is, therefore, a growing, viable, and increasingly economical source of renewable energy with significant potential for expansion, especially when considering per capita generation. Future growth in wind capacity is expected to continue, driven by technological improvements and policy support.

Levelized Cost of Electricity Generation (LCOE)

The Levelized Cost of Electricity generation (LCOE) is an important financial metric used in the energy sector to compare different methods of electricity generation on a consistent basis. It represents the per-unit cost (typically per kWh) of building and operating a generating plant over an assumed financial life and duty cycle. LCOE is crucial for evaluating the economic competitiveness of various energy generation sources, including renewable energy technologies. It is also the most commonly used indicator used to compare the cost competitiveness of electricity generating technologies (Timilsina, 2020). The World Bank and Solargis provide data for this indicator as used for the Sector Model.

This data is essential for policymakers and investors in making informed decisions regarding energy investments. As renewable technologies advance and their costs decrease, the LCOE of these sources becomes more competitive, which is a crucial factor in the global shift towards sustainable energy.

In the context of renewable energy, such as solar and wind power, LCOE helps in understanding the cost-effectiveness of these technologies in comparison to traditional fossil fuels. A lower LCOE means that the energy source is more economically attractive. The LCOE considers the initial capital costs, ongoing operational and maintenance costs, the lifespan of the technology, and the efficiency of energy production.

The International Energy Agency (IEA) has highlighted that the LCOE of renewable energy technologies, particularly solar and wind, is progressively decreasing, making them increasingly competitive against conventional fossil fuel generation. The declining trend in

renewable energy costs, driven by technological advancements and policy support, is reshaping the energy market dynamics. This change is pivotal in the economic transformation of developing countries, reducing their vulnerability to volatile fossil fuel markets and enhancing their energy security (IEA, 2020). Research by the World Bank (Timilsina, 2020) calculated over 4,100 LCOE values for various technologies, considering key input variables like capital costs, discount rates, and others. It concluded that, generally, the LCOEs for most renewable technologies are lower than those for fossil fuel-based technologies, particularly at lower ranges of capital costs and with a discount rate of 10% or lower. This excludes more expensive renewables like concentrated solar power (CSP) and offshore wind. The study's approach to calculating LCOE was comprehensive, taking into account variations in multiple input variables across technologies and scenarios. This method allows for a nuanced comparison of electricity generation costs, ensuring that the LCOE values reflect the variability and diversity of costs associated with each technology in different contexts.

PCI – Energy

The PCI for Energy (UNCTAD) is a comprehensive measure that assesses a country's capacity to produce and manage energy. This indicator is particularly important in understanding how energy contributes to a nation's overall economic development and competitiveness.

PCI for Energy encompasses various aspects of the energy sector, including energy production, distribution efficiency, renewable energy development, and the sustainability of energy systems. It reflects how well a country is leveraging its energy resources and infrastructure for economic growth and development. The following indicators are used to generate the PCI-Energy score (UNCTAD,2021):

1. **Share of People with Access to Electricity:** This indicator, sourced from the World Bank's Sustainable Energy for All database, measures the percentage of the population with access to electricity. It's a key metric for assessing energy accessibility in a region.
2. **Transmission and Distribution Losses as Share of Primary Supply:** Sourced from IEA Statistics and the OECD, this indicator measures the efficiency of the energy transmission and distribution systems by calculating losses as a proportion of the total primary energy supply.
3. **Renewable Energy Consumption as Share of Total Final Energy Consumption:** This indicator, also from the World Bank's Sustainable Energy for All database, evaluates the proportion of energy consumption met by renewable sources. It is crucial for assessing the shift towards sustainable energy sources.
4. **GDP per Kg of Oil Consumption:** Provided by IEA Statistics and the OECD, this measures the economic output generated per kilogram of oil consumed. It's a key efficiency metric, indicating how well an economy converts energy into economic value.
5. **Total Primary Energy Supply per Capita:** This indicator, sourced from IEA Statistics and the OECD, assesses the total energy supply available per person. It provides insights into the overall availability of energy resources in a country.

6. **Total Energy Consumption per Capita:** Also sourced from IEA Statistics and the OECD, this measures the total energy consumed per person, reflecting the energy usage patterns and efficiency in a country.

The PCI for Energy contributes significantly to economic transformation and the reduction of economic vulnerability in developing countries. By providing a comprehensive assessment of a country's capacity to produce and manage energy, the PCI for Energy highlights the integral role of energy in overall economic development and competitiveness. Developing productive capacities, including those in the energy sector, is crucial for setting in motion the long-term process of structural transformation, which forms the backbone of sustainable development. The evidence suggests that no nation has developed without fostering productive capacities and structural economic transformation (UNCTAD, 2021).

Furthermore, the PCI for Energy aids in diagnosing areas where countries may be leading or falling behind, spotlighting where policies are working and where corrective efforts are needed. It offers a roadmap for future policy actions and interventions, guiding developing countries in understanding their productive capacity status and how it can be improved. This understanding is essential for generating inclusive and sustained economic growth, achieving sustainable development, and building economic resilience. Developing countries' economic resilience fundamentally depends on creating, maintaining, and using productive capacities, including energy, to realize development objectives (UNCTAD, 2021).

This indicator is crucial for countries to evaluate their energy policies and strategies. It helps in identifying areas that need improvement, such as increasing renewable energy capacity, enhancing energy efficiency, or investing in modern energy infrastructure. The PCI for Energy is also a key metric for international organizations and investors to assess the energy sector's performance and potential in different countries.

ICT

The Information and Communication Technology (ICT) indicators, such as the number of internet service providers, fixed-broadband Internet basket, mobile cellular data and voice high-consumption basket, and broadband services as part of universal access (all sourced from ITU Data Hub), along with PCI for ICT from UNCTAD, highlight the importance of digital connectivity and infrastructure in economic development. ICT infrastructure facilitates information exchange, enhances business operations, and enables access to global markets. Broadband accessibility and the proliferation of internet service providers are critical for fostering innovation, improving educational and health services, and bridging the digital divide. The integration of ICT into daily life and business operations can significantly boost productivity and economic competitiveness.

Number of Internet Service Providers (ISPs)

The number of Internet Service Providers (ISPs) in a country is a significant indicator of the ICT landscape's competitiveness and diversity. This metric is compiled by the ITU Data Hub and reflects the extent to which the internet services market is accessible and varied for consumers and businesses. A higher number of ISPs typically indicates a competitive market, which can lead to better service quality, lower prices, and more innovative offerings.

This indicator also sheds light on the regulatory and business environment of a country. A healthy number of ISPs often suggests a supportive regulatory framework that encourages investment and competition in the sector. For countries aiming to boost their digital economies, fostering a competitive ISP market is a critical step.

Moreover, the presence of multiple ISPs is crucial for rural and underserved areas. It can drive the expansion of internet services into these regions, supporting inclusive digital access and bridging the digital divide.

Fixed-Broadband Internet Basket

The Fixed-Broadband Internet Basket, tracked by the ITU Data Hub, measures the affordability and accessibility of fixed-broadband internet services. This indicator considers the cost of various fixed-broadband plans relative to the average income, providing insight into how economically accessible these services are for the average consumer.

Affordability is a key factor in the widespread adoption of internet services. High costs can be a significant barrier to entry, limiting access to digital resources, information, and online services. Therefore, a lower cost (or a more affordable basket) is indicative of greater internet penetration and digital inclusivity, which are essential for social and economic development.

Fixed broadband, while having a significant impact, is noted to be less influential globally compared to mobile broadband. However, in developed countries with high fixed broadband penetration, the benefits of this technology exceed those in developing nations. Despite this, the economic contribution of digitization, encompassing both fixed and mobile broadband, is more pronounced in advanced economies than in emerging ones (ITU, 2020).

Digitization, propelled by fixed broadband, substantially contributes to labor and total factor productivity. This development is influenced by institutional and regulatory factors and not just by economic variables. Additionally, digitization accelerates when structural policy changes related to digital technologies are implemented (ITU, 2020).

Measures to enhance fixed broadband accessibility are critical. These include deploying infrastructure in rural areas, promoting affordable digital infrastructure and services, incentivizing private sector involvement in remote areas, and enhancing digital skills among the population. Such initiatives aim to bridge digital divides and foster economic growth (ITU, 2020)

This indicator is particularly important for policymakers and telecom regulators. It helps them to assess the effectiveness of their policies in making internet services affordable and to identify areas where intervention may be necessary to ensure equitable access to these vital services.

Mobile Cellular Data and Voice High-Consumption Basket

This indicator, also sourced from the ITU Data Hub, measures the cost and consumption patterns of mobile cellular services for high-usage consumers. It reflects the affordability and availability of comprehensive mobile services, which are crucial in today's increasingly mobile-first world.

The relevance of this indicator lies in its reflection of how accessible mobile services are for heavy users, who are often key drivers of digital content consumption and creation. In many developing countries, mobile services are the primary means of internet access, making this indicator particularly important for assessing digital inclusion and the potential for mobile-based economic activities.

The ITU maintains standardized price baskets, including the high-consumption data and voice baskets, to represent various consumption patterns globally. These baskets help in comparing

prices between operators and countries. The affordability of telecom services, relative to consumer income, is a more meaningful measure than price alone. This is particularly relevant in developing countries, where a significant portion of the population may find these services unaffordable (ITU, 2021).

The telecom sector's evolution from per-minute charges to flat-rate pricing for data services has also influenced the affordability and usage of mobile services. Falling prices in the mobile market have been linked to increased subscription rates and greater ICT service usage, demonstrating the impact of pricing on digital inclusivity and economic growth (ITU, 2021).

Additionally, a competitive mobile services market, indicated by a lower cost for high-consumption baskets, can stimulate various sectors, including e-commerce, mobile banking, and digital services, thereby contributing significantly to economic growth.

Broadband Services as Part of Universal Access

This indicator assesses whether broadband services are incorporated into universal access policies and is tracked by the ITU Data Hub. It is a critical indicator of a country's commitment to digital inclusivity. Universal access policies aim to make internet services available and affordable for all segments of the population, particularly in underserved and rural areas. This access offers increased opportunities for women's empowerment, environmental sustainability, and contributes to government transparency and accountability, fostering social development across communities (World Bank, 2021).

This indicator is vital for gauging the progress countries are making towards achieving digital equity. It reflects the efforts being made to extend digital infrastructure to remote areas, improve the affordability of services, and address the needs of marginalized communities.

