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PRIORITY 1: DEVELOPING AN INVESTABLE INFRASTRUCTURE PIPELINE

NOTE ON IMPROVING THE ACCESSIBILITY AND AVAILABILITY OF KEY MARKET DATA

Henri Blas, Global Infrastructure Hub Program Lead

Key Insights From G20 Market Data Note

G20 Priority 1 Infrastructure Working Group

- A framework to support the development of project pipelines
- Data: why it matters to investors
- Market data note structure

Market data that matters to investors

- How we identified market data that matters to investors
- Illustrating investment volume data gaps
- Illustrating delivery cost and project preparation data gaps
- Illustrating financing cost and performance data gaps
- 2023 & 2024 challenging years for infrastructure fund raising

Way forward

- Key gaps highlighted
- G20 potential next steps

PRIORITY 1: DEVELOPING AN INVESTABLE INFRASTRUCTURE PIPELINE

3 DELIVERABLES

Framework applicable for effective planning and pipeline development practices

Data Note on data gaps and current global data trends

Data Practice Guide delta between theory and practice

Priority 1 consists of **three complementary deliverables that present a systemic strategy as well as actions required for long-term infrastructure pipeline development** through private sector participation, covering: (1)the enabling environment, (2) project preparation, (3) data and digital pipeline.

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FRAMEWORK FOR ENABLING AN INVESTABLE INFRASTRUCTURE PIPELINE

Introduction and context

Enabling Framework

- Legal and Regulatory frameworks
- Government Capacity and Institutions
- Funding and Financing

Infra Life cycle

Infrastructure Planning	Project Identification and Screening	Appraisal and Structuring	Contract Drafting and Bidding	Financing Implementation	Contract Management

Role of Data

Market data note | Project data – Practice guide

Annex: Tools and Guidance

OBJECTIVES OF THE MARKET DATA NOTE

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Highlight existing market data gaps – either accessibility or availability - that hinder the establishment of infrastructure as a recognized asset class.

'Market data' for the purpose of this work refers to datasets that offer global benchmarks - often as time series - spanning a majority of countries and derived from either high volumes of transactions or country-wide assessments, providing stakeholders with insights into broader market trends.

'Project-specific data' is covered in a separate guidance note.

Why Market Data matters for Infrastructure Investment:

- ✓ Data underpins transparency, comparability, and investor confidence.
- ✓ Reliable benchmarks help governments set tariffs and assess value for money.
- ✓ Investors need evidence-based assessments of risk, cost, and performance.

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STRUCTURE OF THE NOTE

- Executive summary
- Objectives
- Relevance and background (including global trends)
- **Key market data themes & Stakeholders survey**
- **Key market data trends and gaps by data theme**
  - Economic pre-conditions (1 theme)
  - Infrastructure Enabling Framework (2 themes)
  - Infrastructure Asset Lifecycle (5 themes)
- **Conclusion and way forward**
- Appendix: Analytical approach
- Appendix: IAIS ICS Infrastructure Definition
- Appendix: Data sources by theme
- Appendix: Abbreviations & Glossary

For each theme

- **Overview and context**
- **Relevance to investment and policy**
- **Assessment of global data sources**
- **Illustration of key data trends and insights**
- **Key data gaps and opportunities for potential action**

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EXAMPLE

Overview and context

Infrastructure market liquidity refers to the ease with which infrastructure assets and financial instruments, such as bonds, loans or equity, can be bought or sold without significantly affecting their price. Market depth in the context of infrastructure indicates the availability of a broad and diverse investor base, a range of financial instruments, and sufficient transaction volume to support large-scale, long-term infrastructure financing.

Relevance to investment and policy

emerging markets, as they determine the availability and cost of long-term funding for infrastructure projects and provide exit strategies for investors. A deep and liquid financial market ensures that governments and private investors can raise funds efficiently through debt instruments such as bonds. Beyond depth, the availability of local currency markets can also help reduce reliance on foreign currency borrowing and mitigate risks like exchange rate volatility. In turn, this can also help in enhancing investment by institutional investors.

Data on bonds can also be useful to understand corporate investment in infrastructure. These bonds often combine refinancing with new investment and are not systematically reported, except for green bonds. Corporations play a significant role in funding infrastructure, particularly for maintenance, operations and upgrades, but estimating the scale of this investment remains challenging.

Assessment of global data sources

Data sources mostly cover general market liquidity rather than sector-specific (infrastructure) financing.
Key global datasets on financial market development (non-infrastructure specific) are:

- IMF Financial Development Index: summarises how developed financial institutions and financial markets are in terms of their depth, access and efficiency, for 180 countries.
- World Bank's Global Financial Development database: provides financial system characteristics for 214 economies across 108 indicators measuring the depth, access, efficiency and stability of financial systems.
- World Bank's Local Currency Bond Market Development Indicators: provides data on local currency bond markets, including size, liquidity, investor base and regulatory frameworks.

Key global datasets for green/blue/sustainability bonds:

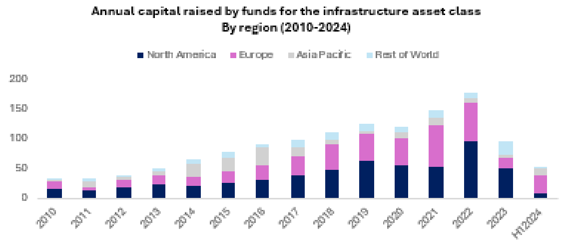
- Climate Bonds Initiative (CBI)
- Refinitiv-Eikon (requires subscription)
- Bloomberg/BNEF (requires subscription)
- S&P Capital IQ Pro (requires subscription)
- Financial Times Data (requires subscription)
- Thomson-Reuters (requires subscription)
- Macrobond (requires subscription)
- Environment Finance Data (EFD) (requires subscription)

Some data is also available through infrastructure deals data providers such as RealFin, IJGlobal or Preqin (all fee-based), but the volumes captured are usually lower as some corporate financing is not captured. The World Bank PPI database provides data on primary market data in Emerging Markets for free and validated in collaboration with World Bank country teams.

