Annual Superannuation Performance Test – design options

April 2024

We would like to thank the Commonwealth Treasury for the opportunity to provide comment regarding the design options for the Annual Superannuation Performance Test.

EDHECinfra and Private Assets, is a venture of the renowned international EDHEC Business School, is an index data, benchmarks, analytics, and research provider for investors in the unlisted infrastructure universe. We manage the world's largest database of such investments, offering indices to measure portfolio performance and fair value. We create custom solutions and have research hubs in Singapore and London.

We believe that whilst the performance test's aims are laudable in ensuring better retirement outcomes for Australians, we believe that there are areas of significant improvement. Specifically, the addition of alternative indices for unlisted infrastructure should be considered by the Government, to better achieve the policy's aims. In our response, we address consultation questions four and five.

Please find our comments below

Yours Sincerely

Dr Timothy Whittaker

Research Director

EDHECinfra and Private Assets

Commonwealth Treasury Consultation

Consultation Question 4

What asset classes do you consider require better coverage in the test? What asset classes are covered well by the existing test?

We believe that the unlisted infrastructure asset class is being poorly represented by the test. The selection of the MSCI Australia Quarterly Private Infrastructure Fund Index. The index is based on the Net Asset Value (NAV) of constituent funds that are domiciled in Australia. The funds need to be invested in infrastructure assets directly and need to be open-ended or semi-open ended (MSCI 2022) and provides a NAV quarterly. (MSCI, 2022) highlights that unlisted infrastructure lacks a ready source of transactions that allow for valuations, as a result, the index is estimated from appraisal values.

The choice of this index, we feel, is inappropriate for three main reasons.

Firstly, the index relies on contributions from the relevant funds. Contributed indices are notorious for having survivorship bias. As the performance results are released in a public manner, any underperformance by an asset manager would have future implications for future fund-raising opportunities. Therefore, there is an inherent risk that certain funds fail to report, or report accurately their performance. This would effectively bias the returns of the index upwards, indicating higher returns for infrastructure returns. An upwardly biased index will result in superannuation funds taking more risk in their infrastructure portfolio than they otherwise are comfortable, or, reducing the portfolio allocation to infrastructure for fear of failing to meet or beat the benchmark.

Secondly, the rules around index construction focus on the use of investment funds. This ignores the recent trend of the larger superannuation funds to build internal teams to invest directly in infrastructure assets, without the use of funds. As a result, the index is unlikely to be representative of the asset class. Instead, it would reflect the performance of smaller superannuation funds, which are unable to build internal terms. This lack of representation will have an impact on the results of the performance test and will result in clear dispersion in results between the investors with internal teams and those that have only access to funds.

Third, the MSCI index is an appraisal index. Whilst appraisal indices are widely used where there is a lack of alternatives in large asset classes including Private Equity and unlisted Real Estate. These indices are considered poor alternatives to observed transactions and other alternative indices and carry considerable risks when used to assess the performance of investment managers. Appraisal indices are known to exhibit biases in performance measurement, which as the main point for employing these indices in the Your Super Your Future Test can be considered poor policy.[1]

[1] (Giliberto, 1988) show that even if the valuation of the unlisted assets is unbiased, there is still bias in the construction of the returns, which can be positive, indicating that the returns for the assets are higher than actually received.

Consultation Question 5

a. **Do you consider additional indices covering additional asset classes should be added to the test? If so, please provide the following details for each of your recommendations:**
b. **Description of asset class**
c. **Name of recommended index covering the above asset class, including the length**
d. **of time data is available on the index**
e. **Details of appropriate fee and tax assumptions for such an asset class**
f. **Explanation of why you consider this index is appropriate for inclusion**

We will answer each part separately:

a) We consider that the unlisted infrastructure investment benchmark should be reconsidered.

b) Unlisted Infrastructure Asset Class

c) We propose updating this benchmark with ScientificInfra's AUD-hedged, post fee version of the broadmarket benchmark which tracks 603 unlisted infrastructure companies globally as of 31st March 2024.

d) This index is available on a quarterly basis for since 31st March 2000, allowing for a robust risk measurement using the 24-year history.

e) The index assumes fees which has been calibrated as an average of 120 observed closed-end unlisted infrastructure equity funds in the market. In 2024, this is estimated at a management fees of 1.63%, performance fees of 19.3% over a hurdle rate of 7.6%. Both management fees and performance fees are paid out quarterly. The cash flows of the underlying investments in this index are net of taxes.

f) We provide extensive rationale as to why this index, is in our belief, a better alterative in the Appendix to this submission.

Appendix

Appendix A - SUBMISSION TO THE AUSTRALIAN TREASURY

23 December 2020

Reference: https://treasury.gov.au/consultation/c2020-124304

Your Future, Your Super package

The authors, Frederic Blanc-Brude, Leonard Lum, Rebecca Tan and Timothy Whittaker are researchers at EDHEC Infrastructure Institute (EDHECinfra) a research group based at EDHEC Business School (edhecinfra.com). EDHECinfra is also a provider of index data to investors in infrastructure. It's flagship index the infra300 documents the risk adjusted performance of the global unlisted infrastructure equity market and is freely available on its website and Bloomberg (ticker:infra300).

In this contribution to the exposure draft consultation on the "Your Future, Your Super" package, we do not comment on the general approach taken by the regulator to benchmark MySuper products but solely focus on the choice of benchmark for the unlisted infrastructure asset class. **We propose abandoning the use of listed equity indices to proxy investments made in the unlisted infrastructure equity asset class in the proposed performance tests of MySuper products. We argue that recent advances in data collection and innovation in asset pricing provide a robust and academically validated alternative to the currently proposed benchmark**. This listed equity index (the FTSE Developed Core Index) is wholly inadequate because it is not representative of the universe or of the risks to which Superannuation products are exposed when investing in unlisted infrastructure. Instead, the infra300, an index built to be representative of the unlisted infrastructure universe, constitutes a robust and fair alternative that can benefit plan members and managers alike as well as meeting the prudential objectives of the regulator.

In a short accompanying paper provided alongside this submission, we document and back up with data four key points and two recommendations, which are summarised below:

1. Superannuation investments in infrastructure focus on those countries and sectors that make up the unlisted infrastructure universe.

The majority of their infrastructure equity investments are made in unlisted assets, via asset specialist asset managers, in Europe and Australia and in the Transport and Utilities sectors. We collect data for 424 investments made by Superannuation funds and still held at the end of 2019, 324 of which are in the 25 countries that make the bulk of the unlisted infrastructure universe, that is more than 70% of the unlisted infrastructure investments currently held by these funds.

The unlisted infrastructure investments made by Superannuation funds span the entire breadth of the unlisted universe including a number of sectors such as social infrastructure or renewable energy companies which are seldom found in listed markets. In terms of both geographic and sector distribution, the infrastructure portfolios of Superannuation funds are in line, albeit not similar to, with the unlisted universe. We report the following stylised facts:

1. There is a home bias: Australia represents close to 12% of the global unlisted infrastructure universe, but a quarter of the AUMs Superannuation funds dedicate to unlisted infrastructure.
2. Superannuation funds make 70-80% of their unlisted infrastructure equity investments in Europe and Australia.
3. Superannuation funds also favour investments in transport and utilities. These two sectors represent around 70% of their unlisted infrastructure investments by size.
4. 80% of investments in unlisted infrastructure by Superannuation funds, by count or by size, are made indirectly via managers. This is relevant when considering the role of fees.