The challenge lies in expanding broadband access, particularly in rural and underserved areas, where the "digital divide" is most pronounced. This divide not only hinders shared prosperity but also limits pathways out of poverty. Initiatives to expand broadband involve unleashing private investment, especially in areas where social returns on investment outweigh private returns, such as in rural areas with high costs or low revenues (World Bank, 2021)

The inclusion of broadband services in universal access initiatives is also a key driver of socio-economic development. It enables broader access to education, healthcare, government services, and employment opportunities, all of which are increasingly dependent on digital connectivity.

PCI – ICT

The PCI for ICT (UNCTAD) index serves as a comprehensive measure for evaluating a country's ability to utilize ICT for fostering economic and social development. The PCI for ICT encompasses several key dimensions, including the quality and accessibility of ICT infrastructure, the level of digital literacy and skills among the population, the integration of ICT in business and government services, and the effectiveness of regulatory policies in promoting ICT development. The following indicators are included (UNCTAD, 2020):

1. **Number of Fixed Broadband Subscriptions per 100 People:** This indicator, sourced from the International Telecommunication Union (ITU), measures the number of fixed

broadband internet connections available per 100 inhabitants. It indicates the level of fixed internet infrastructure and accessibility.

2. **Number of Mobile Telephone Subscriptions per 100 People:** Also from ITU, this metric assesses the number of mobile phone subscriptions per 100 people, reflecting the penetration and availability of mobile telecommunication services.
3. **Number of Fixed Lines per 100 People:** Tracked by the ITU, this measures the number of traditional fixed telephone lines per 100 people, indicating the extent of legacy telecommunication infrastructure.
4. **Secure Internet Servers per Million People:** Sourced from the World Development Indicators, this indicator measures the number of secure servers (such as those using HTTPS) per million people, reflecting a country's digital security infrastructure.
5. **Number of Internet Users as Share of Population:** This indicator, also from the ITU, measures the proportion of the population that uses the internet, providing insights into digital inclusion and internet accessibility.

In today's digital age, ICT is a cornerstone of modern economies, offering new pathways for innovation, efficiency, and competitiveness. The PCI for ICT helps in understanding how well a nation is adapting to the digital revolution. A high score in the index typically indicates robust ICT infrastructure, widespread internet access, a high level of digital literacy, and supportive government policies. These factors are essential for encouraging digital entrepreneurship, enabling e-governance, and facilitating access to global markets (World Bank, 2023b).

Moreover, the PCI for ICT is a valuable indicator for identifying digital divides within and between countries. It highlights areas where improvements are needed, such as in expanding internet connectivity to rural and underserved areas, enhancing digital skills training, or reforming regulatory frameworks to support ICT innovation. This is particularly important in developing countries, where accelerated ICT development can be a significant driver of economic growth and social inclusion (World Bank, 2023b).

The index is also instrumental for policymakers and international organizations in formulating strategies and allocating resources for ICT development. By providing a detailed assessment of a country's ICT capabilities, the PCI for ICT informs decisions on where to focus efforts, whether it is upgrading infrastructure, enhancing digital education, or fostering a conducive environment for ICT sector growth (World Bank, 2023b).

Transport Infrastructure

The indicators in this category, including the Logistics performance index (World Bank) and PCI for transport (UNCTAD), emphasize the importance of efficient and reliable transport infrastructure in economic development. Good transport infrastructure is essential for the movement of goods and people, directly impacting trade efficiency, access to markets, and overall economic productivity. The Logistics Performance Index reflects the efficiency of trade and transport-related infrastructure. These indicators collectively highlight the importance of investing in transport infrastructure to enhance economic competitiveness and facilitate growth. They also highlight the importance of investing in and maintaining high-quality transport networks for countries to remain competitive and ensure sustainable economic progress.

Logistics Performance Index: Quality of Trade and Transport-Related Infrastructure

The Logistics Performance Index (LPI) by the World Bank, particularly its assessment of the quality of trade and transport-related infrastructure, is a key indicator of a country's logistic efficiency, crucial for global market competitiveness. The LPI evaluates factors such as infrastructure quality for ports, roads, and railways, the ease of arranging competitively priced shipments, and the capability to track and trace consignments. High-quality logistics infrastructure is essential in reducing trade costs and enhancing a country's global trade participation. Efficient logistics support the movement of goods within and across borders and enable producers to integrate into global value chains, which is vital for economic growth and poverty reduction. This integration is particularly significant as it enables deeper engagement in international trade, a major driver of economic development (World Bank, 2023c).

Countries that score highly on the LPI show robustness across all logistics areas, including trade and transport-related infrastructure. This broad-based strength has enabled some developing countries to surpass wealthier ones in logistics performance, highlighting the potential of logistics improvements to boost trade performance and economic resilience (World Bank, 2022).

Moreover, the quality of transport infrastructure directly impacts economic growth in developing countries. Efficient transport infrastructure enhances mobility, facilitates movement of goods and people, and contributes to economic development. It also reduces commodity prices, increases accessibility to global markets, and makes global manufacturing more cost-effective. In contrast, inadequate infrastructure can significantly increase the costs of traded goods, adversely affecting private sector development and foreign direct investment flow (Kasu & Chi, 2018).

Empirical studies across 46 developing countries have revealed that transport infrastructure and trade openness positively affect logistics infrastructures, reinforcing the relationship between transport infrastructure, logistics performance, and economic development (Saidi et al. 2020).

The LPI, with a focus on trade and transport-related infrastructure, plays a pivotal role in economic transformation in developing countries. It reduces economic vulnerability and complements market investments by enhancing logistics efficiency, thereby facilitating greater participation in international trade and attracting FDI.

PCI - Transport

The PCI for Transport, developed by UNCTAD, measures a country's capacity to support economic activity through its transport infrastructure. This index encompasses various facets of transport infrastructure, including its extent, quality, and accessibility. The following metrics make up the PCI for transport:

1. **Air Transport, Registered Carrier Departures Worldwide per 100 People:** This indicator measures the frequency of air carrier departures on a per capita basis, reflecting the level of air transport activity relative to the population. It is sourced from the International Civil Aviation Organization (ICAO). It includes Civil Aviation Statistics of the World and ICAO staff estimates.

2. **Air Transport, Freight (Million Ton-km):** This indicator measures the volume of air freight transported, expressed in millions of ton-kilometres. It reflects the capacity and extent of air cargo transportation. This data is also gathered by the ICAO, based on Civil Aviation Statistics of the World and estimates from ICAO staff.
3. **Air Passengers Per Capita:** Calculates the average number of air travel passengers per person. It indicates the prevalence of air travel within the population. The United Nations Conference on Trade and Development (UNCTAD) computes this indicator based on data from the International Civil Aviation Organization.
4. **Logarithm of km of Roads/100km² Land:** Measures the density of road networks, expressed as the logarithm of kilometres of road per 100 square kilometres of land. This data is part of the International Road Federation's World Road Statistics.
5. **Logarithm of Total km of Rail Lines Per Capita:** This metric indicates the extent of rail infrastructure in relation to the population size, showing how widespread and accessible rail transportation is for the average person. UNCTAD computes this indicator based on World Development Indicators and web-based archives.

The PCI scores and a country's GDP per capita levels are closely intertwined, with a higher PCI score often associated with a greater GDP per capita. This reflects the importance of productive capacities, including transport infrastructure, in determining a country's ability to produce goods and services and to grow and develop economically. Developed economies generally have higher productive capacity scores, indicating the strong correlation between well-developed transport infrastructure and economic prosperity (UNCTAD, 2023).

In the context of developing countries, the PCI for Transport is particularly significant. It acts as a powerful tool for governments to track progress over time and develop informed policies to address development gaps. By providing a clear diagnostic of the state of transport infrastructure, the PCI for Transport enables developing countries to identify areas for improvement and direct investments accordingly. Several developing countries have utilized the PCI to implement data-driven and evidence-based policies aimed at enhancing their transport infrastructure and, by extension, their overall productive capacities (UNCTAD, 2023).

The PCI for Transport, therefore, is a key indicator for understanding how well a country is utilizing its transport networks to support economic growth and development. A well-developed transport infrastructure not only boosts trade and mobility but also has broader implications for societal well-being, such as improved access to healthcare, education, and employment opportunities.

Finance

The financial indicators, such as Domestic credit to the private sector by banks (percentage of GDP), Financial Institutions Access, and Financial Market Access Index (sourced from the World Bank and the IMF), are fundamental to economic development. These indicators reflect the accessibility of financial services, the ease of obtaining credit, and the overall health of a country's financial sector. A robust financial system is essential for mobilizing savings, allocating capital efficiently, and facilitating transactions, all of which are crucial for economic growth and development.

The indicators provide insights into the health and efficiency of a country's financial sector. They are critical for understanding how well a country is leveraging its financial resources and

systems to support economic activity and growth. High performance in these areas is usually associated with dynamic, diversified economies capable of sustained growth and development.

Domestic Credit to Private Sector by Banks (% of GDP)

The indicator is provided by the World Bank is an important metric that measures the extent to which the banking sector contributes to the financing of the private sector's activities relative to the overall size of the economy. This ratio is a key indicator of the financial health and stability of a country and its ability to support private enterprise.

A higher percentage indicates that banks are actively lending to businesses and individuals, which is essential for economic growth. It reflects a well-functioning banking sector that not only supports existing businesses and encourages entrepreneurship but also indicates a level of trust in the financial system. Credit availability is crucial for businesses for expansion, innovation, and day-to-day operations, and for individuals for purchases like homes and cars, which stimulate economic activity.

The provision of domestic credit to the private sector by banks, as a percentage of GDP, is a significant indicator of a country's economic health and its banking sector's role in supporting private enterprise. This ratio, provided by the World Bank, is pivotal in understanding how banking activities contribute to economic transformation, reduce economic vulnerability, and supplement market investments in developing countries.

In the context of economic transformation, the availability of credit to the private sector is crucial. It enables businesses to invest in capital, innovate, and expand, thereby contributing to economic growth and diversification. Studies have shown that in developing countries, where alternative financing options are limited, bank credit is a vital source of funding for businesses (Beck, Demirgüç-Kunt, & Levine, 2010). This accessibility to credit not only supports established businesses but also fosters entrepreneurship, which is essential for economic diversification and resilience.

Moreover, the extension of credit by banks plays a significant role in reducing economic vulnerability. In economies where the private sector has easier access to credit, there is a stronger buffer against economic shocks (Honohan, 2008). This resilience is particularly important in developing countries, where economic volatility can be more pronounced. By supporting the private sector, particularly small and medium enterprises (SMEs), banks help in creating a more robust and diverse economic structure that is less susceptible to external shocks.