The survey results confirm that data gaps are not critical for this theme given the number of platforms providing statistics. However, the data is available mostly through subscription, limiting accessibility and usually does not provide clear infrastructure-specific insights.

Illustration of key data trends and insights

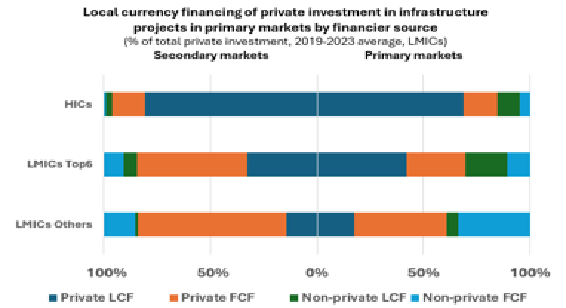
Two indicators were selected to illustrate trends for this topic. The first one illustrates mostly equity availability through fundraising for infrastructure.



Source: Preqin Global Infrastructure Report 2025

In 2023 and 2024, infrastructure fundraising faced significant challenges – in particular, interest rate hikes – with total capital raised dropping to US$94.9-billion, nearly half of 2022 levels. While the decline stabilised in 2024, fundraising remained subdued, reaching US$70.5-billion by Q3. Despite these challenges, investment from infrastructure funds – still stocked with significant dry powder – is expected to remain relatively resilient compared to other asset classes.

The second indicator illustrates debt markets and depth of local currency markets.



The top six LMICs – Brazil, China, India, Indonesia, Mexico and Türkiye – have a much greater proportion of local currency financing when measured against other LMICs and are closer to HIC ratios, from both private and non-private[1] financing sources – 62% of total private investment, compared to 23%. Local currency financing for private participants increased from 45% to 60% in primary markets – highlighting the potential to develop local currency financing.

Bond markets are increasingly being used to finance infrastructure (25% in high-income economies but only 10% in EMDEs). Data on sustainability-related bond issuance is available; however, data on use-of-proceeds is usually limited to high-level sectors such as transport or energy, but even this combines core infrastructure sectors with manufacturing or extractives.

Gaps / Opportunities for global action

Understanding infrastructure market liquidity and depth remains limited due to several challenges. This is because the bond market data – besides green bonds – is hard to capture and is not available specifically for infrastructure, and when it is available, the use-of-proceeds is not clear. Even for green bonds, the data publicly available does not offer granular trends (by type of issuer and use-of-proceeds). Secondary market trading for infrastructure bonds, particularly in emerging markets, also lacks transparency and is poorly tracked. Most available data come from periodic reports, making real-time assessments difficult. Non-public infrastructure financing, such as private placements and off-balance-sheet funding, is also complex to monitor.

The IWG could explore the opportunity to work with bond data providers to understand how infrastructure investments through capital markets could be better tracked, in particular, use-of-proceeds and issuers.

List of global data sources

IMF Financial Development Index	Summarises how developed financial institutions and financial markets are in terms of their depth, access and efficiency for 180 countries	https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b&sid=1480712464593
World Bank's Global Financial Development database	Provides financial system characteristics for 214 economies across 108 indicators measuring the depth, access, efficiency and stability of financial systems	https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database
World Bank's Local Currency Bond Market Development Indicators	Provides data on local currency bond markets, including size, liquidity, investor base and regulatory frameworks	Source used: IJ Global (commercial)
CBI	Key global datasets for green/blue/sustainability bonds	https://www.climatebonds.net/
Refinitiv-Eikon	Key global datasets for green/blue/sustainability bonds	https://eikon.refinitiv.com/
Bloomberg	Key global datasets for green/blue/sustainability bonds	https://www.bloomberg.com/
Environmental Finance Data	Covers all sustainable bonds issued since 2007 and boasts 95%+ market coverage	https://efdata.org/
RealFin	Some data is available for infrastructure deals, but the volumes captured are usually lower, as some corporate financing is not captured	https://www.realfin.com/
IJGlobal	Some data is available for infrastructure deals, but the volumes captured are usually lower, as some corporate financing is not captured	https://www.ijglobal.com/
Preqin	Some data is available for infrastructure deals, but the volumes captured are usually lower, as some corporate financing is not captured	https://www.preqin.com/

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IDENTIFYING MARKET DATA THAT MATTERS: LEVERAGING PREVIOUS CONSULTATIONS

Besides the new consultations undertaken to support IWG priority 1 this year, the note draws on:

- G20 Infrastructure Investors' Dialogue
- Comprehensive data review and analysis conducted in the GIHub Infrastructure Monitor reports including 5+ years of engagement with leading infrastructure data providers
- Extensive consultations with senior representatives from the private sector and recommendations from the *Framework to Scale Up Private Investment in Sustainable Infrastructure*, endorsed during the Indonesian G20 Presidency
- The InfraTracker work and the report exploring *Infrastructure taxonomies* developed under the India G20 Presidency
- The dedicated "Global trends" sessions organized by the Brazil G20 Presidency.

Altogether these consultations were the basis of the themes selected and the opportunities for action identified.