2. The benchmark currently used in the APRA Heatmap test for infrastructure is not representative of the way Superannuations invest in infrastructure.

1. The FTSE Developed Core index corresponds to twice as few firms but 49 times as much market capitalisation than the unlisted infrastructure equity held by superannuation funds. The type of firms found in the FTSE index differs greatly from those unlisted infrastructure companies Superannuation funds invest in. The top 10 largest firms found in the FTSE index are very large telcos and energy firms that are closer to industrial conglomerates than infrastructure projects.
2. The FTSE index is extremely concentrated in Network Utilities which represent about half of the index weight. The FTSE Index is also underweight in key sectors of the unlisted infrastructure sector notably transport and social infrastructure, which are sectors in which Superannuation funds hold a significant part of their unlisted infrastructure investments. The FTSE index fails to represent entire segments of the unlisted infrastructure universe. Moreover, 16% of the index by market capitalisation (18% by size) cannot be considered infrastructure under the TICCS taxonomy.

Thus, the FTSE Developed Core Infrastructure Index is not at all representative of the Superannuation fund portfolios, which are focused on the transport sector and a spread of investments over all other segments of the unlisted universe.

The FTSE Core Index also exhibits strong return correlation with listed markets with very high and significant levels of correlation in the 70-80% range with equities in and outside Australia and Real estate. Indeed, we find that **more than half the number of constituents in the FTSE Developed Core Infrastructure Index are found in other APRA equity benchmarks**, translating to a 91% overlap in terms of market capitalisation for the FTSE Developed Core Infrastructure Index. We also show that the FTSE Core index does not in fact represent a unique asset class when compared with the other benchmarks of the APRA Heatmap: it is already ‘spanned’ by the risk-returns characteristics of the other asset classes used in the Heatmap.

Looking at the financial characteristics of the FTSE Core Index and the infra300 index of unlisted infrastructure produced by EDHEC, we see that:

1. Unlisted infrastructure is **more defensive** than the listed infrastructure would suggest: this is illustrated by the Value-at-Risk and Maximum Drawdown of the infra300 (hedged to AUD) and the FTSE Core Infrastructure (hedged to AUD). While the listed infrastructure index exhibits a 99.5% one-year VaR in the 25-30% range depending on the horizon, the VaR of the infra300 ranges between 15-18%. Likewise, the maximum drawdown of the FTSE Core index is in the 16-28% range while the infra300 never exhibits drawdown greater than 10-12%.

   This confirms that unlisted infrastructure does exhibit drawdown protection characteristics. In the accompanying paper, we show **that this finding is not driven by any 'smoothing' of the infra300 returns (which exhibit no serial correlation and significant volatility) but is instead the result of unlisted infrastructure companies being exposed to fundamentally different** risks than the constituents of listed indices, including during the Covid-10 lock-downs. This result suggests that unlisted infrastructure could be treated different in the 'simple reference portfolio' test conducted by APRA and categorised as more defensive than it currently is.

2. Unlisted infrastructure exhibits **higher risk-adjusted returns** than listed proxies: the Sharpe ratio i.e. the return per unit of risk, is 0.7 in Q2 2020 for the infra300 but 0.5 for the FTSE Core Index. A similar difference exists for all investment horizons. This higher risk-adjusted return is what attracts Superannuation funds to the unlisted infrastructure asset class.

   It must be noted that this is not the result of producing 'alpha' over a listed equivalent. First, we established that the listed index is not representative of the unlisted universe. Second, the higher risk adjusted returns of unlisted infrastructure investments are the result of systematic risk exposures and rewards. Proxying these risks in the context of the APRA SAA test requires using the right benchmark corresponding to the risks and rewards of the unlisted infrastructure asset class.

3. Unlisted infrastructure has **higher dividend yields** compared to listed infrastructure: the infra300 index has a 9.41% dividend yield compared to the FTSE Core mean dividend yield of 3.28%. Such a very significant difference in dividend yield, which is also one of the main reasons why investors are attracted to unlisted infrastructure, shows that the underlying firms and risks of the FTSE Core and infra300 indices are completely different.

Thus, the FTSE Core Infrastructure Index is completely inadequate as a proxy for the unlisted infrastructure portfolios or strategies of Superannuation funds:

- It is not capturing the same universe or the same type of firms;
- It is highly concentrated in a few firms that are not representative of the unlisted infrastructure universe in which the Superannuation funds invest;
- It is highly correlated with other listed indices and in fact cannot be statistically distinguished from them as demonstrated by mean-variance spanning tests;
- As expected, it exhibits risk and return characteristics that are very close to listed equity indices and is quite different from a global index of unlisted infrastructure equity (the infra300) which exhibits more defensive characteristics and different risk dynamics.

3. Better benchmarks exist that captures the characteristics of the unlisted infrastructure asset class in which Superannuation invest.

A better benchmark than the listed infrastructure index put forward to test the performance of MySuper products can be designed using a representative dataset and mark-to-market valuations that adequately capture the risks and returns of the unlisted infrastructure asset class. The infra300 is an index of the international market for unlisted infrastructure equity produced by EDHECinfra each quarter along with several hundreds of indices of the segments of the unlisted infrastructure universe and used by several dozen investors including in Australia.

While a listed index is not adequate when it comes to capturing the characteristics of the unlisted infrastructure asset class, until recently the only alternative was an index based on private appraisals (like the ones mentioned and rejected in the 2018 Productivity Commission report). Indeed, as the 2018 PC report highlighted, this type of data suffers from multiple issues and biases including a lack of representativeness (selection and survivorship biases) and no robust measure of risk due to the ‘smoothing’ of appraisals and returns.

These issues have now been addressed by recent advances in research: a representative dataset of the investible universe, and measures of the mark-to-market performance of the unlisted assets in this representative sample i.e. applying IFRS 13 guidelines and using the latest transaction data to update the estimate of the risk premia that applies to each investment, are possible.

With this approach there is no more smoothing in the returns and a proper measurement of the variance of returns is possible. Representative and realistic risk and risk-adjusted characteristics are produced.