Furthermore, domestic credit to the private sector by banks complements market investments in developing countries. It acts as an additional avenue for financial resources, especially in contexts where capital markets are underdeveloped (World Bank, 2017). This availability of credit is essential for filling the investment gap that cannot be met by market investments alone. It also helps in mobilizing domestic resources for development, which is crucial for the sustainable economic growth of developing countries.

Domestic credit to the private sector by banks is a key driver of economic transformation in developing countries. It supports business growth, fosters entrepreneurship, and provides a cushion against economic vulnerabilities. Additionally, it complements market investments by

filling financing gaps, especially in contexts where other sources of investment are limited.² Thus, countries with a smaller share of domestic credit to private sector banks as percent of GDP are given a higher score within the model since they have limited access to local pools of capital to fund development-oriented investments. In these contexts, DEG finance is more additional compared to countries where domestic credit is readily available in the local financial sector.

Financial Institutions Access

"Financial Institutions Access" is a measure of the accessibility of financial services provided by banks and other financial institutions in a country. The International Monetary Fund provides data (IMF, 2019b) on this measure, highlighting its importance for economic development.

The index contains two quantitative measures. The quantitative measures detail the structure and reach of the financial sector, encompassing a wide array of institutions including commercial banks, credit unions, and insurance corporations, among others. They cover the physical presence of these institutions through branches and non-branch retail agent outlets (bank branches per 100,000 adults), reflecting the accessibility of financial services across the country. The data also captures the prevalence of ATMs (ATMs per 100,000 adults).

Financial inclusion, facilitated by accessible financial services, plays a vital role in inclusive economic growth. The availability of banking and financial services enables individuals and businesses, particularly those in underserved and rural areas, to actively participate in the economy. This participation is not just limited to saving money but extends to accessing credit and making investments. In developing countries, where a significant portion of the population may be unbanked or underbanked, improving access to financial services can have a profound impact on economic activity. For instance, Demirgüç-Kunt et al. (2018) highlight the issue that financial inclusion is crucial in reducing poverty and boosting prosperity.

Furthermore, financial institutions' access is instrumental in reducing economic vulnerability. By providing diverse financial products and services, including insurance and savings accounts, financial institutions help individuals and businesses manage risks and cope with financial shocks. This aspect of financial inclusion is particularly critical in developing countries where economic shocks can have severe repercussions on the vulnerable sections of the society. The World Bank (2020b) has emphasized the role of financial inclusion in building economic resilience, particularly in the face of global challenges such as the COVID-19 pandemic.

In addition to fostering economic resilience and growth, access to financial institutions also complements market investments in developing countries. It does so by mobilizing domestic savings and channelling them into productive investments. This process is vital in economies where capital markets are less developed, and external sources of finance are limited. Access to finance enables small and medium-sized enterprises (SMEs), which are often the backbone of developing economies, to grow and contribute to national development. The Global

² The effectiveness of this credit provision, however, depends on the broader financial and regulatory environment in which banks operate, highlighting the need for sound financial policies and regulatory frameworks.

Partnership for Financial Inclusion (GPFI, 2016) notes that access to finance is a key enabler for SMEs to contribute to economic growth and employment.

Accessibility of financial institutions is a key determinant of economic transformation in developing countries. It plays a significant role in promoting financial inclusion, reducing vulnerability to economic shocks, and supplementing market investments. The effective implementation of policies aimed at increasing financial accessibility can lead to more inclusive and sustainable economic growth in developing countries.

Financial Market Access Index

The Financial Market Access Index, updated by the IMF, compiles data on the percentage of market capitalisation outside of the top 10 largest companies in a country as well as the total number of debt issuers (domestic and foreign, financial and nonfinancial institutions) per 100,000 adults.

A robust financial market provides a crucial platform for raising capital, diversifying risk, and investing savings. Efficient financial markets are essential for the allocation of resources in the economy, promoting long-term economic growth. They enable businesses to raise funds through equity or debt and offer investment opportunities to a broad range of investors. This index is a valuable tool for assessing the maturity and accessibility of a country's financial markets.

Access to financial markets is vital for economic transformation. Efficient and accessible financial markets are essential for the optimal allocation of resources in an economy, thereby fostering long-term economic growth. They provide a platform for businesses to raise capital, either through equity or debt instruments. For example, Levine (2005) posited that well-functioning financial markets are imperative for economic growth as they facilitate the mobilization of savings for productive investments. In developing countries, where access to traditional forms of financing can be limited, financial markets offer an alternative avenue for businesses to access the capital necessary for expansion and innovation.

Moreover, financial markets play a significant role in reducing economic vulnerability. They offer mechanisms for risk diversification, which is crucial in mitigating financial shocks. This diversification is particularly important in developing economies, where economic and financial shocks can have more pronounced effects. According to the International Monetary Fund (IMF, 2019), robust financial markets enhance the stability of a country's financial system by providing various channels for risk management and liquidity.

Additionally, the Financial Market Access Index highlights the complementarity of financial markets to market investments in developing countries. These markets provide a broader range of investment opportunities, not only for domestic investors but also for international investors. This influx of capital can be significant for countries where domestic savings are insufficient to meet the investment needs. Claessens, et al. (2006) emphasize the role of global financial integration in supplementing domestic investments, which is facilitated by accessible and efficient financial markets.

The Financial Market Access Index is a crucial indicator of a country's economic health. It underpins economic transformation by facilitating capital raising and resource allocation, reduces economic vulnerability through risk diversification, and complements market investments by attracting a broader range of investors. The development of financial markets, as assessed by this index, is therefore pivotal for the sustainable growth of developing economies.

Water Management

The water management indicators, including Progress on Integrated Water Resources Management (UN Water Database) and Water use efficiency (USD/m³) (Aqueduct), are crucial for sustainable economic development. Effective water management is vital for agriculture, industry, and maintaining ecological balance. The efficiency of water use, especially in industries and agriculture, can significantly impact a country's economic productivity and sustainability. Integrated water resources management ensures that water resources are used efficiently and equitably, which is essential for food security, health, and environmental sustainability. These water management indicators offer insights into how nations manage and utilize their water resources. Effective water management is not only essential for environmental sustainability but also plays a significant role in supporting and driving economic growth, especially in sectors heavily dependent on water, such as agriculture and manufacturing. High performance in these indicators reflects a nation's ability to manage its water resources sustainably while supporting economic activities, an essential balance for long-term development and growth.

Progress on Integrated Water Resources Management (IWRM)

The "Progress on Integrated Water Resources Management (IWRM)" indicator, sourced from the UN Water Database, is a key metric assessing how countries are implementing IWRM strategies. IWRM is a process that promotes the coordinated development and management of water, land, and related resources to maximize economic and social welfare without compromising the sustainability of ecosystems.

This indicator reflects a country's commitment to sustainable water management, incorporating aspects like water conservation, equitable distribution, and the balancing of diverse water needs – including agricultural, industrial, and domestic. Effective IWRM is crucial in addressing challenges such as water scarcity, pollution, and the impacts of climate change. A higher score in this indicator signifies better management and sustainability of water resources, which is essential for food security, health, and environmental protection, as well as for supporting economic activities like agriculture and manufacturing.

Economic transformation, particularly in developing countries, is closely tied to effective water management. Agriculture, a mainstay of many developing economies, is heavily dependent on water resources. IWRM strategies that promote efficient and sustainable use of water resources directly support agricultural productivity and food security. According to the Food and Agriculture Organization (FAO, 2020), efficient water management is key to enhancing agricultural production and supporting rural livelihoods, which are critical for economic development in these regions.

Furthermore, IWRM plays a crucial role in reducing economic vulnerability. In the context of climate change and increasing water scarcity, countries that effectively implement IWRM are better positioned to handle these challenges. The United Nations Environment Programme (UNEP, 2021) emphasizes that sustainable water management is essential in building resilience against climate-related shocks and stresses, which disproportionately affect developing countries. Effective IWRM ensures equitable distribution of water resources, mitigates the impacts of water-related disasters, and reduces the vulnerability of marginalized communities.

In addition, IWRM contributes significantly to market investments in developing countries. Industries and manufacturing sectors, which are key drivers of economic growth, rely heavily on water resources. IWRM ensures that these economic activities are supported sustainably,

balancing industrial water use with other needs, including environmental conservation. The World Bank (2019) highlights that integrated water management is critical for supporting economic activities while preserving the ecological balance.

Water Use Efficiency (USD/m³)

"Water Use Efficiency (USD/m³)", updated yearly by Aqueduct, measures the economic output generated per unit of water used. This indicator is particularly important in the context of increasing water scarcity and the need for sustainable water management practices. It evaluates how efficiently water is used across different sectors of the economy, including agriculture, industry, and domestic use.

Firstly, high water use efficiency is indicative of an economy's ability to generate more economic value with less water. This is particularly crucial in regions grappling with water shortages or where water resources are stressed due to overuse or climate change. Efficient water usage is integral to economic sustainability, as it helps reduce operational costs for businesses and ensures the availability of water resources for diverse uses. The Food and Agriculture Organization (FAO, 2021) underscores the importance of water use efficiency in agriculture, a sector that consumes a significant proportion of global freshwater resources. Improved efficiency in this sector can lead to increased agricultural productivity and economic growth, especially in developing countries where agriculture forms the economic backbone.

Moreover, water use efficiency is a key factor in reducing economic vulnerability. In economies where water is a limiting factor, improved efficiency can mitigate the impacts of water scarcity and enhance resilience against climate-related shocks. The World Bank (2022b) highlights that efficient water management practices can help buffer economies against the adverse effects of climate change, thereby reducing their vulnerability to environmental and economic shocks.

Additionally, water use efficiency contributes to market investments in developing countries. Efficient water use is often a result of technological advancements and effective water management policies. Higher efficiency levels can attract investments in water-saving technologies and innovations, which are essential for sustainable economic development. The United Nations Development Programme (UNDP, 2020) notes that investments in water-efficient technologies not only optimize water use but also create opportunities for economic diversification and growth.

High water use efficiency levels are crucial for promoting economic sustainability, reducing vulnerability to water-related challenges, and attracting investments in water-efficient technologies. These aspects are particularly vital for the sustainable development and economic transformation of developing countries.

