What is infrastructure?

Approaches to Defining Infrastructure

There are several ways to define what constitutes or is considered 'infrastructure'. The OECD proposes a broad definition encompassing the 'system of public works in a country, state or region, including roads, utility lines and public buildings'. However, this can be hard to implement. The World Bank proposes a limited list of 'essential' services (see appendix) that seems restrictive for the purpose of classifying all potential infrastructure investments globally. The OECD and World Bank approaches are rooted in public-policy considerations and focus on what infrastructure *does*, that is, it delivers services.

For the purposes of classifying **investments** in infrastructure, a better approach focuses on what infrastructure 'is like' in terms of its attributes as a business. This is the route taken by financial regulators in their effort to define **qua lifying infrastructure assets** under various prudential frameworks. Criteria-based definitions of qualifying infrastructure companies exist under the Basel-II Accord, the Solvency-II Directive, and the CRR-2 Regulation of European banks. (See appendix for details.)

These definitions focus on the financial economics of infrastructure companies and aim to identify criteria differentiating them from other types of corporate equity or debt investments, especially with respect to known or expected differences in their risk profiles.

The definition put forward by the European Insurance and Occupational Pension Authority (EIOPA) for Solvency-II stipulates that 'the infrastructure assets and infrastructure project entity are governed by a contractual framework that provides debt providers and equity investors with a high degree of protection.' EIOPA argues that 'the cash flows generated for debt providers and equity investors shall be considered predictable' and in particular that the revenues qualifying infrastructure investment should be either:

1. 'availability-based',
2. 'subject to a rate-of-return regulation'; or
3. 'subject to a take-or-pay contract' (see appendix).

Such prudential definitions aim to isolate what is expected to be a lower level of business and financial risk found in infrastructure companies.

The *TICCS*® View

TICCS® is not strictly speaking a definition of what is and what is not ‘infrastructure’ but a taxonomy designed to organise in an *objective* manner the constituents of the infrastructure investment universe.

To this end, *TICCS*® relies on a set of fundamental assumptions about what makes infrastructure companies different from other businesses. These assumptions are rooted in financial economics and academic insights into the nature of such investments.

In that sense, *TICCS*® is normative: it is not enough to be labelled ‘infrastructure’ or to be ‘infrastructure-like’ to qualify under the taxonomy.

Instead a number of *fundamental economic criteria* have to be present for a company and its assets to be meaningfully designated as infrastructure:

- **Single-use investment**: infrastructure assets can be described as 'relationship-specific' i.e. the investment required only makes sense in the context of a ‘relationship’ – typically a contract, license or concession, which justifies the demand or usefulness of the investment.
- **Sunk or irreversible capital investment**: a relationship must exist for infrastructure investment to take place because the initial capital expenditure is ‘sunk’ i.e. irreversibly invested and unusable for any other purpose than the one originally intended.
- **Large size requiring a long repayment period**: not only are infrastructure investments sunk, they must be sizeable in absolute terms, making the repayment period necessarily long (multiple decades).
- **Inflexible total cost structure**: operating infrastructure at its design capacity implies highly predictable fixed (operating, maintenance and capital) costs and low variable costs, resulting in an inflexible cost structure. In turn, investing in infrastructure requires a higher degree of certainty in future revenue streams, which underpins the requirement for long-term contracts, especially since infrastructure assets have little to no alternative uses.
- **Infrastructure as a service**: infrastructure companies have value because their assets provide a useful service to its users, the demand for which is the sole justification for the investment. Thus, despite consisting mainly of large tangible, immobile assets, the nature of infrastructure assets and the business of infrastructure companies is to provide a service.
- **Not a store of value**: it follows that, unlike other ‘real’ assets such as land, building, commodities or art, infrastructure investment cannot be considered as a store of value. Infrastructure assets must be useful (and infrastructure companies provide a service) for them to have (social, economic and financial) value.

Assets and companies that can be categorised under *TICCS*® are expected to meet these fundamental criteria. All of them stem from the long-term and durable nature of infrastructure assets and the companies that hold them and the commitment of their owners to only recoup the value of their investment over a long time period.

TICCS® takes these myriad perspectives into account and uses a four-pillar multi-criteria approach that uses a number of academic insights about the industrial nature as well as financial economics of infrastructure companies:

- A business-risk classification takes into account the financial economics of infrastructure companies, in particular the role of contracts and regulation.
- An industrial classification uses a very granular taxonomy of industrial activities, technologies and asset-level characteristics that captures the potential diversity of infrastructure companies' services and products.
- A geo-economic classification captures the degree of common economic exposure of different infrastructure companies.
- Corporate-governance classification reflects the expected difference of behaviour between single-project and multi-project infrastructure ventures.

Find our more: What is *TICCS*®?