The Covid-19 crisis provides a test of the inadequacy of the FTSE Core of unlisted infrastructure as represented by the infra300 index of unlisted infrastructure companies:

1. In **Q1 2020**, with the first wave of Covid-19 lock-downs all listed equities, including the FTSE Core index, experienced very negative quarterly returns due to their significant exposure to the market beta. Note that while the FTSE Core is mostly dominated by energy and telecom companies, which were not immediately impacted by Covid-19 lock-downs, the FTSE Core index had a -16% returns in that quarter (table 1 below). In comparison, the infra300 had smaller negative returns. Indeed, while the index includes numerous transport companies that were affected by the lock-downs, it also includes many more ’contracted’ infrastructure businesses which did not see their cash flows impacted by the Covid-19 lock-downs. The infra300 Q1 2020 returns are negative because the unlisted infrastructure equity market risk premia increased for almost all assets but in aggregate the impact on the unlisted infrastructure sector was less dramatic than for listed equities, despite subsegments of the infra300 like unlisted airports having strong negative returns. The FTSE Core Index could not have captured this effect, despite the fact that exposure to unlisted transport assets is at the heart of the Superannuation unlisted infrastructure investment strategies.
2. In **Q2 2020**, with the spread of the pandemic and the economic impact of the lock-downs, more infrastructure sectors began to be affected negatively such as utilities and roads. The infra300 continued to exhibit negative returns but listed benchmarks including the FTSE Core Index returned to positive quarterly returns as a result of the strong rebound in capital markets. Once again, we see that the unlisted and listed indices follow very different dynamics and that the FTSE Core does not represent what happened to the unlisted infrastructure asset class.
3. In **Q3 2020**, the infra300 returned to positive territory as the unlisted infrastructure market risk premia stabilised and some infrastructure sectors exhibited a strong rebound in revenues such as toll roads. The FTSE Core index was also positive but not for the same reasons since it is exposed to different risks and does not include significant exposure to transportation assets, one of the main types of unlisted infrastructure held in superannuation products.
4. On a **YTD basis in 2020**, we see that the FTSE Core exhibits -7% returns in AUD hedged terms whereas unlisted infrastructure has proven more resilient and is down -4.7% globally (AUD hedged), despite the larger losses experienced in the most exposed merchant transport sectors. Clearly, as a benchmark of how the unlisted infrastructure performed during the Covid-19 pandemic, the FTSE Core is a poor proxy of the unlisted infrastructure sector. The infra300, which is build directly from measures of the fair market value of a representative set of unlisted infrastructure companies, shows the actual impact of higher risk premia, lower cash flows and lower interest rates on unlisted infrastructure NAVs.

Thus, while the FTSE Core Index is shown to be wholly inadequate as a proxy for unlisted infrastructure, in particular in terms of coverage and representativeness of the investments made by Superannuation funds, it is possible to build and produce a fair benchmark of the unlisted infrastructure asset class: the infra300 is designed to be a bias-free, representative view of the ’principal’ market i.e. the main markets in which buyers and sellers of unlisted infrastructure companies are the most active, including Australian Superannuation funds. It is based on a mark-to-market asset pricing technology that captures the risks inherent to the asset class and produces robust, realistic results that can serve as the basis for benchmarking the investments made in MySuper products, as the example of the Covid-19 crisis demonstrates.

Table 1: Impact of Covid-19 on Infrastructure: Gross Quarterly Total Returns of Public Equities, FTSE Core Infrastructure Index and the infra300 Index

Index	Currency	Q4 2019	Q1 2020	Q2 2020	Q3 2020	YTD 2020
ASX	AUD	0.71%	-23.41%	16.79%	-0.06%	-10.6%
MSCI x-Australia	AUD	4.68%	-9.35%	5.91%	4.01%	-0.1%
MSCI x-Australia	AUD Hedged	7.72%	-20.85%	17.65%	6.66%	-0.7%
FTSE Core	USD	3.46%	-16.83%	8.50%	4.21%	-6.0%
FTSE Core	AUD Hedged	2.38%	-15.92%	7.11%	3.16%	-7.1%
infra300	local curr.	-2.63%	-3.91%	-3.19%	1.84%	-5.3%
infra300	USD	-2.26%	-3.27%	-6.00%	7.69%	-2.1%
infra300	AUD	-1.47%	-2.32%	-1.86%	-2.63%	-6.7%
infra300	AUD Hedged	-2.42%	-3.78%	-2.95%	2.00%	-4.7%

Source: EDHECinfra, Datastream. Gross total returns.

4. Using the infra300 as the unlisted infrastructure benchmark in the APRA tests is supportive of the regulator's objectives

We look at the two performance tests that APRA currently produces for the Heatmap: the Simple Reference Portfolio (SRP) test and the Strategic Asset Allocation test (SAA) and consider how they may be impacted by switching the benchmark of the unlisted infrastructure asset class from the listed FTSE Core Index to the infra300 index of unlisted investments in infrastructure equity described in detail in the previous section.

We examine two potential evolutions of the treatment of unlisted infrastructure in the APA performance tests:

1. The impact on the SRP of classifying unlisted infrastructure as more defensive that it currently is, given the evidence provided by the infra300 on the defensiveness of the asset class, which is not captured by the FTSE Core benchmark currently used.
2. The impact on the SAA test of using the infra300 instead of the FTSE Core Index, in particular, whether it would support the regulator's objective to 'punish under-performance' in MySuper products.

We argue that unlisted infrastructure should be considered more defensive since it possess properties that help protect portfolios in downside markets like lower VaR and lower maximum drawdown as shown by the infra300. This index also exhibits significant correlations with both international fixed income and Australian fixed income, asset classes that are considered defensive in the APRA classification, and lower correlations to listed equities.

To conduct this analysis, we use the MySuper asset allocations for the 138 products obtained from MySuper statistics. We make the same SRP calculation than APRA but using a 50-50 split between growth and defensive styles for unlisted infrastructure. We find that increasing the defensive classification of unlisted infrastructure from 25% to 50%, decreases the SRP for products invested in infrastructure from 7.227% to 7.165%. This is normal since the defensive style can be expected to have lower returns but the change is marginal, thus *making the test equally robust from the point of view of the regulator* but better reflecting the defensive characteristics of the unlisted infrastructure asset class in individual cases.

Next, in the context of the SAA test, the use of the wrong proxy results in making incorrect conclusions as to how much value is added by managers. Implementing the SAA test with listed benchmark assigned to proxy unlisted infrastructure would lead to random, unscientific and fundamentally unfair outcomes:

- In some periods the listed market exhibits much stronger returns than unlisted infrastructure, which is characterised by its defensive characteristics and attractive risk-adjusted returns. In this case, investors in unlisted infrastructure would be unjustly punished by the SAA test.
- In other periods, listed markets may have lower returns than private assets and investors would benefit from an 'apparent' alpha just by allocating finds to unlisted infrastructure but without exhibiting any skills while doing so.

Using a representative index like the infra300 (here, net hedged-AUD) would solve this problem. The infra300 is much closer to the investment strategy of Superannuation funds in unlisted infrastructure and also designed to be representative of the unlisted infrastructure equity universe.

To determine what the impact of using the infra300 in the SAA test instead of the FTSE Core Index would be, we make a similar comparative analysis between single strategy 63 MySuper products and examine the impact on the SAA test of changing the infrastructure benchmark for the infra300 index instead of the FTSE Core. As shown in table 2, we find that:

1. 14 out of 63 products, score better than the SAA benchmark when using the infra300 instead of the FTSE Core index
2. 39 products score less well than they would using the FTSE index
3. 10 products fare the same irrespective of the choice of infrastructure benchmark, mostly because they invest very little or not at all in this asset class.
4. A single product actually switches from outperforming its SAA benchmark to under-performing it because of the change of infrastructure benchmark from the FTSE Core to the infra300.

Thus, **using the infra300 index as the proxy of unlisted infrastructure does not overturn the results of existing SAA tests and preserves the regulator's objective to apply a robust market test to Superannuation products. Because it uses the correct benchmark, as we argued above, instead of punishing managers randomly and unfairly, using the infra300 would reward those managers who invested skillfully in the relevant unlisted infrastructure market.**

Looking at APRA's Q2 2020 *Heatmap*, we see that the products that underperform in the SAA test do so on average by -0.63% (median -0.65%). This puts the small size of the mean impact on returns of switching infrastructure index in perspective: while the average effect is unlikely to change the test result, the more infrastructure plays a role in the product, the more relevant using the correct benchmark becomes and the more it makes a difference in the SAA test. More details are provided in the supporting paper.