Finalised Sector Model

Table 3 outlines the Sector Model of DERA 2.0, strategically designed to complement the Country Model by focusing on specific sectors where DEG executes its investments. This model is critical for identifying sector-specific investment opportunities that align with DEG's overarching impact goals. The indicators, such as PVOUT Level 1 for Energy, the number of internet service providers for ICT, and the Global Quality Infrastructure Index for Transport Infrastructure, are meticulously selected to evaluate the potential impact of investments in these sectors. For instance, in the Energy sector, the allocation of weightages to indicators

like average practical potential and Levelized Cost of Energy (LCOE) reflects the emphasis on sustainable energy sources' economic viability and developmental impact. Similarly, for the ICT sector, metrics like the number of internet service providers and the Fixed-Broadband Internet Basket gauge the level of digital connectivity, a crucial driver for modern economic development.

Table 3: Proposed DERA 2.0 Sector Model

Indicators	Indicator Weight	Sources
Energy		
<i>Average practical potential (PVOOUT Level 1, kWh/kWp/day PLUS Wind Generation kWh/Capita), long-term</i>	30%	World Bank + Solargis
<i>Levelised cost of Energy (LCOE)</i>	30%	World Bank + Solargis
<i>PCI – Energy</i>	40%	UNCTAD Stats, updated yearly
ICT		
<i>Number of internet service providers</i>	15%	ITU Data Hub, updated yearly
<i>Fixed-broadband Internet basket</i>	15%	ITU Data Hub, updated yearly
<i>Mobile cellular data & voice high-cons. basket</i>	15%	ITU Data Hub, updated yearly
<i>Broadband services part of universal access</i>	15%	ITU Data Hub, updated yearly
<i>PCI – ICT</i>	40%	UNCTAD Stats, updated yearly
Transport Infrastructure		
<i>Logistics perform. index: Quality of trade & transp.-related</i>	40%	World Bank, updated as of 2022
<i>PCI transport</i>	60%	UNCTAD Stats, updated yearly
Finance		
<i>Domestic credit to priv. sector by banks (% GDP)</i>	33%	World Bank, updated yearly
<i>Financial Institutions Access</i>	33%	IMF, updated yearly
<i>Financial Market Access Index</i>	33%	IMF, updated yearly
Water Management		
<i>Progress on Integrated Water Resources Mgmt.</i>	75%	UN Water Database, updated '20
<i>Water use efficiency (USD/m³)</i>	25%	Aqueduct, updated yearly

The Sector Model's comprehensive range of indicators, including those for Finance and Water Management, like Domestic Credit to the Private Sector and Water Use Efficiency, respectively, further demonstrate its depth. These indicators help assess sectors not only based on their current performance but also on their potential to drive transformative economic changes in line with DEG's impact goals. The weightages assigned to each indicator within a sector underscore the prioritization based on their relevance to DEG's investment strategy and the sector's unique characteristics. This holistic approach ensures that investments are not just financially sound but also contribute meaningfully to sustainable development. By aligning sector-specific potentials with the broader economic and developmental objectives of the countries, the DERA 2.0 Sector Model³ plays a pivotal role in creating a sustainable and impactful investment strategy for DEG.

³ For additional details of the sector model, such as dealing with missing values, calibration etc. see Annex B

5. Other DFI Approaches

This section provides a brief overview of how other bilateral DFIs selected the countries, sectors, and potentially firms for their investments. Utilizing publicly available data, we analyzed major bilateral DFIs including such as BII, FMO, Norfund, and Swedfund as well as the IFC, a globally active multilateral DFI.

We examined the publicly accessible elements of BII's 2022-26 strategy, FMO's 'Strategy towards 2030', Norfund's '2023-2026 strategy', and others. Where it was relevant to the updated DERA toolkit, we also considered previously utilized selection strategies, such as BII's 'Grid' country and sector selection process.

BII

British International Investment (BII) has implemented a comprehensive strategy for the period 2022 to 2026, titled "Productive, Sustainable and Inclusive Investment" (BII, 2022), to address the financing needs in developing and emerging countries, particularly in areas of infrastructure and enterprise. BII plans to invest between £1.5 and £2 billion annually during this period (BII, 2023).

This strategy is a cornerstone of the UK's commitment to international development, and it is structured around three key strategic objectives:

1. **Productive Development:** This aspect focuses on boosting the productivity of economies to ensure a decent standard of living for all. It involves investments that drive innovation and technological advancements, aiming to elevate economic efficiency and output.
2. **Sustainable Development:** BII is dedicated to transforming economies to be more environmentally sustainable. This includes investments in green infrastructure, clean energy, and projects that contribute to reducing carbon emissions and adapting to climate change.
3. **Inclusive Development:** The strategy emphasizes the importance of distributing the benefits of economic growth equitably. This involves targeting investments that specifically aid poor and marginalized sections of society, ensuring that development is not only widespread but also inclusive.

The investment focus is broad, encompassing various sectors crucial to economic and social development. These sectors include major infrastructure, financial services, information and communications technology (ICT), healthcare, food and agriculture, and manufacturing. Each sector is selected for its potential to contribute to the Sustainable Development Goals (SDGs) and for its capacity to catalyze transformative change in the economies of the targeted regions. The SMART industries - services, manufacturing, agriculture, real estate, construction, technology, and telecoms - are central to BII's investment focus, alongside a commitment to infrastructure development and climate change initiatives. This approach is tailored to accommodate various risk profiles and capitalizes on the unique opportunities presented in the targeted regions.

Geographically, BII's strategy spans multiple regions with a significant focus on Africa, Asia, and the Caribbean. In the Indo-Pacific region, specifically in larger economies like the Philippines, Indonesia, and the Mekong region (Vietnam, Cambodia, and Laos), the focus is on climate investment, particularly in renewable energy. The Caribbean region is also being

eyed for expansion, with the strategy including the potential for climate finance and infrastructure development.

BII's approach is not one-size-fits-all; it is tailored to the specific needs and opportunities of each country and region. This involves maintaining a significant presence in powerhouse countries like Nigeria, Egypt, and Pakistan, and focusing on more mature markets such as India and South Africa, particularly for climate-related investments. In smaller, more fragile countries, BII typically channels its investments through regional companies, platforms, and specialist intermediaries.

The strategic vision of BII is deeply aligned with the United Nations' 2030 Sustainable Development Goals (SDGs) and the Paris Agreement. The strategy recognizes both the challenges and the immense potential in Africa and Asia, considering factors like the youthful demographics, underutilized labour and capital, and the favourable conditions for renewable energy.

BII's strategy is also shaped by a keen understanding of the role of private investment in development. It acknowledges the critical function of publicly-owned development finance institutions and aims to maximize the social returns on investment. This involves not only providing finance but also building partnerships with like-minded organizations and using BII's proximity to the City of London to mobilize commercial investors. The goal is to cement the UK's position as a development finance hub, fostering a geographically diverse approach that bolsters BII's existing strong profile in Africa and South Asia.

1. Strategic Objectives and Sector Focus:

- BII aims to achieve productive, sustainable, and inclusive development. This involves raising the productivity of economies, transforming economies to be environmentally sustainable, and ensuring the benefits of development are shared with poor and marginalized sections of society.
- To meet these objectives, BII focuses on digital transformation, climate finance, and investments that qualify under the 2X Challenge as 'gender lens' finance.
- The sectors targeted include major infrastructure, clean power, energy systems, sustainable transport, logistics, climate-resilient urban infrastructure, utilities, and the SMART sectors (services, manufacturing, agriculture, real estate, and technology). These sectors are chosen for their potential for digital transformation and positive impact on women, marginalized groups, the environment, and the growth of small and medium-sized enterprises (SMEs).

2. Country-Specific Approaches:

- BII tailors its approach to individual countries to meet their unique needs and opportunities. It maintains a significant presence in 'Powerhouse' countries like Nigeria, Egypt, and Pakistan, and continues to focus on more mature countries like India and South Africa, particularly for climate finance.
- In smaller, fragile, and extremely fragile countries, BII typically invests through regional companies, platforms, and specialist intermediaries. The strategy includes expanding climate-finance offerings to the Indo-Pacific and having the flexibility to invest in the Caribbean.

3. Overall Perspective on Development Opportunities:

- BII's strategy is aligned with achieving the UN's 2030 Sustainable Development Goals (SDGs) and the Paris Agreement. It views the opportunities in Africa and Asia through the lenses of productive growth, sustainable green growth, and inclusive growth.
- The strategy acknowledges the challenges but also the potential in these regions, especially given the young and growing population, low labour productivity and capital intensity, and the favourable conditions for renewable energy.

Figure 1. BII's approach to country and sector selection

01 Our impact objectives	We will be driven by three strategic objectives that will build back for a better world – and are rooted in the future opportunities that Asia and Africa present	Productive Addressing constraints to economic growth and catalysing markets, including through digital transformation	Sustainable Financing a cleaner, greener planet, with climate finance >30% of all new commitments	Inclusive Investing to support more marginalised groups, with gender lens finance >25% of all new commitments	
	02 How we will deliver	We will invest in economic sectors that make up modern thriving economies We will provide solutions to firms and markets through our flexible toolkit and appetite for risk We will take a segmented approach to diverse geographies, to inform our in-market presence and offer We will expand into new geographies*	Infrastructure and climate change Investing across the capital spectrum from equity to senior debt, including via large 'tickets'	SMART industries Services, Manufacturing, Agriculture, Real Estate and construction, and Technology and telecoms Using multiple channels – direct into companies, banks and projects and through a range of intermediaries	Financial services Using our Growth and Catalyst portfolios to bring different risk tolerances for differential impact
		Mature (India and South Africa)	Powerhouses (Nigeria, Egypt, Pakistan, Kenya, Bangladesh, Ethiopia)	Economically stable	Poorest and most fragile
		Indo-Pacific climate finance expansion and ODA-eligible countries in the Caribbean			

Source: BII (2022)

BII's strategy for 2022 to 2026 is a multifaceted and ambitious plan that seeks to leverage investment as a tool for productive, sustainable, and inclusive development across several developing and emerging regions. This strategy is operationalized through targeted investments in key economic sectors, a nuanced approach to different country needs, and a commitment to climate finance and digital transformation.

FMO

The Dutch entrepreneurial development bank FMO, like other Development Finance Institutions (DFIs), invests in the private sector to create jobs, deliver impact, and generate a

financial return (FMO, 2022). DFIs are usually majority-owned by national governments (bilateral DFIs) or international organisations (multilateral DFIs) such as the World Bank.