8 THEMES COVERED

Economic pre-conditions	
	Data Theme 1: Cost of infrastructure delivery
Infrastructure Enabling Framework	
	Data Theme 2: Legal and regulatory framework
	Data Theme 3: Institutional capacity, funding, and financing, for pipeline development
Infrastructure Asset Lifecycle	
	Data Theme 4: Financing costs benchmarks
	Data Theme 5: Financial performance benchmarks
	Data Theme 6: Domestic market liquidity and depth
	Data Theme 7: Project delivery and management
	Data Theme 8: Development goals and Climate risks

Aligned with broader framework structure

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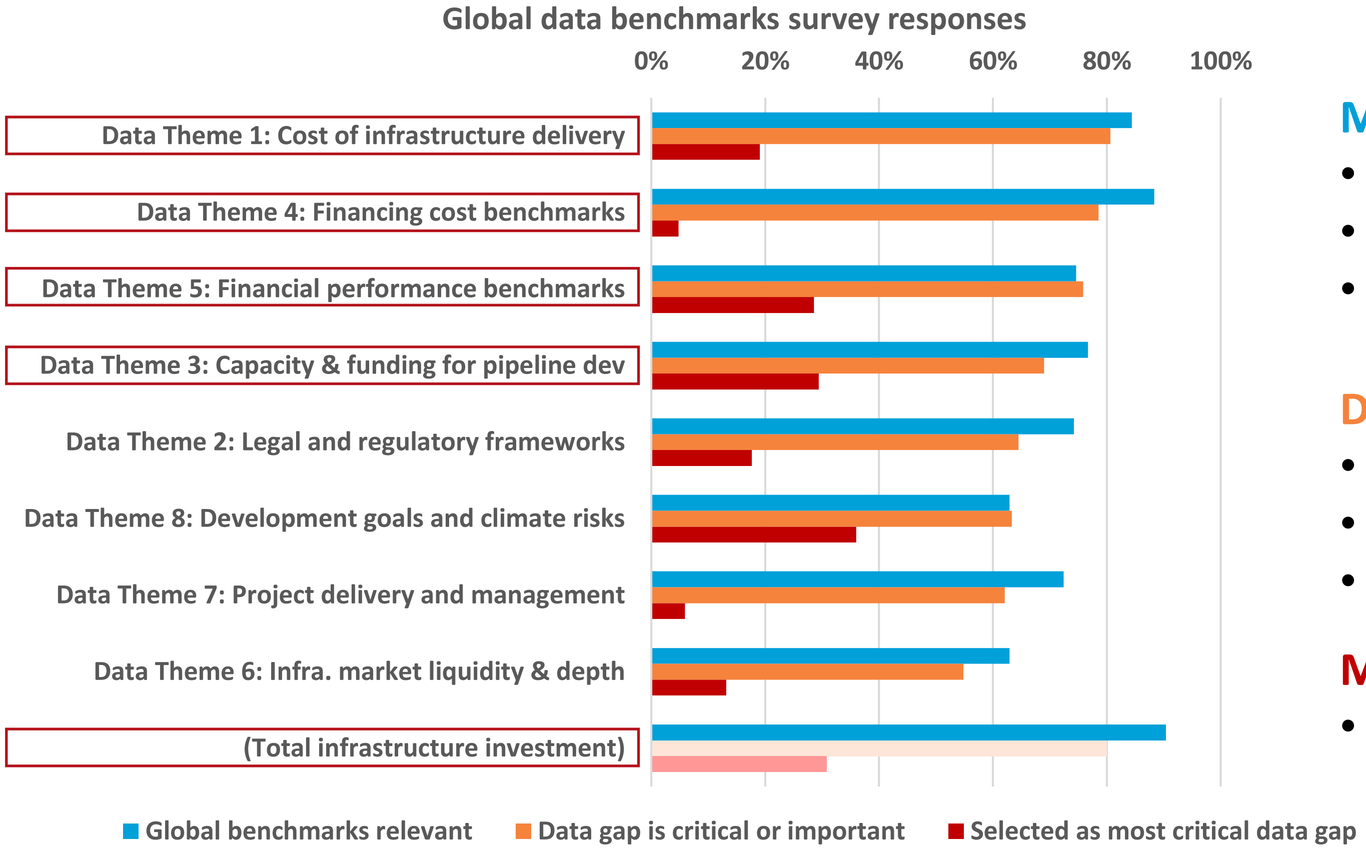
STAKEHOLDER SURVEY



Most relevant

- Infrastructure investment volumes
- Financing cost benchmarks
- Cost benchmarks

Data gaps with highest relevance

- Infrastructure investment volumes
- Cost benchmarks
- Financing cost benchmarks

Most critical gap

- Development goals and climate risks

Data gaps *across all themes* were most acute for those working in low-income countries,

Cost of infrastructure delivery was highlighted as a key gap – especially for public / DFI

Volumes, Cost of capital and Financial performance metrics were critical across the board.

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ILLUSTRATING THE INVESTMENT DATA GAP

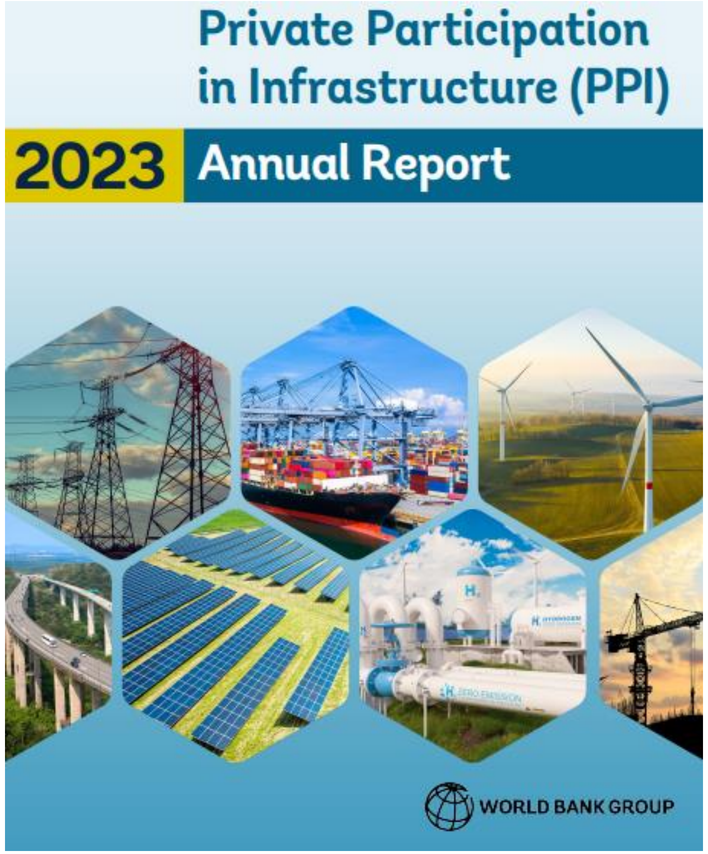
Tracking of private investment usually rely on consultants reporting deals for league tables. Investors then rely on those to assess new market potential.