Table 2: Impact of Using the infra300 (net, hedged-AUD) instead of the FTSE Core in the APRA SAA Test in 63 Single Strategy MySuper Products

	Products with no change	Products with lower performance	Products with better performance
By Number	10	39	14
By Percentage	15.8%	61.9%	22.2%

Source: EDHECinfra

Our Recommendations

These finding are in line the intent of the 'Your Future, Your Super' legislation and demonstrates the importance of including a relevant, representative benchmark for unlisted infrastructure investment.

Using the infra300 in the APRA Heatmap and subsequent performance tests would not only be much more representative of the underlying investments made and risks taken by investors in unlisted infrastructure but also help identify those managers that actually create value through these investments.

Our two recommendations to the Treasury and to APRA in the context of the reform of MySuper are to:

1. recategorise unlisted infrastructure as 50% defensive in the Simple Reference Portfolio (SRP) test of the APRA Heatmap, and to
2. use the infra300 index (Hegded-AUD) to proxy the unlisted infrastructure asset class in the Strategic Asset Allocation (SAA) test of the APRA Heatmap. This index is described on the EDHECinfra website (edhec.infrastructure.institute/infra300-index) and available on the EDHECinfra platform (indices.edhecinfra.com) and via Bloomberg.

Appendix B - **Response to the May 2021 consultation on Your Future, Your Super Regulations and associated measures (treasury.gov.au/consultation/c2021-162375)**

25th May 2021

The author, Frederic Blanc-Brude, is the director of EDHEC Infrastructure Institute (EDHECinfra) a research group based at EDHEC Business School (edhecinfra.com). EDHECinfra is also a provider of index data to investors in infrastructure. It's flagship index the infra300 documents the risk adjusted performance of the global unlisted infrastructure equity market and is freely available on its website and Bloomberg (ticker:infra300).

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Summary

In the April 2021 exposure regulation of the "Your Future Your Super" reform, the Treasury put forward the MSCI Australia Quarterly Private Infrastructure Index as the proposed benchmark for the unlisted infrastructure asset class in the forthcoming performance tests to be conducted by the Australian Prudential Regulatory Authority. **This response to the consultation highlights several reasons why this choice is flawed, reports the results of a survey of the superannuation industry about the proposed benchmark, and presents our proposal to adopt an alternative index**. The benchmark put forward by the Treasury poses a number of methodological and practical issues and is not the preferred choice of the superannuation industry (90% against). The infra300® index is a better, cheaper and fairer alternative benchmark that should be preferred.

The main issues include:

- **The proposed benchmark is unfair and creates toxic incentives:** This index suffers from significant survivorship bias due to the contributed nature of the data, which tends to include 'winners' only. It exhibits double-digit returns (c.12%) for the most recent 8- year period (the relevant 'look back' period for the performance test) and is either impossible to beat for most investors in infrastructure or, where this is an option, require significant additional leverage to magnify returns. As a result, instead of investing in real assets that diversify portfolio risk, investors would be exposed to concentrated, financial risks.

- **The proposed benchmark is not representative** of the investments in unlisted infrastructure equity made by Superannuation funds and exhibits a large bias towards the transport sector. Furthermore, the control over its data sources is insufficient to guarantee that the benchmark provides an accurate and reliable representation of the interest it seeks to measure. As such **it is at odds with the objectives of the IOSCO Principles for Financial Benchmarks and their implementation under Australian law (i.e., the ASIC Financial Benchmark Rules).** Specifically, its data inputs keep changing as contributions increase or submitters unilaterally withdraw from data provision and its provider cannot determine whether the data that are contributed are accurate or valid. Controls over the quantity and quality of submissions are sorely lacking.
- **The lag of the proposed benchmark makes it unusable for annual performance testing and the suggestion to mix unlisted and listed data creates further unfair and random biases**. Due to its contributed nature, the proposed index suffers from a time lag. Even its limited contributions can only be fully reported 2 or 3 quarters after the index date and the lag may extend in times of crisis (e.g., Covid-19). The suggestion to combine unlisted data with clearly incompatible listed data in the APRA test to palliate the lag of the proposed benchmark is methodologically unsound and wholly rejected by the industry (100% against).
- Because of the limitations of the MSCI index, it has been proposed by the Treasury to combine this data with another index of listed infrastructure companies. However, by mixing two indices to create a benchmark, **the Treasury and APRA would jointly become a benchmark administrator**. Arrangements should thus be in place for compliance with applicable standards and laws, notably ASIC Financial Benchmark (Administration) Rules 2018, where relevant. The Treasury and APRA would also find themselves both judge and jury in the performance tests of MySuper products, **creating a potential case of abuse of power for which they could be held liable by Superannuation funds.**

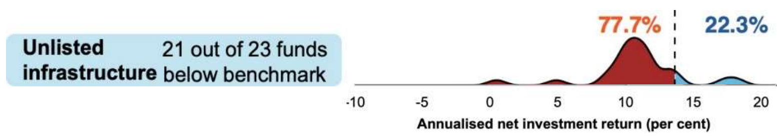
We believe this initial choice was misguided and due to a lack of appreciation of the limitations of the underlying data. **The infra300® index provides a genuine alternative: it is a fair, representative, unbiased, timely and free-of-charge index already widely used by Superannuation funds representing 485bn AUD of Assets Under Administration** i.e., a quarter of all Superannuation assets.

1. KEY ISSUES WITH THE PROPOSED BENCHMARK FOR UNLISTED INFRASTRUCTURE

The proposed benchmark is unfair and creates toxic incentives

In its review of contributed indices including the one currently proposed by the Treasury, the Productivity Commission report already highlighted the significant survivorship bias issues found in this data (see figure 1). This bias is a well-known phenomenon (see for example Brown et al, 1992) and occurs because only well-performing funds/assets are available to report on an ongoing basis.

Figure 1: Distribution of unlisted infrastructure net returns and proposed benchmark survivorship bias, 2011-2017



Source: Superannuation: Assessing Efficiency and Competitiveness, Inquiry Report no. 91, Technical Supplement 4, Pg67. Productivity Commission, 2018.

In practice, the vast majority of investors would be unlikely to beat the proposed benchmark, which exhibits double-digit returns (circa 12% post fees) for the past 8 years, including an 8% 12- month return as of Q1 2021, which is an extremely high number, which given the impact of Covid-19 on transport infrastructure companies since Q1 2020, is unlikely. On a net-of-fee basis, the infra300 index, which covers 300 investments in 22 countries returned less than 10% post- fees for the same 8-year lookback window and is negative for the past 12 months to Q1 2021 due to the impact of Covid-19 on expected dividends, risk premia and higher interest rates worldwide in Q1 2021 (see table 1). Clearly the proposed benchmark is a ‘winners only’ index. See below on why the infra300 is more accurate.