The main aims of DFIs like FMO are to reduce poverty over the long run through private investment, to increase economic opportunity and the growth of the formal sector, where businesses and employees are registered, monitored, and taxed by Governments. FMO focuses on three Sustainable Development Goals (SDGs) that it can most impact through its financing in emerging markets: Decent Work & Economic Growth (SDG 8), Reduced Inequalities (SDG 10), and Climate Action (SDG 13), working closely with partners to achieve this (FMO, 2022).

FMO's approach to sector and country selection involves (FMO, 2022b):

- **Market Creation:** Making unbankable opportunities bankable by developing ecosystems that seed and nurture nascent segments and businesses, through collaboration and partnerships.
- **High-Impact and High-Risk Investments:** Leveraging public funding to support entrepreneurs working on new business models or operating in low-income countries.
- **Supporting Proven Models:** Financing and supporting proven models through its own balance sheet, providing bankable businesses and projects with debt equity guarantees and capacity development.
- **Mobilizing Commercial Investors:** Scaling impact by bringing opportunities into the mainstream, introducing new fund propositions, and blending public and commercial funding.
- **Focus Sectors:** Concentrating on three sectors - Agribusiness, Food and Water; Energy; and Financial Institutions - contributing to food security, access to renewable energy, and a healthy financial sector, aligning with other SDGs like Zero Hunger (SDG 2), Gender Equality (SDG 5), and Affordable and Clean Energy (SDG 7).
- **Inclusive Economic Growth:** Enabling entrepreneurs to make local economies more inclusive, productive, resilient, and sustainable, focusing on job creation and quality.
- **Reducing Inequalities:** Investing in the world's least developed markets, particularly in fragile states, and aiming to increase opportunities and income for people in the bottom 40% of income distribution. It supports the growth of inclusive businesses and increases gender lens investments.
- **Climate Action:** Committed to the goals of the Paris Agreement, aiming for net-zero by 2050 through a just and inclusive transition. It builds a portfolio supporting mitigation, adaptation, resilience, and biodiversity-positive contributions to achieve its ambitions.

In terms of country selection, DFIs may choose different strategic directions when it comes to their approach in fragile states, along two dimensions: i) approach to conflict, which can range from a minimal 'do no harm' approach to one of positively impacting fragility and conflict, and ii) approach to development, which can range from seeking narrow development impact to transformative development impact (FMO, 2022b).

Norfund

Norfund, the Norwegian Investment Fund for Developing Countries, has a strategic approach to selecting sectors and countries for investment. Their strategy for 2023 – 2026 is designed to create jobs and improve lives by investing in businesses that drive sustainable development (Norfund, 2023).

The strategy is based on two key criteria: additionality and impact. Additionality refers to the provision of capital in areas where other investors are reluctant to invest due to high risk. Impact refers to the potential for strong development outcomes in these areas. In addition to providing financial capital, Norfund also adds non-financial value in the form of expertise and active ownership to the investments they make. This value-additionality can improve both the financial profitability and the development impact of the companies (Norfund, 2023).

Norfund has identified four investment areas where the potential for development impact is substantial and that align with the Sustainable Development Goals (SDGs): Renewable Energy, Financial Inclusion, Green Infrastructure, and Scalable Enterprises. Access to renewable energy and finance are crucial infrastructural prerequisites for growing businesses. Scalable enterprises with significant potential for growth and job creation are key to sustainable economic growth over time. Well-functioning waste and water management, part of Green Infrastructure, are crucial for sustainable growth of cities and towns, to reduce adverse environmental impacts and to improve people's standards of living (Norfund, 2023).

In terms of country selection, Norfund targets selected countries where capital is scarce and international investments will have high impact potential. For the next strategy period, they will retain a focused country strategy targeting 30 countries where they will actively seek to build pipeline and market expertise. These countries were selected based on three criteria: Competence – Norfund has solid market knowledge of and expertise in these countries; Additionality – they have considerable investment needs but few alternative investors; Attractiveness – each country has sufficient investment opportunities within Norfund's investment areas. In addition to their core target countries, Norfund may also invest directly in other countries in Sub-Saharan Africa and Least Developed Countries together with partners on a selective basis (Norfund, 2023).

Norfund's strategy for 2023-2026 focuses on creating jobs and improving lives through sustainable business investments. This strategy emphasizes two main areas: investing in selected business areas and targeting specific developing countries.

1. **Investing in Selected Business Areas:** Norfund invests in Renewable Energy, Financial Inclusion, Green Infrastructure, and Scalable Enterprises, aligning with the Sustainable Development Goals (SDGs). These sectors are chosen for their significant development impact potential, such as enabling access to renewable energy, finance, and sustainable urban infrastructure, and fostering job creation and growth (Norfund, 2023).
2. **Targeting Selected Developing Countries:** The strategy involves focusing on 30 countries where capital is scarce and international investments can have high impacts. These countries are selected based on Norfund's competence, the additionality of investments, and their attractiveness in terms of investment opportunities within Norfund's investment areas. Norfund may also invest in other countries in Sub-Saharan Africa and Least Developed Countries selectively, alongside partners (Norfund, 2023).

Swedfund

Swedfund, the Swedish Development Finance Institution (DFI), has a strategic approach to selecting sectors and countries for investment. They aim to establish a good balance between risk-taking, geographical spread, and variation in investment instruments, such as equity, funds, and loans. Swedfund invests directly in companies and indirectly through financial institutions and funds, with the goal of increasing the proportion of small and medium-sized enterprises and promoting entrepreneurship (Swedfund, 2022). Their portfolio's total contracted amount at the close of 2021 was over 8.4 billion SEK, divided between 64 investments (Swedfund, 2022).

In terms of sector selection, Swedfund's portfolio for 2022 was distributed as follows: Financial inclusion (59%), Energy & Climate (33%), Health (6%), and Other (2%) (Swedfund, 2022). Its investments are focused on three primary sectors: Energy and Climate, Financial Inclusion, and Sustainable Enterprises. These focus areas are integral to their mission and enhance their effectiveness (Swedfund, 2019).

1. **Energy and Climate:** This sector emphasizes investing in renewable energy sources such as solar, wind, and hydro power since 2014, aligning with the 2030 Agenda for Sustainable Development and SDG 7. Their investments aim to provide stable electricity supply, crucial for job creation and poverty reduction. Additionally, Swedfund invests in projects related to energy efficiency, water, and sanitation. These investments also target gender equality and women's empowerment.
2. **Financial Inclusion:** Swedfund focuses on supporting small and medium-sized businesses in developing economies, recognizing their role in job creation and economic development. They aim to address the financing gap faced by these businesses. Swedfund invests in financial institutions like banks and microfinance institutions that support small businesses and low-income individuals. They also invest in various funds to broaden their impact, significantly contributing to the capital available for small and medium-sized businesses in poorer countries.
3. **Sustainable Enterprises:** This sector is dedicated to increasing access to capital for micro, small, and medium-sized companies, focusing on healthcare and digitalization. Swedfund invests in private equity and venture capital funds, co-investments, and direct fund investments in healthcare. Their strategy encompasses generalist and sector-specific investments to foster sustainable business growth and development.

They invest in equity, provide loans, and use funds to reach more people. Their investments help to create more jobs with decent working conditions and improve access to essential products and services in the world's most vulnerable countries (Swedfund, 2022).

For geographical selection, Swedfund's portfolio per region for 2022 was distributed as follows: Africa (65%), Asia (30%), Eastern Europe (5%), Latin America (0%), and Other (0%) (Swedfund, 2022). The 'Other' category, which historically included investments with a broad geographical mandate, was distributed to underlying countries based on actual distribution and qualified pipeline (Swedfund, 2022). Swedfund (2022b) state that their geographic focus is on least developed countries, mostly in Sub-Saharan Africa as well as in post-conflict low and middle income countries and in some exceptional cases also in upper-middle income countries.

Swedfund's investment strategy is designed to create sustainable development for more people. In recent years, several global crises have negatively impacted the implementation of Agenda 2030. To reverse the trend and overcome challenges such as increasing poverty,

climate change, and inequality both within and between countries, various types of tools and initiatives will be needed that create positive effects for the future (Swedfund, 2022).

IFC

The International Finance Corporation (IFC), a member of the World Bank Group (WBG), plays a pivotal role in guiding investments to stimulate economic growth and development in Emerging Markets and Developing Economies (EMDEs). Operating under the strategic framework of the WBG Evolution Roadmap, the IFC's approach is tailored to combat the complexities of the current global financial landscape and to address the persistent challenges of poverty and underdevelopment.

The IFC's strategic priorities for the 2024 to 2026 financial year build upon the foundations set in the previous 2023 to 2025 Strategic Business Outlook and are firmly rooted in the Capital Increase Package for 2030 commitments. These priorities are in strong alignment with the WBG Evolution Roadmap and focus on intensifying efforts and expanding scale in five key areas (IFC, 2023). As part of this strategic direction, the IFC is committed to a substantial capital increase under a \$5.5 billion agreement. By 2030, the IFC aims to more than double its aggregate annual delivery, more than triple its annual own-account investment in the poorest and most fragile countries, and more than quintuple its annual own-account commitments to the most impoverished countries, identified as low-income International Development Assistance (IDA) countries, and fragile and conflict-affected IDA nations. Additionally, there is a goal to triple the annual climate-related own-account financing and quadruple the annual own-account financing dedicated to women, setting ambitious targets to drive substantial impact in these crucial areas (IFC, 2021). This translates to a focus on the following six strategic priority areas:

1. **Alignment with WBG Evolution Roadmap:** The IFC's strategies are in sync with the WBG's broader objectives. This includes a focus on poverty reduction, sustainable development, and tackling global challenges.
2. **Climate Change:** Commitment to green and sustainable projects to combat the impact of climate change.
3. **Gender and Inclusion:** Promoting equal opportunities in economic activities, emphasizing gender equality and inclusivity.
4. **Resilience Building:** Strengthening food security and health systems, particularly critical in the post-pandemic era.
5. **Addressing Fragility:** Concentrating efforts on regions grappling with conflicts or instability.
6. **Digitalization:** Encouraging the adoption of digital technologies to spur economic growth.

The IFC's approach to selecting countries and sectors for investment is intertwined with its strategic focus areas. Its country priorities follow these three principles:

1. **Low-Income and Middle-Income Countries (LICs and MICs):** The IFC places a high priority on investments in LICs and MICs. In LICs, the focus is on food security, job creation, and economic transformation. For MICs, the emphasis is on serving underserved populations, enhancing financial access for MSMEs, and addressing climate, gender, and social inclusion challenges.