The WBG also leverages its local teams for the development of the PPI database.

However when deals become less structured or when investment happens at the corporate level, these datasets can fail to capture the scale of actual investment i.e. market potential. This is a gap that government can help address.

UK Transaction datasets Water: $0.7B p.a.

Regulator (OFWAT) $10B p.a.



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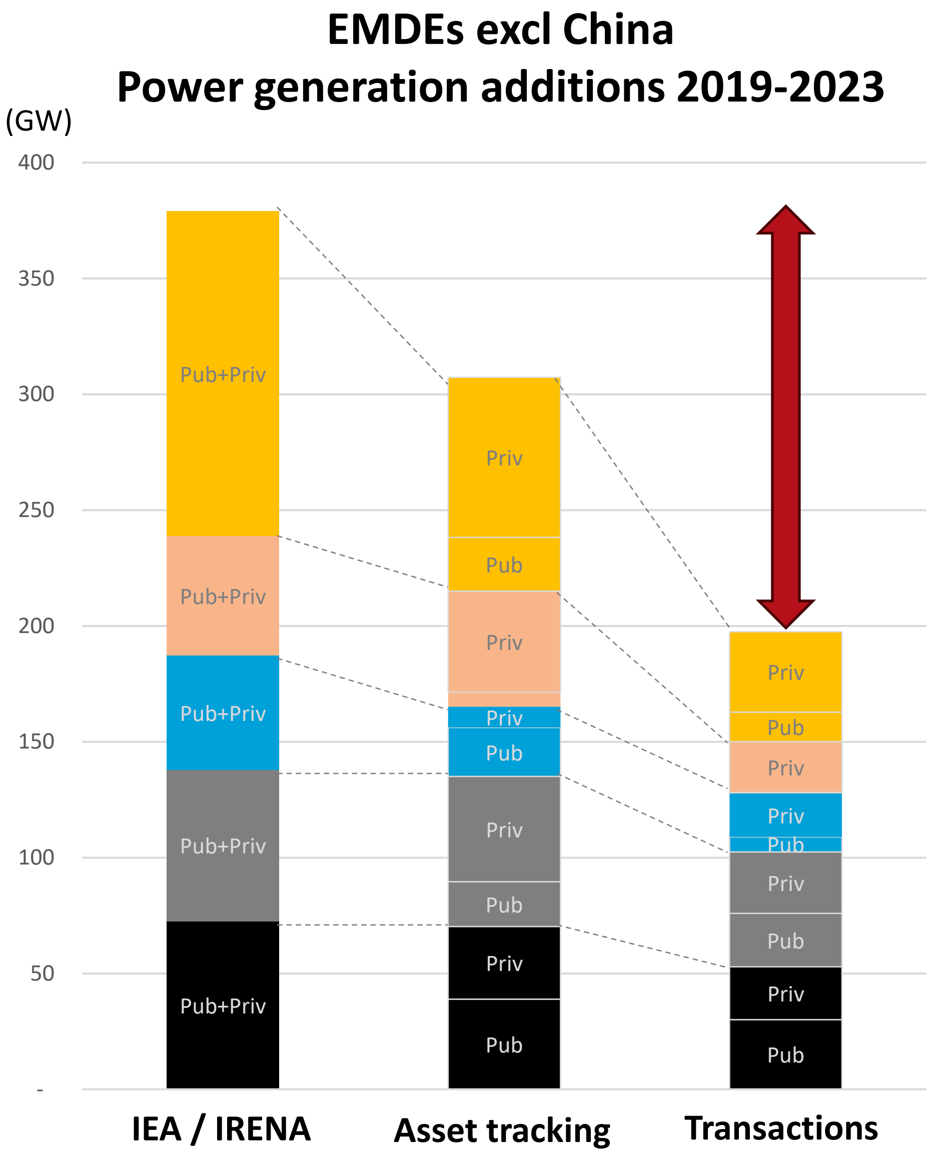
ILLUSTRATING THE INVESTMENT DATA GAP



Transaction datasets are also not able to capture every transaction. Taking the example of investment in power generation in EMDEs (excluding China), it can be challenging to reconcile sector trends with investment trends especially for sub-sectors like solar.

- Markets that captures more comprehensive private investment data can better assess trends.
- Markets that make that data accessible may also draw greater interest from new investors.

