

# No more quartile lottery!

Robust Benchmarks for investors in private infrastructure funds



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Today, 80% of institutional investors exposed to unlisted infrastructure equity invested via managed private investment funds. As a result, fund manager selection and performance monitoring are key aspects of the investment process in infrastructure. Indeed, most individual infrastructure portfolios are concentrated in a limited number of investments reflecting active manager choices.

To select skilled managers, investors typically rely on rankings by quartiles of net IRR and multiples and aim to work with asset managers that are consistently in the top quartiles. Likewise, to monitor performance, investors need to compare the reported performance of the funds they are invested in, to that of comparable funds and, again, hope to achieve top quartile results.

However, this process is hindered by the limited availability of infrastructure fund performance data. There are at least five reasons why such data is scarce and biased, making both manager selection and monitoring very challenging:

1. available sample sizes are small (usually less than 30 funds in a vintage year).
2. contributed data suffers from multiple biases (reporting, selection and survivorship biases),

3. in the case of some strategies and geographies, too few funds may exist in the first place to achieve any robust estimate of the quartiles of returns even if all available data can be collected.
4. human intervention involved in the process can cause significant errors and large deviation in reported quartiles.
5. the same is true of outliers: if reported data includes one or two very high or very low IRRs, with a small sample, estimated quartile boundaries are not robust. As far as we know, there is no outlier treatment in existing datasets used to rank funds and managers.

Finally, contributed fund data is also typically stale, i.e. available with a lag of 1 to 3 years, depending on the age of the fund. New funds usually do not report any performance data for the first 2 or 3 years, and more mature funds tend to report with a lag of up to 4 quarters. And since most funds also arbitrarily set a fixed hurdle rate at 7 or 8%, in the absence of robust performance quartile data, there typically is no relative benchmark against which infrastructure funds and managers can be assessed.

This is not just a matter of sorting funds by IRR and picking the top of the list. The notion of quartile implies an underlying statistical distribution of returns and a relative ranking, i.e. ranking funds or managers by quartile is a basic form of performance benchmarking.

However, the distribution of private infrastructure fund returns in a given year is unknown and unobservable, and using sparse contributed performance data to estimate quartiles boundaries leads to unreliable results due to the paucity of available data.

For example, looking at the Preqin dataset of unlisted infrastructure fund performance metrics, recent vintage years typically exhibit between 10 and 20 contributors for net IRRs and between 15 and 35 contributors for net multiples. As of Q3 2021, the full Preqin dataset includes 228 observations of infrastructure fund IRRs going back to and only including at least 10 observations per vintage from 2006 onwards. Thereafter, the number of available observations per vintage ranges between 8 in 2009 to 24 in 2016, with an average of 15 observations per vintage year.

Descriptive statistics of the infraMetrics and Preqin datasets of net infrastructure fund IRR, 2005-2018 vintages

	Mean	Min	Q1	Q2	Q3	Max	Obs.
InfraMetrics net IRR*	8.84	-50.2	5.2	9.8	13.5	134.5	13,993
Preqin net IRR	12.33	-39.5	5.6	9.1	14.0	448.0	206

\*2 and 20 fee structure with 8% hurdle

## A quartile lottery?

Such paucity of performance data for infrastructure funds means that asset managers (GPs) can struggle to demonstrate whether they are performing adequately or not, while investors (LPs) are left none the wiser about the skills or performance persistence of their asset managers. Assessing infra fund managers based on contributed IRR quartiles is, in fact, a very unfair lottery.

EDHECinfra has developed a solution to end this endemic data paucity problem in the private infrastructure fund space with a new Fund Strategy Analyser component of its infraMetrics platform: thanks to our access to the market valuations and distributions of hundreds of individual infrastructure equity investments in 25 countries, over twenty years and in dozens of market segments, the infraMetrics Fund Strategy Analyser (iFSA) provides unbiased, robust and consistent quartile estimates of the performance of unlisted infrastructure investment funds.

iFSA uses the infraMetrics database to mimic the typical behaviour of private infrastructure investment funds and produce robust estimates of the IRR, multiples and PME quartiles that would be reported if thousands of funds existed in the market and faithfully reported their performance data in each segment and each vintage, every quarter. This tool uses several assumptions about the investment period, size, number of investments etc., of each fund which have been validated in beta trials with the industry and documented using historical information on fund raising dry powder and more. iFSA is updated quarterly on the tenth working day of each quarter, ensuring timely comparisons with other asset classes and fund performance reports.

In backtests, we compare the infraMetrics net IRR fund simulation

results and the Preqin dataset on an aggregate basis for the period 2005-2018. While this creates a backwards-looking bias that precludes using such results for the purpose of benchmarking funds today, this bias is common to both datasets and with 200+ data points, the Preqin quartile boundaries are now more accurate. Simulated results also fall within the confidence interval of contributed data points. Thus, the largest available sample of contributed data agrees with the simulation results about the overall distribution of the data taken in aggregate over 13 vintage years. This is a first validation of the ability of simulation to generate 'market-like' results.

## Advantages of simulated data

Simulated results are both congruent with contributed data in backtests at the aggregate level over a long period and more robust and precise at the vintage year or sub-segment level. Alignment of the results with market data is simply due to the use of market valuations and realised asset-level cash flows as the inputs of a bottom-up simulation. Meanwhile, the key advantages of generating a large number of observations for a large selection of possible funds are to avoid selection bias and survivorship bias, to use robust quartile boundary estimates, to have access to granular fund strategies and up-to-date data. infraMetrics produces results at T+10 from the end of every quarter-end, thus, ensuring that investors have access to up-to-date information.

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