2. **Fragile and Conflict-Affected Situations:** These areas receive special attention due to their need for greater support in stabilization and rebuilding.
3. **International Development Assistance (IDA) Countries:** These countries, usually the poorest, are central to the IFC's mission, aligning with the WBG's overarching goals.

The sector selection process is based on its strategic priority and focus areas, in turn translating to the following priority investment sectors:

1. **Climate-Related Sectors:** Investment in sectors like renewable energy and sustainable agriculture is a priority.
2. **Health and Education:** Emphasis on sectors that build community resilience, crucial for creating robust health and education systems.
3. **Technology and Digitalization:** Targeting sectors that drive digital transformation, essential for contemporary economic development.
4. **Financial Inclusion:** Focusing on the financial sector to broaden finance access for MSMEs.
5. **Infrastructure Development:** Investments aimed at sustainable and inclusive growth in infrastructure.

The IFC employs blended finance and Private Capital Mobilization (PCM) as key tools in their investment strategy. These mechanisms are crucial for drawing private investment into LICs and MICs, especially in innovative sectors like technology and climate adaptation. Blended finance, which combines public and private funds, is instrumental in mitigating investment risks and attracting diverse capital sources with varying risk appetites.

The IFC is continually adapting its strategies to address the evolving challenges in EMDEs. This adaptability includes responding to economic downturns, political instabilities, and global issues such as the COVID-19 pandemic. Their approach remains flexible but focused, ensuring that investments are impactful and aligned with their strategic objectives.

The IFC's investment strategy is a sophisticated blend of strategic alignment with the WBG's goals, targeted country and sector selection, and the innovative use of financial tools like blended finance and PCM. Through this approach, the IFC aims to catalyze private investment in EMDEs, addressing the dual objectives of sustainable development and poverty alleviation. This strategy, while addressing immediate economic needs, also lays a foundation for long-term, sustainable growth and development, balancing the demands of various stakeholders, from local communities to international development agendas.

6. Conclusion

In terms of the **Country Model**, the proposed evaluation framework encompassing Economic Vulnerability, Additionality and the Economic Capacity indicators offers a multi-dimensional approach to assessing countries for Development Finance Institution (DFI) investments. The integration of Gross National Income (GNI) per capita and the Economic Vulnerability Index (EVI) in the vulnerability assessment provides a robust understanding of each country's susceptibility to economic and environmental risks. GNI per capita, as a reflection of national wealth and economic health, is crucial in determining the economic status of countries and their need for external financial support. Meanwhile, the EVI offers deeper insights into specific vulnerabilities, such as exposure to economic and environmental shocks, demographic challenges, and reliance on vulnerable sectors.

The Additionality Indicators, comprising the Financial Development Index (FDI) and the Financial Inflow Index (FII), play a pivotal role in assessing the capacity of a country's financial system. These indicators highlight the extent to which domestic financial markets can meet the investment needs of businesses, revealing opportunities for DFIs to supplement where needed. The FDI's focus on the maturity of financial institutions and markets, along with the FII's emphasis on financial inflows like Foreign Direct Investment and remittances, provide a comprehensive view of the financial robustness and needs of a country.

Furthermore, the Economic Capacity Sub-Score, through indicators like the Trade Concentration and Diversification Index (TCD), Labor Productivity, the structural change component of the Productive Capacity Index (PCI), and the Economic Complexity Index (ECI), sheds light on the extent of a country's economic transformation. These metrics collectively assess a country's shift towards higher productivity activities, the diversification of its economy, and the complexity of its productive capabilities. They are essential in understanding a nation's potential for sustainable growth and resilience against future economic shocks.

This multifaceted evaluation approach, with its detailed and diverse indicators, is instrumental for DFIs in identifying the most appropriate investment opportunities. By considering aspects such as economic vulnerability, financial development, and economic capacity, DFIs can make more informed decisions. These decisions not only target the most pressing needs but also align with the strategic objectives of fostering economic stability, sustainable development, and resilience in developing countries. As global challenges continue to evolve, the relevance and application of these indicators are crucial in guiding the allocation of financial resources, ensuring that they are directed towards areas where they can make the most significant impact.

The **Sector Model** Indicators provide a multifaceted approach to assessing and enhancing sustainable economic development. Each set of indicators, encompassing energy, ICT, transport infrastructure, finance, and water management, plays a crucial role in understanding and optimizing the various dimensions that contribute to growth and development.

The energy indicators highlight the importance of sustainable energy sources in driving economic growth. Metrics like average practical potential (PVOU Level 1), Levelized Cost of Electricity generation (LCOE), and PCI for Energy emphasize the potential, cost-effectiveness, and broader economic impact of renewable energy. These indicators are critical in guiding investments and policies towards environmentally sustainable and economically viable energy solutions.

In the realm of ICT, the indicators such as the number of internet service providers, fixed-broadband Internet basket, and mobile cellular data and voice high-consumption basket, together with PCI for ICT, underscore the pivotal role of digital connectivity and infrastructure in economic development. They reflect the significance of ICT in enhancing business operations, facilitating information exchange, and ensuring access to global markets. The integration of ICT into daily life and business is crucial for boosting productivity and competitiveness in the digital age.

Transport infrastructure indicators, including the Logistics Performance Index and PCI for transport, emphasize the importance of efficient and reliable transport networks. Good transport infrastructure is essential for the movement of goods and people, directly impacting trade efficiency and economic productivity. These indicators serve as a guide for investments in transport infrastructure to enhance economic competitiveness and facilitate growth.

Financial indicators like Domestic Credit to the Private Sector by Banks, Financial Institutions Access, and Financial Market Access Index highlight the critical role of a robust financial system in economic development. They provide insights into the health and efficiency of a country's financial sector, crucial for mobilizing savings, allocating capital, and facilitating transactions.

Lastly, water management indicators such as Progress on Integrated Water Resources Management and Water Use Efficiency stress the importance of effective water management in sustainable development. These metrics are vital for sectors like agriculture and manufacturing, which heavily depend on water, underscoring the need to manage water resources sustainably while supporting economic activities.

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Annex A: Country Model Guide

Overall Scoring

The country model is divided into three sub-scores: vulnerability, additionality and transformative sub-scores, each of these sub-scores aims to capture a different facet of the development impact potential of an investment within a given country:

Vulnerability: Targeting finance to the most vulnerable areas of our world

Additionality: Raising access to finance for economies that cannot access finance within their domestic markets or via existing resources

Transformative: Transforming countries whose economic base isn't productively serving their transformation

Each sub-score is worth up to ten points, for a total of 30 points across all three sub-scores.

Table A1: Overall Scoring System Example

Country	Income classification	DEG country	Vulnerability Sub-score	Additional Sub-score	Transformative Sub-score	TOTAL Score (0-30)	TOTAL Score (0-5)
Angola	LMC	DEG country	9	9	10	28	5
Malawi	LIC	DEG country, considered for investment	10	9	9	28	5
Yemen, Rep.	LIC	DEG country	8	10	10	28	5
Burkina Faso	LIC	DEG country, considered for investment	10	9	9	27	5
Ethiopia	LIC	DEG country, considered for investment	8	9	10	27	5

These can then also be mapped to a 0 to 5 scoring system, with the ranges as follows:

Table A2: Two approaches to scoring

Score (0-5)	Score (0-30)
0	0-5
1	,5-10
2	,10-15
3	,15-20
4	,20-25
5	,25-30

Higher scores indicate a greater probability that DEG investments will provide positive developmental outcomes. Across all the sub-scores and within each sub-score component, higher scores are assigned to countries the further they are down in the rankings for each metric. This is so that countries with at lower development stages are assigned higher scores as they would benefit the most from DEG investments.

For each of the indicators below, the scores were all also divided into a 0 to 5 system. For each indicator, the ranges have been chosen in such a way as to create a representative distribution of countries across the different point ranges, this was done in order to mitigate potential outlier impacts on score ranges. For example, if there is an obvious outlier, dividing the full range of data points (from the smallest to the largest value) in five equal bucket, may result in certain scores only being occupied by one or two countries, grouping the majority of other countries within one or two scores. Instead, by dividing the ranges according to an approximately equal distribution of countries we maintain a larger score spread.

This representative distribution was achieved by conducting a calibration exercise in order to detect univariate outliers. A graphical check for outliers was conducted by generating a box plot and a histogram and a box plot for each indicator within the model. If no obvious outliers appeared graphically a second quantitative check for outliers was conducted. This was done by carrying out a Grubbs test which indicates how many sample standard deviations away from the sample mean are the data in question (here large values indicate outliers). Outliers were then temporarily removed from the sample and five even buckets were calculated the outliers were then reinserted as the smallest/largest value of the representative 0 or 5 score.

For countries missing values, where possible⁴, the score of its representative income classification group was used. Where this was not possible a country was scored 3.

Vulnerability Sub-Score

The vulnerability sub-score includes two metrics aimed at assessing the economic and environmental vulnerability of a country. The metrics used are the **Gross National Income (GNI) per capita** and the **Economic Vulnerability Index (EVI)** country score. Each score has a maximum of 5 points.

Gross National Income per Capita

Gross National Income (GNI) per capita is the monetary value of a country's final income within a given year, divided by its total population. It represents the total amount of money earned by a country's people and its businesses, domestically and abroad. Unlike Gross Domestic Product (GDP), it measures a country's wealth in terms of income rather than output. The model therefore uses the GNI per Capita as a method to estimate the average wealth of a citizen within the country. Higher wealth countries will be less likely to require DFI investments, therefore we score the GNI per capita as follows:

⁴ If the dataset provided LIC and L&MIC scores.

Table A3: GNI Scoring

Range	Classification
<=\$1135	5
\$1136 - \$3102	4
\$3103 - \$7339	3
\$7340 - \$11576	2
\$11577 - \$13845	1
>=\$13845	0

Economies have been divided into five income groupings using the Upper-Middle Income Country (UMIC) maximum threshold as the cutoff. We use this cutoff as DEG cannot lend to countries that surpass the maximum threshold for UMIC under the World Bank Atlas⁵ method. For the current 2024 fiscal year UMIC are those with a GNI per capita between \$4,466 and \$13,845. Any economy with a GNI per capita >\$13,845 is a High-Income Country (HIC) which DEG does not lend to will receive a score of 0.

The GNI per capita data is sourced from the World Bank, it is updated on a yearly basis (July) and was last updated in July 2023.