Table 1: MSCI Australia Quarterly Private Infrastructure and infra300 index, net of fees returns, AUD, Q1 2021

	12-month	3 years	5 years	8 years
MSCI Australia Qrtly	8.0%	8.1%	10.2%	12.3%
Infra300 AUD net	-15.0%	0.5%	1.1%	9.5%

Source: MSCI, EDHECinfra

In order to beat the proposed benchmark, fund managers would have to increase fund leverage or invest in riskier ‘PE-like’ assets instead of the lower risk, stable assets that long-term investors typically target when considering allocations to the infrastructure asset class. In the end, to meet the high benchmark returns, excessive risk taking would be encouraged. Instead of providing superannuation plan members with exposure to stable, long-term infrastructure, the proposed benchmark would create incentives for fund managers to increase exposure to financial risks.

Promoting such excessive risk-taking with an ill-suited benchmark is contrary to the regulator's mandate to promote prudent investing.

The proposed benchmark is not representative

The design of the proposed benchmark offers insufficient control over data sources to guarantee that the benchmark provides an accurate and reliable representation of the interest it seeks to measure. The benchmark is inherently at odds with the IOSCO Principles for Financial Benchmarks (and the guiding obligations of the ASIC rules in terms of quality, integrity, availability, reliability and credibility of benchmarks). Indeed, MSCI argues that benchmarks based on voluntary submissions cannot be held to the same standards of quality control and representativeness as other types of benchmarks ; in its 2013 response to the IOSCO consultation on principles for financial benchmarks, MSCI notes that, as far as contributed indices are concerned: "it will often be impossible to ensure representativeness when the full universe of eligible portfolios is not knowable and enforced participation is not an available option. Moreover, frequency specification cannot be dictated to participants." (MSCI 2013, pg7)

As a result, the proposed benchmark is biased towards high returns because a changing group of fund managers choose whether or not to report performance data. In effect, the composition of this index has been changing continuously:

- In a 2017 report to the G20, the OECD noted that the MSCI Australia index included data for 23 funds (OECD 2017, pg31).
- In February 2019, MSCI announced "a change in the composition of the MSCI Australia Quarterly Private Infrastructure Fund Index (Unfrozen) for December 2018." The December 2018 results would now include one new contributing fund, resulting in an increase of 19.94% in the overall Net Asset Value of the Index. (MSCI, 2019)
- In May 2020, MSCI announced changes in the composition of the MSCI Australia Quarterly Private Infrastructure Fund Index (Unfrozen) for March 2020." The March 2020 results would exclude information on seven funds which have not provided data, resulting in a decrease of 69.0% in the overall Net Asset Value of the Index. (MSCI, 2020a)
- In August 2020, MSCI announced "changes in the composition of the MSCI Global Quarterly Private Infrastructure Index (Unfrozen) for December 2019." The index would include two new contributing funds, resulting in an increase of 125.0% in the overall Net Asset Value of the Index. (MSCI 2020e)

As per the index methodology, the historical data for funds that stopped reporting remains in the index history as per data provision. These constant changes in the composition and granularity of the underlying data add to the selection and survivorship biases already reported in the Productivity Commission in 2018.

The 2018 Productivity Commission report already included concerns about the representativity of this index for superannuation funds with several contributors stating that "(t)he MSCI/IPD unlisted infrastructure benchmark is too high or not representative of investments in the system." (Productivity Commission, 2018, pg26 and 28.)

Today, the index includes data for 12 funds (from 6 fund managers) i.e., half as much as it did in 2017. Realistically, its biases and lack of representativity can only have increased. Its composition is highly concentrated: for Q1 2021, 63% of the MSCI Australia Quarterly index consist of investments in the transport sector (one quarter of the index is made of airports) and 2.6% of investments in renewable energy. Over time these weights have changed in an ad hoc manner as contributions kept changing (see table 2). Some sectors have all but disappeared (e.g., power generation) and others more than doubled in weight (e.g., power transmission).

Table 2: Sector weights of different vintages of the proposed benchmark

	Transport (airports)	Renewables	Power generation	Power transmission	Water	Public facilities
Q1 2015	59% (34%)	3%	9%	8%	10%	4%
Q2 2017	61% (27%)	2%	11%	14%	6%	3%
Q1 2021	62.8% (24.2%)	2.6%	1%	21.2%	6.7%	4.5%

Source: MSCI

As of 2019, Superannuation funds only invested a third of their infrastructure assets in transport and already close to 10% in renewable energy projects (see Blanc-Brude et al, 2020). Going forward, the decarbonisation of Superannuation portfolios is likely to make the available coverage and high concentration in carbon-intensive transport assets of the proposed benchmark even less relevant given the gradual shift of large investors towards net zero emissions.

The lag of the proposed benchmark makes it unusable for annual performance testing

"Unfrozen" contributed indices such as the proposed benchmark can be released with only partial data from their contributors and be updated later. In effect, the Q1 2021 release of the proposed benchmark is unlikely to include all the data for its 12 contributing funds.

Data contribution can be delayed for numerous reasons: in an April 2020 press release, MSCI clarified that events like Covid-19 could make contributed data unavailable for substantial periods of time: “As a result of the impacts of the COVID-19 pandemic, certain valuers have included a significant uncertainty disclosure to their valuation data as of March 2020.” (MSCI, 2020c) In effect, such delays are frequent. In March 2017 and in June, September and December 2020 MSCI announced “a delay to the release of the (Quarterly) results for the Global Quarterly Infrastructure Asset Index (…) to allow for collecting and processing missing data from particular index participants” (MSCI, 2017, 2020b, 2020c, 2020d). This is far from respecting the IOSCO principle that ensuring “that the benchmark reflects changes to the assets underpinning a benchmark,” (IOSCO, 2013, pg20)

To address these issues, the draft regulation proposes that “where the index value for those covered asset classes for the last quarter in the lookback period (...) is not publicly available within 28 days after the end of the financial year for which the performance test is conducted (...) the regulations provide that the assumed index for ‘Australian Listed Infrastructure’ is instead to be used in relation to the final 2 quarters in the lookback period for the product.” (2021 Exposure Draft Explanatory Statement, pg12)

This means that each annual performance test will include listed benchmark data mixed with the unlisted benchmark. If data contribution to the unlisted benchmark is delayed, it will require either using more than 2 quarters of listed data or using only partially contributed and even thinner unlisted data, increasing the concentration, bias and randomness of the benchmark and with no option to revise the results of the test once the private data become available.

This approach combining ad hoc and effectively random data to assess the performance of the unlisted infrastructure equity asset class, which now represents about 5% of the asset allocation of the Superannuation sector and more than 7.5% of the allocation of the top 20 Superannuation funds (Blanc-Brude et al 2020), does not take the APRA performance test seriously.

The decision to mix indices to create the benchmark also creates the potential for abuse of power by the regulator.

Finally, under IOSCO principles, creating the benchmark from the combination of two indices makes the Treasury and APRA joint administrators of the benchmark i.e., “an organisation that controls the creation and operation of the benchmark administration process, whether or not it owns the intellectual property relating to the benchmark." (IOSCO, 2013, pg38). The Treasury and APRA should ensure this activity is performed in compliance with ASIC Financial Benchmark (Administration) Rules 2018.