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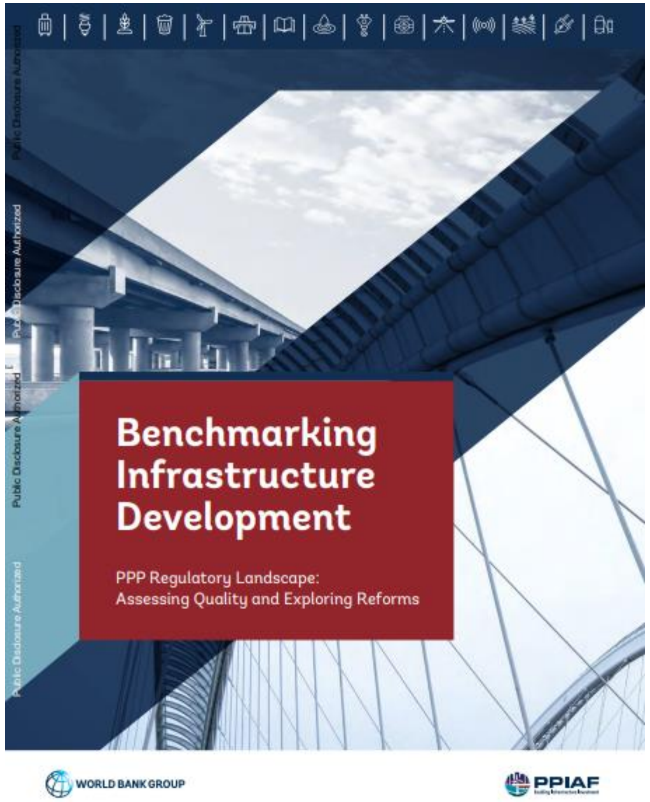
RECOMMENDATIONS BY THEME

Economic Pre-conditions	
Data Theme 1: Cost of infrastructure delivery	Definitions of infrastructure cost indices vary across markets, and relevant sources can be challenging to locate. **IWG members are encouraged to continue collecting and contributing cost data/indexes as well as developing specific metrics for infrastructure.**
Infrastructure Enabling Framework	
Data Theme 2: Legal and regulatory framework	Data on the strength of legal and regulatory frameworks by sector or sub-national entities is hard to find. **IWG members are recommended to continue contributing data to IOs' initiatives, tracking reforms that enable further private participation in infrastructure.**
Data Theme 3: Institutional capacity, funding, and financing for pipeline development	Lack of clear, consolidated mapping and performance data for preparation facilities and project development funds. **The IWG encourages the ongoing mapping of such facilities, along with the development and dissemination of standardised performance metrics, to help scale up effective practices.**



Detailed data for Enabling Environment Both LMICs and HICs

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COST OF INFRASTRUCTURE DELIVERY

Delivery cost uncertainty remains a key challenge for investors and government:

A report by the Inter-American Development Bank (IADB) found that cost overruns account for 28% of the total infrastructure investment cost.

The International Monetary Fund (IMF) found that on average 33% of a project's budget merely covers inefficiencies in the delivery process.

Additional challenges for regulated assets or long concessions is the lack of assessment of the whole lifecycle cost of capital spending

Does the government calculate the whole lifecycle cost of capital spending projects at inception?

Source: Benchmarking Infrastructure Development, The World Bank, 2020

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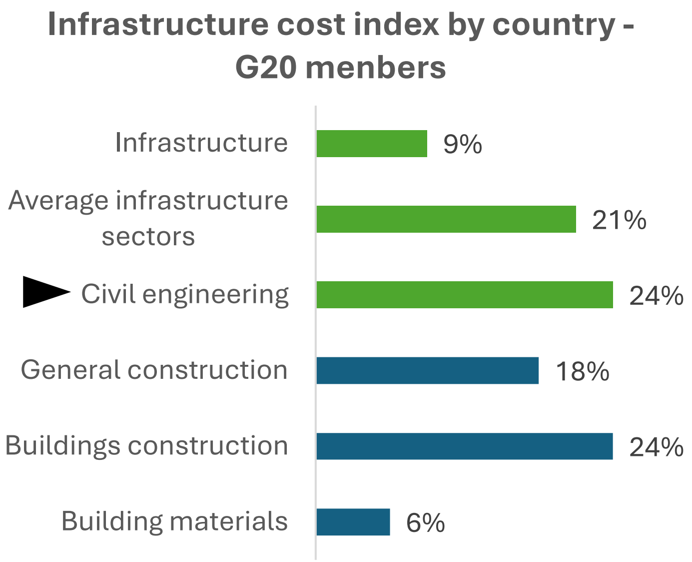
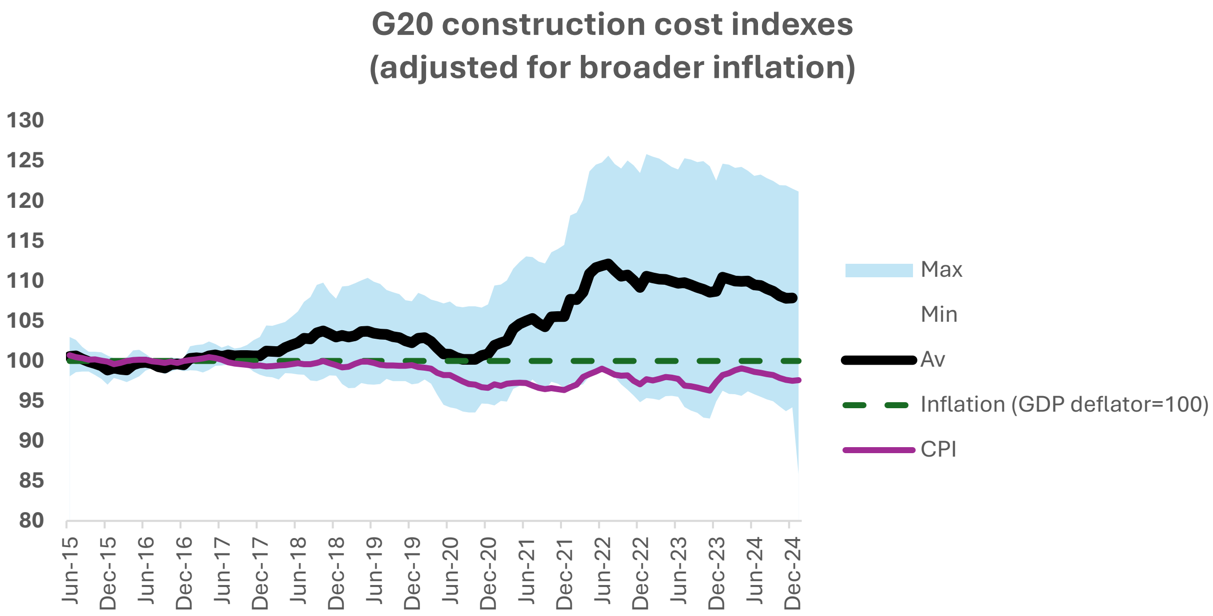
COST OF INFRASTRUCTURE DELIVERY