Economic Vulnerability Index

The **Economic Vulnerability Index** (EVI) is a composite indicator used by the United Nations to inform its Least Developed Country (LDC) classification process. The EVI is composed of eight sub-indicators (see Country Model section above). The EVI score is subsequently scored in the sub-component as follows:

Table A4: EVI Scoring

EVI Score	Sub-Component Score
<=12.96	0
12.97 - 23.10	1
23.11 - 29.15	2
29.16 - 35.20	3
35.21 - 41.25	4
>=41.26	5

The EVI is prepared by the United Nations Department of Economic and Social Affairs (UN-DESA).

⁵ The Atlas Method is used to smooth out exchange rate fluctuations by using a three-year moving exchange rate average with the USD

Additionality Sub-Score

The additionality sub-component measures whether the country's financial system can allow local firms to raise finance for investments or whether external sources of finances (such as DFIs) are required. The sub-score is made up of two components, the **Financial Development Index** and the **Financial Inflow Index**.

Financial Development Index

The **Financial Development** index is a relative ranking of countries on the depth access and efficiency of their financial institutions and financial markets, it is an aggregate of the financial institutions index and financial market index. The FD index scores are mapped to the sub-score as follows:

Table A5: Financial Development Index Scoring

Range	Score
<=1.19	5
1.2 - 1.8	4
1.81 - 2.41	3
2.42 - 3.02	2
3.03 - 4.25	1
>=4.26	0

The index is updated, by the International Monetary Fund (IMF), on an annual basis. It was last updated in July 2023.

Financial Inflow Index

The **Financial Inflow Index** is a composite score based on the sum of Foreign Direct Investment (FDI) inflows (as a percentage of Gross Domestic Product) and remittances inflows (as a percentage of GDP). This is a composite index using two different datasets ('FDI Inflows as a % of GDP' and 'Remittances as a % of GDP') available from the [World Development Indicators](#) prepared by the World Bank. Both were last updated in July 2023 and are updated on an annual basis.

Table A6: Financial Inflow Index Scoring

Range FDI Inflows as a % of GDP	Score	Range Remittances Inflows as a % of GDP	Score
<=0.68%	5	<=0.26%	5
0.69% - 2.57%	4	0.26% - 0.54%	4
2.57% - 4.46%	3	1.54% - 2.82%	3
4.46% - 6.35%	2	2.82% - 4.1%	2
6.35% - 8.24%	1	4.1% - 6.64%	1
>=8.24%	0	>=6.64%	0

The two scores are subsequently averaged to give a score out of five.

Economic Capacity Sub-Score

The economic capacity sub-score aims to understand how far a country's economic transformation process has progressed. Economic transformation is the movement from lower productivity activities into higher productivity activities, both within and between sectors as well as within firms. Economic transformation also posits the capacity to produce higher complexity goods and increased diversification of exports.

The economic capacity sub-score is therefore made up of four indicators which reflect these processes. These are the **trade concentration and diversification index**, **labour productivity**, the Productive Capacity Index's **structural change indicator** and the **economic complexity index**.

Trade concentration and diversification index

The **trade concentration and diversification (TCD)** index measures, for each country, the degree of concentration of goods exported. It tells us if a large share of a country's exports is accounted for by a small number of commodities or, on the contrary. It can be used as a warning sign of low export diversification, with ensuing economic vulnerabilities. The data stems from the [UNCTADStat](#) database and is updated yearly, with the last update occurring in 2022. The scoring system divides the countries into five categories as follows:

Table A7: TCD Scoring

TCD Range	Score
>=0.7	5
0.7 - 0.5	4
0.5 - 0.3	3
0.3 - 0.2	2
0.2 - 0.1	1
<=0.1	0

Labour Productivity

Labour productivity helps understand whether, on average, workers are engaged in higher or lower productivity activities. The dataset covers all economic sectors, therefore provides a holistic look at the productivity levels of a country. Labour productivity is calculated as GDP per hours worked, with GDP measured in constant 2017 US Dollars, PPP. The data is for 2021 and is provided by the International Labour Organisation's [ILOStat](#). The scoring range for labour productivity is as follows:

Table A8: Labour Productivity Scoring

Labour Productivity Range	Score
<=\$11.4	5
\$11.4 - \$22.8	4
\$22.8 - \$34.2	3
\$34.2 - \$45.6	2
\$45.6 - \$57	1
>=\$57	0

Structural Change

The structural change indicator is a component of the **Productive Capacity Index (PCI)**. The indicator is made up of two components. The first is Gross Fixed Capital Formation as % of GDP and industrial ratio (industry and services over GDP). The second is the industrial ratio, which is the ratio of GDP occupied by the industrial and services sectors. The PCI is produced by UNCTAD and is updated on an annual basis. The scores are given below:

Table A9: Structural Change Scoring

Structural Change Range	Score
<=41.76	5
41.76 - 50.67	4
50.67 - 59.58	3
59.58 - 68.49	2
68.49 - 77.4	1
>=77.4	0

Economic Complexity

The **Economic Complexity Index (ECI)** is a holistic measure of the productive capabilities of large economic systems, usually cities, regions, or countries. For the sub-indicator, country level ECI scores are used. The ECI is produced on an annual basis by the Atlas of Economic Complexity. The scores for the ECI are as follows:

Table A10: ECI Scoring

ECI Rank Range	Score
<=25.27	0
25.27 - 50.54	1
50.54 - 75.81	2
75.81 - 101.08	3
101.08 - 126.35	4
>=126.35	5

Annex B: Sector Model Guide

Overall Scoring

Since the sector model uses an array of various data sources to create a composite score for each sector, countries are score based on a “standard score” as illustrated in table B1 below. The “standard score” is the number of standard deviations by which the value of a raw score (i.e., data point like domestic credit to private banks measured as % of GDP, or water use efficiency measured in USD/m³ units) is above or below the mean value of all countries. Raw scores above the mean have positive standard scores, while those below the mean have negative standard scores.

Table B1: Categorisation of Standardised Scores, Sector Model

Standard score	Category	In words
-10.00	5	Very high relevance
-0.75	4	High relevance
0.00	3	Medium relevance
0.50	2	Low relevance
0.75	1	Very low relevance
1.00	0	No relevance

The “standard score” shows to what extent the performance of a country deviates from the international average standardization is based on 177 countries, including developed world. For example, in 2022 across all countries domestic credit to private banks was on average 57.7% of GDP, compared to 32.3% in Senegal. The standard score expresses the relationship between these two data points. In other words, domestic credit to the private sector Senegal, whose standard score is -0.5, is half (0.5) standard deviations below (since the standard score is negative) the average. If this indicator was then directly reflected onto the 0-5 range (see Table B1 above) Senegal would score a 4.

Basing scoring on standard deviation takes the level of development into account, e.g. transportation is relevant for almost all DEG countries, whereas the financial sector is quite well developed in some and much less developed in other countries. Scoring based on quartiles (one alternative) would not reflect this.

The standard score is calculated by subtracting the population mean from an individual raw score and then dividing the difference by the population standard deviation. This process of converting a raw score into a standard score is called standardising.

To easily assess a country's performance in a way that is compatible with the country score the "standard scores" are then mapped to a 0 to 5 scoring system⁶, with the ranges illustrated in Table B1 above. For countries missing values, where possible⁷, the score of its representative income classification group was used. Where this was not possible a country was scored 3, 0 standard deviations away from the average.

Table B2: Sector Indicators, Weights and Sources

Indicators	Indicator Weight	Sources
Energy		
<i>Average practical potential (PVOUT Level 1, kWh/kWp/day PLUS Wind Generation kWh/Capita), long-term</i>	30%	World Bank + Solargis
<i>Levelised cost of Energy (LCOE)</i>	30%	World Bank + Solargis
<i>PCI – Energy</i>	40%	UNCTAD Stats, updated yearly
ICT		
<i>Number of internet service providers</i>	15%	ITU Data Hub, updated yearly
<i>Fixed-broadband Internet basket</i>	15%	ITU Data Hub, updated yearly
<i>Mobile cellular data and voice high-consumption basket</i>	15%	ITU Data Hub, updated yearly
<i>Broadband services part of universal access</i>	15%	ITU Data Hub, updated yearly
<i>PCI – ICT</i>	40%	UNCTAD Stats, updated yearly
Transport Infrastructure		
<i>Logistics performance index: Quality of trade and transport-related</i>	40%	World Bank, updated as of 2022
<i>PCI transport</i>	60%	UNCTAD Stats, updated yearly
Finance		
<i>Domestic credit to private sector by banks (% of GDP)</i>	33%	World Bank, updated yearly
<i>Financial Institutions Access</i>	33%	IMF, updated yearly
<i>Financial Market Access Index</i>	33%	IMF, updated yearly
Water Management		
<i>Progress on Integrated Water Resources Management</i>	75%	UN Water Database, updated 2020
<i>Water use efficiency (USD/m3)</i>	25%	Aqueduct, updated yearly

Finally, each sector indicator was given a weight (see table B2 above), which is used to provide the final weighted score per sector. This results in a final table of scores per country, an illustrative selection of which is highlighted in table B3 below.

⁶ Scores were generally categorised per 0.25 standard scores, aside from the benchmark for the fifth score since countries which were more than one standard below the average were in a range between -1 and -2. This benchmark could be changed to -2 and no score would change.

⁷ If the dataset provided LIC and L&MIC scores.

Table B3: Sector Scores, per Country (illustrative)

Country	DEG Country	Energy	Infrastructure	Finance	ICT	Water Management
Afghanistan	DEG country, considered for investment	4	4	5	4	5
Albania	DEG country, considered for investment	4	4	3	4	4
Algeria	DEG country, considered for investment	3	4	4	4	4
Angola	DEG country	4	5	5	4	3
Antigua and Barbuda	DEG country	3	4	4	4	3

Energy Sector

Investments in the energy sector, assessed using indicators such as PVOU Level 1 and LCOE, offer significant job creation potential, especially in solar and wind energy sectors. These jobs span manufacturing, installation, and maintenance, fostering local income growth. The transition to renewable energy sources supports environmental stewardship goals, with the PCI - Energy indicator allowing DEG to evaluate contributions towards promoting sustainable energy markets.