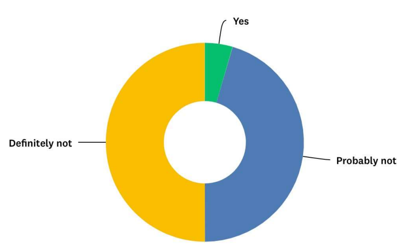
It also creates a potential conflict of interest by making the regulator, as administrator of the benchmark, both judge and jury of the performance of Superannuation funds. Whether this could amount to a case of **abuse of power by the regulator** is a legitimate legal question.

2. INDUSTRY SURVEY ON THE CHOICE OF BENCHMARK FOR UNLISTED INFRASTRUCTURE IN THE DRAFT REGULATION

In May 2021, we conducted a survey of 22 Superannuation funds (CIO or Head of Infrastructure) and their consultants. Superannuation respondents represent circa 380bn AUD of assets under management i.e., circa 20% of all Superannuation AUM in 2020 and range between 2 and 70bn AUD of AUM. The survey shows that the superannuation section is unconvinced by the proposed benchmark and does not support its intended use in the draft regulation.

Q1: Is this index sufficiently granular and representative to benchmark the unlisted infrastructure investments made by Superannuation funds fairly? 95% of respondents say no.

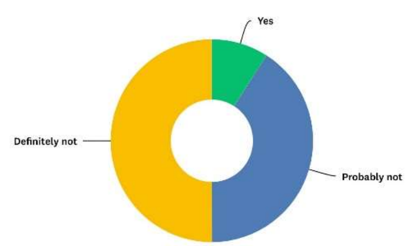
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	4.55%	1
Probably not	45.45%	10
Definitely not	50.00%	11
TOTAL		22

Q3: This index exhibits survivorship bias. Would this index be a fair benchmark for Superannuation investors in infrastructure? 91% of respondents say no

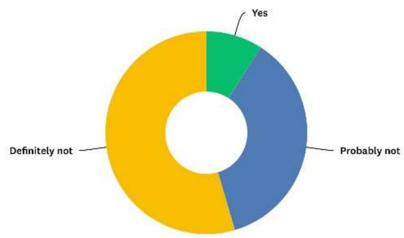
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	9.09%	2
Probably not	40.91%	9
Definitely not	50.00%	11
TOTAL		22

Q2: This index is 'unfrozen' meaning that it can change retrospectively if new data is contributed. Is this acceptable for an index used in a time-based performance test? 91% of respondents say no

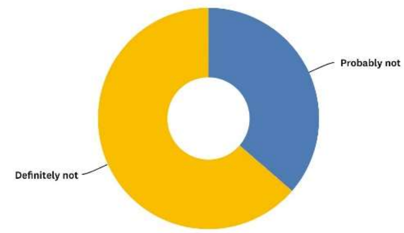
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	9.09%	2
Probably not	36.36%	8
Definitely not	54.55%	12
TOTAL		22

Q4: Is it reasonable and fair to mix unlisted and listed indices to conduct the annual APRA performance test? 100% of respondents say no.

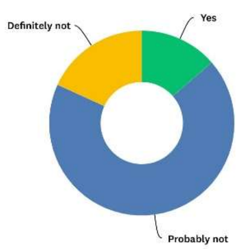
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
Probably not	36.36%	8
Definitely not	63.64%	14
TOTAL		22

Q5: Should the MSCI Australia Quarterly Private Infrastructure Index be the preferred benchmark for the annual APRA performance test? 86% of respondents say no.

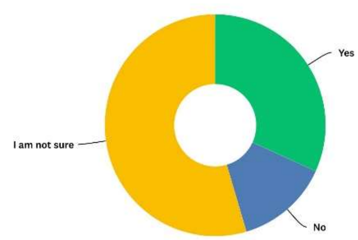
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	13.64%	3
Probably not	68.18%	15
Definitely not	18.18%	4
TOTAL		22

Q6: Would you prefer the infra300 index to be used in the APRA performance tests? 86% say yes or maybe.

Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	31.82%	7
No	13.64%	3
I am not sure	54.55%	12
TOTAL		22

PROPOSED ALTERNATIVE: THE INFRA300® index

Under IOSCO principles (IOSCO 2013, section 6), benchmark design should take into account a) the adequacy of the sample used, b) the size and liquidity of the relevant market, c) the relative size of the underlying market in relation to the volume of trading in the market that references the benchmark, d) the distribution of trading among market participants (market concentration) and e) market dynamics (e.g., to ensure that the Benchmark reflects changes to the assets underpinning a Benchmark). The data used to construct a benchmark determination should also be sufficient to accurately and reliably represent the asset class measured by the benchmark and should a) be based on prices that have been formed by supply and demand and b) be anchored by observable transactions entered into at arm's length between buyers and sellers in the market. (IOSCO 2013, pg20)

In the survey described above, we asked superannuation funds about the importance of certain characteristics of the chosen benchmark: representativity, timeliness, absence of biases and the use of unlisted data only were all reported to matter and to be either 'important' or 'essential' by the overwhelming majority of respondents (see figure 4 below), echoing IOSCO principles.

The infra300 index is in line with IOSCO principles. It does not rely on contributed data but is a calculated index using a bottom-up data collection strategy to capture a representative sample of the investable universe: **its 300 constituents represent a sample of a broader universe of 6,800 unlisted infrastructure equity investments.** This universe is based on the detailed analysis of the 25 most active markets for private infrastructure companies, the availability of such investments at each point in time and the relative size of each segment of this universe (see EDHECinfra Universe Standard, 2020).

Its calculation methodology includes the calibration of an asset pricing model for each constituent using the latest transactions available in the secondary market**: it is based on market prices formed by supply and demand** at the time of valuation and captures both the structure of the market by sector and type of infrastructure, but also the latest price of risk and term structure of interest rates.

Contrary to the proposed benchmark, the infra300 addresses the 4 main issues identified above:

- It is not a 'winners only' index but instead reports the fair level of market returns
- It is representative of the global universe in which Superannuation funds invest
- It is published in a timely manner each quarter on the tenth working day of the quarter.
- It benefits from a proper index governance

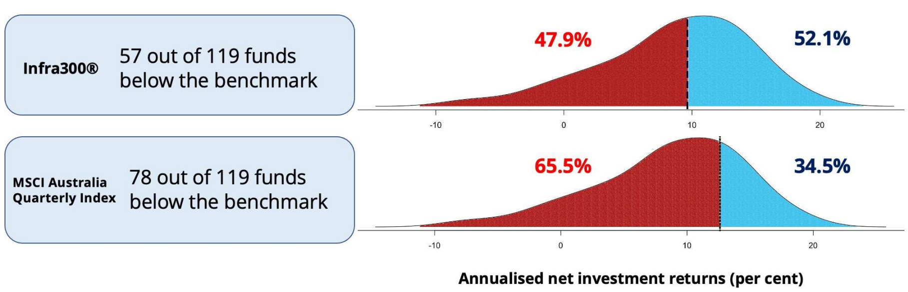
A fair benchmark: no survivorship bias in the infra300 index

Superannuation funds do not publish their unlisted infrastructure investment returns to provide a direct comparison with the infra300 or the proposed benchmark, but a reasonable proxy might be obtained from the net fund returns of 119 unlisted infrastructure equity funds investing in core, core+ and opportunistic strategies for the past 8 years (2016-2020 vintages). While Superannuation funds are only one category of LP present in these funds, they represent in aggregate the strategies to which the superannuation sector is exposed.