For new investors and long-term planning, there are also limitations in terms of availability of cost benchmarks index.

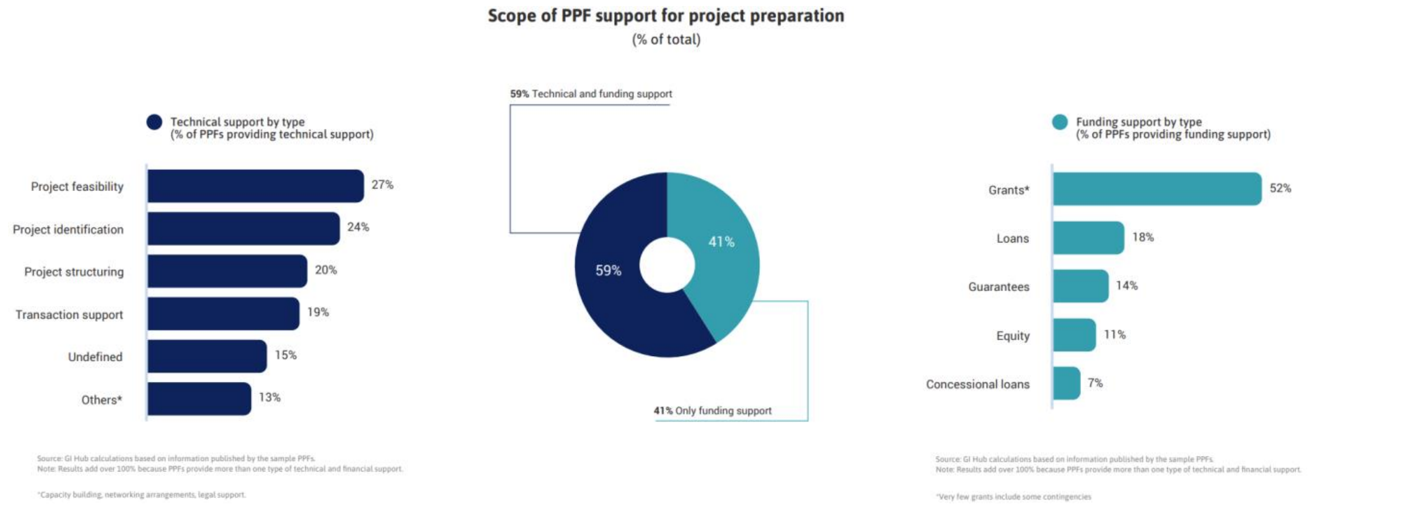
When it is available, the definition varies significantly across jurisdictions.

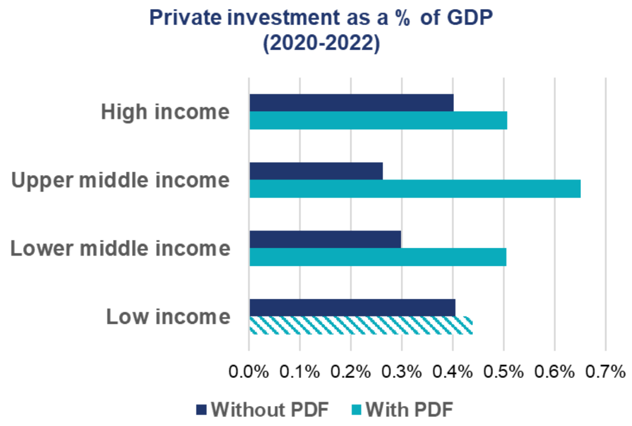




INSTITUTIONAL CAPACITY, FUNDING AND FINANCING FOR PIPELINE DEVELOPMENT

There is currently a lack of clear, consolidated data on funds allocated through national budgets or PPFs for the development of infrastructure projects. In addition, limited and inconsistent data reporting by many PPFs hampers the ability to identify, assess and replicate best practices across countries and regions.





- ➢ Markets that have project preparation funds clearly allocated and with proven rack record may tend to see more interest from investors
- ➢ Better impact metrics could also enable more support from DFIs