Average Practical Potential (PVOU Level 1 kWh/kWp/day): This indicator, as provided by the World Bank and Solargis, measures the potential daily energy output per kilowatt-peak (kWp) of solar photovoltaic (PV) installations. It's a crucial parameter for assessing the feasibility and efficiency of solar projects across different regions, especially in developing countries with critical unmet energy needs. This metric reflects geographical and climatic factors influencing solar energy production and the current technological advancements in solar PV efficiency. High PVOU values indicate optimal opportunities for solar energy investments, aiding strategic resource allocation for solar development. It also provides insights into seasonal variations in solar energy production, essential for designing systems capable of storing excess energy or integrating with other energy sources during lower solar output periods, thus enhancing energy reliability in developing countries.

Per capita electricity generation from wind: This indicator, compiled by Ember, provides insights into a country's renewable energy efforts, technological capabilities, and policy effectiveness. High per capita electricity generation from wind indicates a strong adoption and integration of renewable energy sources into the national grid, reflecting a commitment to reducing fossil fuel reliance and transitioning to sustainable energy solutions. The indicator also points to the level of infrastructure available nationally to harness wind energy. Countries with high values are likely to have advanced wind turbines, efficient grid integration, and supportive regulatory frameworks. Similar to PVOU, this data point also speaks to resource availability and

utilization – areas with high wind potential and favourable geographic conditions will naturally have higher per capita generation from wind.

Levelized Cost of Electricity (LCOE): The LCOE is a critical financial metric used in the energy sector to compare different electricity generation methods consistently. It represents the per-unit cost (typically per kWh) of building and operating a generating plant over its financial life and duty cycle. This indicator is essential for evaluating the economic competitiveness of various energy generation sources, including renewable energy technologies. As renewable technologies advance and their costs decrease, the LCOE of these sources becomes more competitive, which is a crucial factor in the global shift towards sustainable energy. In the context of renewable energy, LCOE helps understand the cost-effectiveness of technologies like solar and wind power compared to traditional fossil fuels, where a lower LCOE indicates more economical attractiveness .

Productive Capacities Index (PCI) for Energy: Developed by UNCTAD, the PCI for Energy is a comprehensive measure assessing a country's capacity to produce and manage energy. It encompasses various aspects of the energy sector, including production, distribution efficiency, renewable energy development, and the sustainability of energy systems. The PCI for Energy reflects how well a country is leveraging its energy resources and infrastructure for economic growth and development. It includes indicators like the share of people with access to electricity, transmission and distribution losses as a share of primary supply, renewable energy consumption as a share of total final energy consumption, GDP per kg of oil consumption, total primary energy supply per capita, and total energy consumption per capita. This indicator is vital for understanding how energy contributes to a nation's overall economic development and competitiveness and is crucial for countries to evaluate their energy policies and strategies, identifying areas that need improvement

ICT Sector

The ICT sector is crucial for developing markets and adopting technology, with indicators like the number of internet service providers and broadband accessibility playing a central role. Enhanced ICT infrastructure boosts digital literacy, opens new market opportunities, and drives innovation. Furthermore, improved ICT infrastructure offers substantial community benefits by enhancing access to information, education, and health services, in line with DEG's community development objectives.

Number of Internet Service Providers (ISPs): The number of ISPs in a country reflects the competitiveness and diversity of its ICT landscape. A higher count indicates a competitive market, leading to better service quality, lower prices, and more innovative offerings. It also suggests a supportive regulatory environment conducive to investment and competition in the sector. A substantial presence of ISPs, particularly in rural and underserved areas, can drive internet service expansion, supporting inclusive digital access and bridging the digital divide .

Fixed-Broadband Internet Basket: This indicator, tracked by the ITU Data Hub, gauges the affordability and accessibility of fixed-broadband internet services by

comparing the cost of various plans to average income. Affordability is crucial for widespread internet adoption, with high costs being a significant barrier. A more affordable basket suggests greater internet penetration and digital inclusivity, essential for social and economic development. Fixed broadband's impact on digitization significantly enhances labor and total factor productivity, especially when accompanied by supportive structural policy changes.

Mobile Cellular Data and Voice High-Consumption Basket: This metric reflects the cost and consumption patterns of mobile services for high-usage consumers, indicating the affordability and availability of comprehensive mobile services. It is especially relevant in developing countries, where mobile services are often the primary internet access point. The affordability of these services relative to consumer income highlights the potential for mobile-based economic activities and digital inclusivity, with competitive pricing in this segment stimulating sectors like e-commerce and mobile banking.

Broadband Services as Part of Universal Access: This indicator assesses the inclusion of broadband services in universal access policies, a key measure of a country's commitment to digital inclusivity. Universal access policies aim to make internet services available and affordable for all, particularly in underserved and rural areas, enhancing opportunities for empowerment, sustainability, and social development. The focus on extending digital infrastructure to remote areas and improving service affordability addresses the needs of marginalized communities and is crucial for achieving digital equity.

PCI for ICT: The Productive Capacities Index for ICT by UNCTAD is a comprehensive measure evaluating a country's capability to leverage ICT for economic and social development. It covers various aspects, including ICT infrastructure quality and accessibility, digital literacy, the integration of ICT in business and government, and the effectiveness of regulatory policies. A high PCI for ICT score indicates robust ICT infrastructure, widespread internet access, high digital literacy, and supportive policies, essential for digital entrepreneurship, e-governance, and global market access. This index is instrumental for policymakers and international organizations in strategizing ICT development, highlighting areas needing improvement like internet connectivity expansion and digital skills enhancement.

Transport Infrastructure

This sector is pivotal for facilitating trade and economic growth, with indicators such as the Global Quality Infrastructure Index and Logistics Performance Index showcasing the impact of transport infrastructure on trade efficiency and economic growth. Investments in transport infrastructure not only improve a country's connectivity and competitiveness but also generate numerous jobs in construction, maintenance, and logistics, thereby increasing local income.

Logistics Performance Index (LPI): The LPI, assessed by the World Bank, evaluates the efficiency and quality of trade and transport-related infrastructure, crucial for a country's logistic efficiency and global market competitiveness. It

considers infrastructure quality for ports, roads, railways, the ease of arranging shipments, and the ability to track and trace consignments. High-quality logistics infrastructure reduces trade costs, enhances global trade participation, supports the movement of goods, and enables deeper engagement in international trade. Countries with high LPI scores exhibit robust logistics, including transport infrastructure, which is vital for economic growth, reducing commodity prices, increasing market accessibility, and making global manufacturing more cost-effective.

PCI for Transport: Developed by UNCTAD, the PCI for Transport measures a country's capacity to support economic activity through its transport infrastructure, covering the extent, quality, and accessibility of transport facilities. It includes indicators like air transport registered carrier departures worldwide per 100 people, air transport freight (million ton-km), air passengers per capita, the density of road networks, and the extent of rail infrastructure per capita. High PCI scores are often associated with greater GDP per capita, highlighting the role of transport infrastructure in economic development. This index is significant for tracking progress, developing policies, and identifying areas for improvement in transport infrastructure, especially in developing countries, to enhance trade, mobility, and societal well-being.

Finance Sector

The finance sector is integral to providing access to finance and fostering market development, with key indicators including Domestic Credit to Private Sector and Financial Market Access Index. Investments in the financial sector stimulate economic growth and market development, while also enhancing the economic capacity that supports various industries, contributing to overall economic stability and growth.

Domestic Credit to Private Sector by Banks (% of GDP): This indicator, provided by the World Bank, measures the extent to which the banking sector contributes to financing the private sector's activities relative to the size of the economy. A higher percentage indicates active lending by banks to businesses and individuals, reflecting a well-functioning banking sector that supports business growth, innovation, and entrepreneurship. This indicator is crucial for understanding the financial health and stability of a country and its ability to support private enterprise, making it a key metric for economic growth and development.

Financial Institutions Access: This measure reflects the accessibility of financial services provided by banks and other financial institutions within a country. It includes various quantitative measures detailing the structure and reach of the financial sector, such as the number of bank branches, availability of digital banking services, and ease of accessing credit and financial products. The index highlights the depth of financial inclusion, capturing data on the physical presence of financial institutions, the prevalence of digital banking transactions, and the usage of financial services like insurance and loans. Financial inclusion is essential for inclusive economic growth, allowing individuals and businesses, especially in underserved areas, to participate actively in the economy.

Financial Market Access Index: Updated by the World Bank, this index measures the ease of access to financial markets for businesses and individuals, evaluating the diversity of financial instruments, market entry ease, trading system efficiency, and investor protection level. The index encompasses multiple indicators reflecting digital financial inclusion across demographic and socioeconomic segments, emphasizing the penetration and growth of digital financial services. It highlights the role of efficient and accessible financial markets in economic transformation, offering a platform for capital raising and resource allocation essential for long-term economic growth. Financial markets also play a crucial role in risk diversification, reducing economic vulnerability and complementing market investments by attracting a broader range of investors, especially in developing countries where traditional financing access might be limited.

Water Management

Efficient water management, measured by indicators like Integrated Water Resources Management, is essential for environmental sustainability. Investments in this sector lead to improved water conservation practices and sustainable usage, directly benefiting communities, especially in agriculture-dependent regions, and supporting DEG's goals of providing community benefits.

Progress on Integrated Water Resources Management (IWRM): This indicator, sourced from the UN Water Database, assesses the implementation of IWRM strategies, which aim for the coordinated development and management of water, land, and related resources to maximize social and economic welfare without compromising ecosystem sustainability. It measures a country's commitment to sustainable water management, including water conservation, equitable distribution, and addressing diverse water needs across sectors. Effective IWRM is essential for tackling water scarcity, pollution, and climate change impacts. A higher IWRM score indicates better water resource management and sustainability, supporting vital sectors like agriculture and manufacturing, and is particularly crucial for economic development in regions where agriculture is a significant part of the economy. IWRM also plays a vital role in reducing economic vulnerability by ensuring equitable water distribution, mitigating water-related disasters, and enhancing resilience against climate-related shocks, especially in developing countries.

Water Use Efficiency (USD/m³): Updated annually by Aqueduct, this indicator measures the economic output generated per unit of water used, highlighting the efficiency of water usage across different sectors, including agriculture, industry, and domestic use. High water use efficiency signifies an economy's capability to generate more economic value with less water, crucial in areas facing water scarcity or stressed water resources. It underlines the importance of efficient water usage for economic sustainability, by reducing operational costs and ensuring water availability for various uses. Improved efficiency can lead to increased agricultural productivity and economic growth, especially in developing countries where agriculture is a key economic sector. Water use efficiency is also a critical factor in reducing economic vulnerability by mitigating water scarcity impacts and enhancing resilience against climate-related shocks. Furthermore, it encourages investments in water-saving technologies and

innovations, essential for sustainable economic development and offering opportunities for economic diversification and growth.