Consistent with the 2018 PC Report, figure 2 shows that the MSCI index exhibits likely survivorship bias while the infra300 corresponds to the average net 8-year return for a global population of unlisted infrastructure equity funds. Indeed, if 65% of funds underperform the MSCI index it is because this index is not representative of the average performance, which is the result of the survivorship bias discussed above. Conversely, because the infra300 index is representative of the universe, its average return is very close to the mean net return of these funds.

The infra300 does not exhibit survivorship bias because it is build using a bottom-up approach which captures the investible market at each point in time and includes numerous assets that fail, go bankrupt or into default. The EDHECinfra database documents 150+ defaults or dividend lockups, and dozens of bankruptcies over the past 20 years.

Figure 2: distribution of net 8-year returns 2016-2020 – infra300 vs MSCI Australia Quarterly Index



Source: Preqin, MSCI, EDHECinfra

The infra300 is representative of Superannuation funds target universe

The infra300 index includes a consistent set of 300 unlisted equity investments in the 22 most active markets since Q1 2000. It is designed to match the weight of the unlisted infrastructure equity universe by TICCS[1] segments i.e. by business risk, industrial activity and corporate structure, as shown on figure 4.

Timely publication of the infra300 index

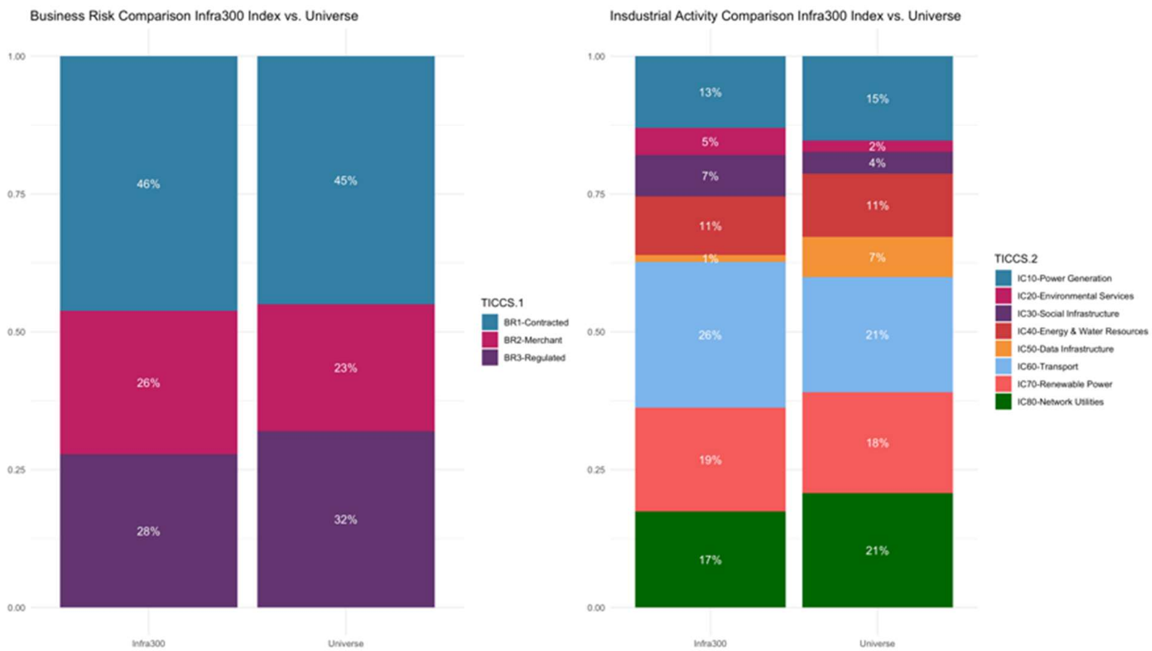
Table 3 shows the publication and index value date for the infra300 index since Q1 2020. The index is available on the EDHECinfra platform and via Bloomberg (ticker:infra300) on the tenth working day of the quarter.

Table 3: infra300 Index Release Dates

Release name	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Release date	13-Apr-2020	10-Jul-2020	13-Oct-2020	18-Jan-2021	12-Apr-2021
Index value date	31-Mar-2020	30-Jun-2020	30-Sep-2020	31-Dec-2020	31-Mar-2021

1 The Infrastructure Company Classification Standard, see docs.edhecinfra.com/display/TICCS

Figure 3: Investible universe (rhs) vs infra300® (lhs) weights by business risk and industrial activity TICCS® segment.

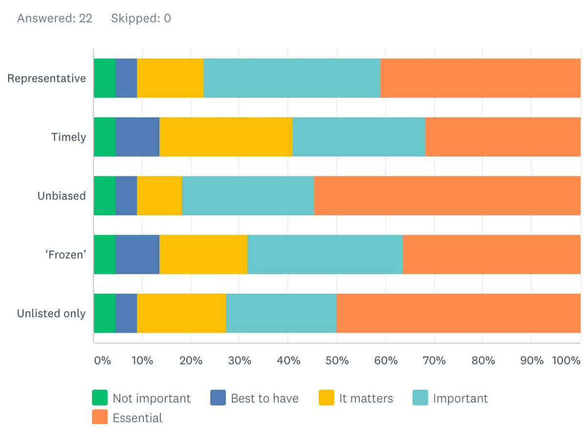


The infra300 index governance is aligned with IOSCO principles

The composition of the infra300 index is determined and reviewed annually and quarterly by the EDHECinfra index committee in the context of a control framework and internal oversight ensuring the quality of the benchmark as described above, including ensuring that the benchmark relies on market prices observed in active markets and uses a transparent methodology.

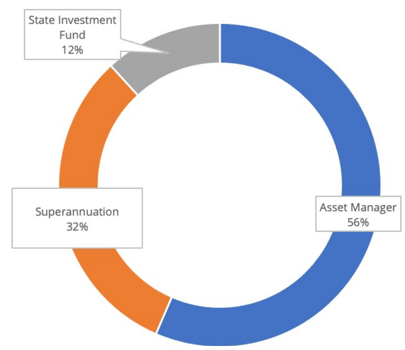
See appendix D for details on how the infra300 index satisfies the IOSCO principles for financial benchmark.

Figure 4: What would be an appropriate benchmark for the annual performance test of the Superannuation sector unlisted infrastructure equity investments?



May 2021 Survey of Australian investors, EDHECinfra

Figure 5: Breakdown of current users of EDHECinfra Index data – Australian users only, AUM: 1.5Tr AUD



CURRENT USAGE OF THE INFRA300® INDEX BY AUSTRALIAN INVESTORS

The EDHECinfra data is currently used by a wide range of Australian investors. In total, the superannuation funds, state investment funds and asset managers that access the infra300® index represent 1.5Tr AUD of assets under management (see figure 5).

If we exclude asset managers to avoid some double counting, superannuation and state investment funds using EDHECinfra data represent 520bn AUD of AUM. Super funds alone represent 380bn AUD of AUM, of circa 24% of the superannuation total.