RECOMMENDATIONS BY THEME

Infrastructure Enabling Framework

Data Theme 4: Financing costs benchmarks	The lack of benchmarks limits the development of investable pipelines, particularly in EMDEs. **The IWG, recognising confidentiality challenges, encourages sharing and improved coverage of aggregated benchmarks from financiers.** In particular, strengthening local market data, such as yield curves, can reduce financing costs and volatility.
Data Theme 5: Financial performance benchmarks	Existing data lacks granularity to meaningfully inform decisions and regulations due to limited sample size, especially in emerging markets. **The IWG welcomes the development of a more granular GEMs dataset for infrastructure and supports further collaboration between the public sector and regulators, global standard-setters and the banking/insurance sectors to discuss data requirements and the impact of regulatory changes on infrastructure finance.**
Data Theme 6: Infrastructure market liquidity and depth	Understanding infrastructure market liquidity and depth is limited by gaps in corporate finance and bond market data. Data rarely specifies infrastructure use and lacks detail on use-of-proceeds. **The IWG supports engagement with bond data providers to develop infrastructure-specific benchmarks that improve the tracking of infrastructure investments and provide a better assessment of the depth of local markets, especially in local currency.**
Data Theme 7: Project delivery and management	Despite the widespread and persistent occurrence of cost overruns and delays in infrastructure projects, global evidence remains difficult to consolidate. Relevant data is dispersed across national and sub-national government reports, industry and company disclosures and academic studies, making comprehensive analysis challenging. Additional data would greatly benefit value-for-money assessments. In contrast, assessments of the enabling environment for project delivery and management are comparatively more accessible. **IWG members are encouraged to collect and share data on project delivery outcomes and to actively participate in initiatives that aim to strengthen this evidence base.**
Data Theme 8: Investors' development goals and climate risks	A key limitation of existing infrastructure data sets is the lack of coverage and standardised metrics on impact as well as risks related to interoperability. **The IWG reiterates the importance of comparability and interoperability with other global standards for stakeholders that intend to develop standards to voluntarily work, where appropriate and subject to country circumstances.**

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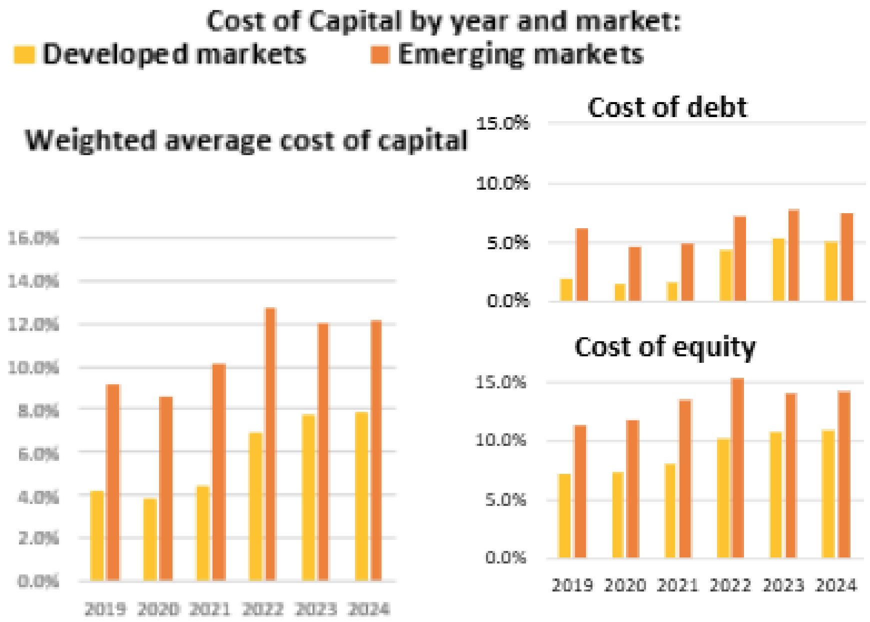
FINANCING COST BENCHMARKS

Accurate benchmarks for financing costs are central to tariff setting, PPP negotiations and evaluating private sector returns in a way that balances profitability with societal impact.

Some data is available for emerging markets but the coverage mainly includes high- and middle-income countries.
Data is sometimes collected by government or DFIs but rarely consolidated.

While not infrastructure specific, country default spread estimates are sometimes used as a proxy. Data is available based on the work of Prof A. Damodaran at the New York University Stern School of Business.



Source: EDHECInfra (2024). Data as of 31 Oct 2024

Note: EDHECInfra data is based on 9,000+ companies and a representative sample of 27 countries that exhibit sizable level of activity that could be measured including Australia, Austria, Belgium, Canada, Denmark, Germany, Spain, Finland, France, United Kingdom, Hungary, Ireland, Italy, Netherlands, Norway, New Zealand, Poland, Portugal, Russia, Singapore, Slovakia, Sweden, United States of America, Brazil, Chile, Malaysia, Philippines.

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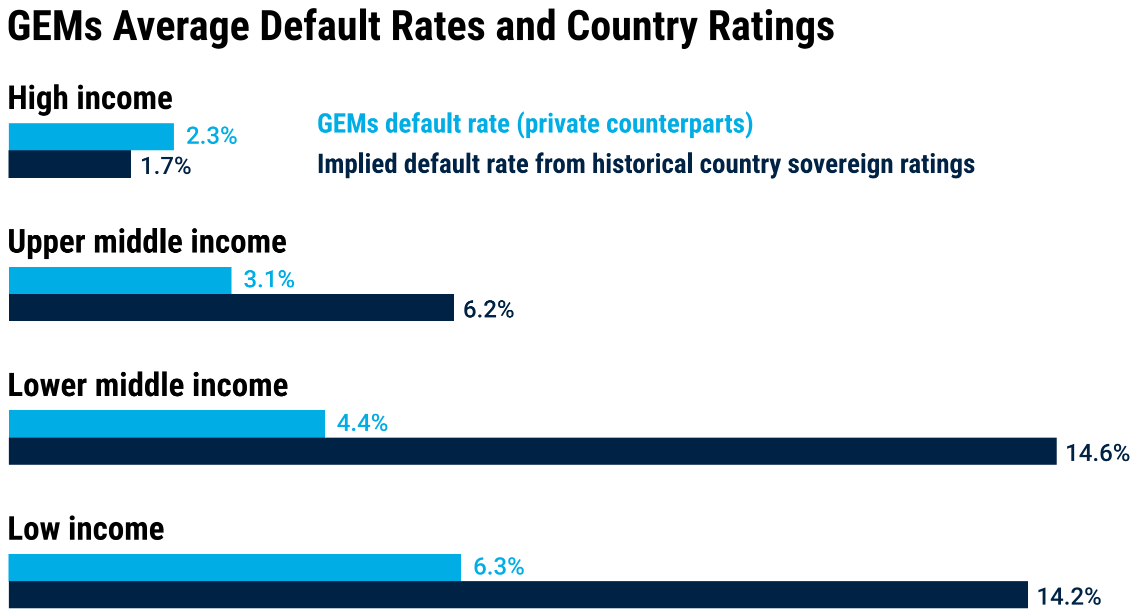
FINANCIAL PERFORMANCE BENCHMARKS

For infrastructure debt, investors widely use credit risk data in allocating capital, especially asset managers and banks.