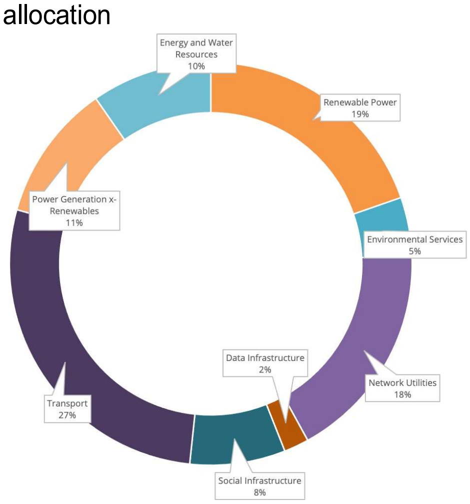
APPENDIX C: infra300® Index Factsheet – Q1 2021 (Gross and net AUD returns)

The infra300 equity index represents the quarterly performance of 300 unlisted infrastructure companies. The companies are selected to form a representative sample by TICCS categories of an underlying universe of close to 6800 firms in 22 countries. The index is equally weighted to minimize the impact of a few large firms and better represent the market accessible to the average investor. Since inception (Q1-2000), a total of 467 firms have been included in this index.

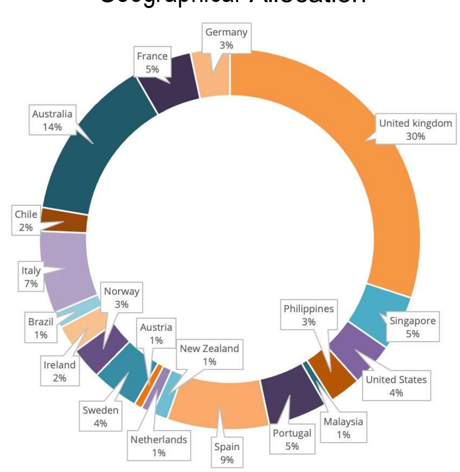
	Latest quarter*	1-year	3-year	5-year	10-year	Inception
Gross Total Returns	-4.22%	-12.80%	2.97%	3.60%	14.30%	12.67%
Net Total Returns	-4.84%	-15.02%	0.46%	1.07%	11.58%	9.98%
Volatility (gross returns)	-	-	11.45%	11.97%	15.47%	13.95%
Sharpe Ratio	-	-	0.19	0.20	0.79	0.63
Value-at-Risk	-	-	27.74%	28.18%	28.31%	24.00%

Total returns include cash yield and price returns. Volatility is the standard deviation of total returns. Sharpe Ratio is the ratio of excess returns to the standard deviation of returns. Value-at-Risk is the 99.5% Cornish-Fisher VaR. Net returns computed using blended fee assumption of 2.5% pa.

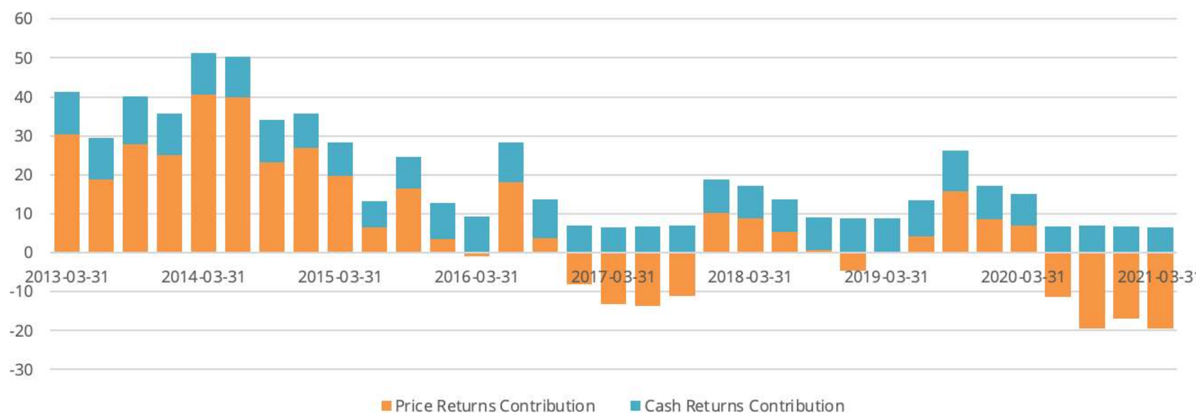
Sector allocation



Geographical Allocation



Capital and income returns (gross) of the infra300 (AUD) Q1-2013 to Q1-2021



APPENDIX D: Compliance of the infra300 index with IOSCO principles for financial benchmarks (IOSCO, 2013)

Governance

Appropriate governance arrangements are in place in order to protect the integrity of the Benchmark determination process and to address conflicts of interest:

- A single entity is responsible for all aspects of the benchmark determination process.
- No activities related to the benchmark determination process are undertaken by third parties
- There are no conflicts of interests related to the entity responsible for the benchmark determination process
- A control framework is in place to monitor and validate the inputs and outputs of the benchmark determination process

Quality and transparency of the Benchmark

- The data used to construct the infra300 is based on prices formed by the competitive forces of supply and demand in the 25 most active markets and are anchored by hundreds of observable transactions entered into at arm's length between buyers and sellers in the market for unlisted infrastructure equity.
- The benchmark is built on the basis of clear rules regarding the hierarchy of data inputs and the exercise of expert judgment used for the determination of infra300 index.
- Each publication of the infra300 index is the object of a concise explanation sufficient to facilitate a subscriber's or market authority's ability to understand

how the index determination was developed, as well as a concise explanation of the extent to which and the basis upon which judgment, if any, was used in establishing a determination. This data is published on the EDHECinfra website each quarter.

- EDHECinfra conducts periodic reviews (annual and bi-annual) of the conditions in the underlying market for unlisted infrastructure equity to determine whether it has undergone structural changes that might require changes to the design of the methodology.

Quality of the Methodology

- Detailed methodology and technical documentation of the approach and methods used to make infra300 determinations, with sufficient detail to allow stakeholders to understand how the infra300 is derived and to assess its representativeness, its relevance to particular Stakeholders, and its appropriateness as a reference for financial instruments are available on the EDHECinfra website (docs.edhecinfra.com).
- The rationale of any proposed material change in the infra300 methodology and procedures for making such changes are made available on the same website.
- Guidelines for data submitters (Data Contributor Code of Conduct) is available on the EDHECinfra website.

Accountability

- Stakeholders may submit complaints concerning whether a specific infra300 determination
- EDHECinfra preserves an audit trail and cooperates with regulators at their demand.

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About EDHEC Infrastructure Institute Singapore (EDHECinfra):

EDHECinfra, a venture of the renowned international EDHEC Business School, is an index data, benchmarks, analytics, and research provider for investors in the unlisted infrastructure universe. We have built the largest, most representative database of underlying infrastructure investments in the world. Indices we provide help investors measure the risk-adjusted performance of private infrastructure debt and equity within their portfolios. Our indices use the latest market information to measure the fair value of thousands of unlisted infrastructure debt and equity investments in 25 countries. We can also create customized benchmarks for individual investors who require specific TICCS® tilts in their portfolio benchmark. Our research hub, a team of experts who create and maintain our indices, is based in Singapore. We also have a business centre in London to serve the financial community in Europe and North America.

http://edhec.infrastructure.institute