Moody's publish data for rated and unrated, corporate and project finance infrastructure debt through a consortium of banks but the viability of that effort is in question. Regulators usually do not have access to data they could rely on due to the lack of definition for infrastructure.

When data is not available in certain markets, investors may use country ratings and add a premium even though data shows that infrastructure projects (especially the one with MDBs) have lower default rates.



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KEY GAPS HIGHLIGHTED

Investment Flows
Funding Gaps
Public and private capital allocation
Financing sources

Benchmarks and Financial Metrics
Returns (equity & debt), WACC, Gearing ratios
Aligned with market and regulator standards
Benchmarks for value for money assessment

Project-level terms
Development support deployed
Comprehensive project-Level financial data
(contract terms, instruments, de-risking)

Data comparability, Accessibility, and Usability
Consistent, standardized, global disaggregated data formats globally
Centralized, user-friendly digital platform

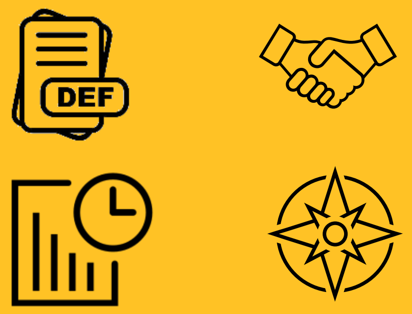
KEY OPPORTUNITIES HIGHLIGHTED

Global Standards

Develop a globally accepted taxonomy for infrastructure financing and create standardized metrics and benchmarks, including for risk mitigation instruments

Collaboration & Partnerships

Develop international cooperation and peer review mechanisms including with private entities and DFIs to build reliable infrastructure statistics



Project lifecycle data

Encourage collection of historic data on capital, operational project performance and financial disclosure by programs

Data comparability, Accessibility, and Usability

Establish central repositories / global database for infrastructure finance or data hosted by trusted institutions

Institutional Strengthening and Capacity Building

Build capacity to improve transparency in budgeting & reporting – including subnational levels

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OPPORTUNITY 1: FORUM

Gap: Definition Lack of a common infrastructure taxonomy	Opportunity: Forum Mobilize stakeholders to define the asset class, promote policy objectives and mitigate regulatory challenges
A key challenge is the absence of an internationally agreed baseline definition of "infrastructure" for private investment. Existing definitions vary across countries and frameworks, limiting data comparability. While flexibility is important, this lack of alignment makes it harder for investors and regulators to classify infrastructure as a distinct asset class, assess performance, and apply consistent regulatory treatment. It also hampers data providers from generating reliable statistics.	Reaching international consensus on a consistent infrastructure definition and standardized data frameworks is a long-term goal. However, there is a timely opportunity to advance this through collaboration among regulators, global standard-setters, and financial sector representatives to align on data needs for supervisory and regulatory purposes.

European Banking Authority report on the application of the infrastructure supporting factor: *"currently there is no definition of infrastructure lending commonly accepted within the EU [...] Infrastructure lending exposures [...] are reported in an aggregated way under specialized lending exposures, which is a wider category.*

This potential action was endorsed (but not yet implemented) under the Framework to Scale Up Private Investment in Sustainable Infrastructure, developed during the Indonesian G20 Presidency.

The International Association of Insurance Supervisors (IAIS) adopted the Insurance Capital Standard (ICS) in December 2024 which defined specific risk-weights for infrastructure as an asset class.

OPPORTUNITY 2: MAPPING

Gap: Fragmentation Fragmented Data Despite Availability	Opportunity: Mapping Improving Access Awareness & Capacity
The lack of standardized reporting does not mean data is unavailable—large volumes of financial market data do exist. However, there is currently no centralized mapping of infrastructure-related datasets to clarify their scope, limitations, and how they relate to one another. This fragmentation hampers users' ability to leverage existing data insights effectively.	Enhancing the visibility and usability of existing datasets is key to better benchmarking and decision-making. The G20 IWG supports this by mapping major global datasets and identifying their limitations and linkages, helping practitioners navigate data more effectively. Strengthening institutions and building capacity will also be critical for improved data collection and use.

50+ global datasets mapped across 8 themes

OPPORTUNITY 3: PARTNERSHIPS

Gap: Complexity & Specificity Evolving Financing Mechanisms Increase Analytical Complexity	Opportunity: Partnerships Partnering for Deeper Infrastructure Data Insights
As infrastructure financing diversifies—through bonds, guarantees, and blended finance—new challenges emerge. Data granularity is often lacking, with infrastructure sectors grouped with unrelated industries, making it hard to track trends. Inconsistent reporting on key details like use-of-proceeds and concessionality also hinders evaluation and replication of effective financing models.	The G20 can play a pivotal role in encouraging partnerships with IOs leading data collection and analytics efforts. Partnering with existing data providers is a practical way to address key data gaps. A G20 endorsement can play a central role in promoting such partnerships—illustrated by the work this year with GEMs. Infrastructure-specific data can then offer valuable insights into enabling environments and market performance, which are essential for building investor confidence, especially in emerging markets.

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