

Case Study # 2

Investing in Infrastructure

IFSWF Subcommittee II: Investment & Risk Management
Presented by the New Zealand Superannuation Fund

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Outline

- Context for infrastructure investment
- Landscape of infrastructure investment
- A possible SWF method
 - Analysis of sources of return
 - Risk analysis
 - Empirical assessments
 - Accessing investments
- Special topics
 - Working with government
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 - WEF infrastructure blueprint

The Context

Why we invest in infrastructure

- Infrastructure increasingly recognised as a distinct asset class, with definitive and risk and return characteristics separable from other assets
 - Stable, inflation-linked cashflows
 - Cashflows defined by essential nature of service, limited competition, long-lived assets
 - low market exposure (equity beta)
 - moderate to high interest rate sensitivity (fixed interest beta)
- Natural sellers
 - Fiscally-constrained governments with attractive assets or ambitious growth agendas that require these assets
- Natural buyers
 - Long-horizon pension funds and SWFs
- Natural (often, but not always) monopolies
 - high barriers to entry
 - long-term contracts
 - regulated pricing, delivery standards, etc.
 - stable demand base that is relatively insensitive to price and income

The landscape

Infrastructure assets suited to SWFs and the long-term investor

Utilities	Transport	Social
Power	Roads	Health
Water	Airports	Law and order
Gas	Rail	Education
Communications	Ports	Community facilities
Transmission & Distribution	Logistics	

- The classification of an asset as ‘infrastructure’ is best determined by market structure, the nature of the business and resulting cashflows rather than the sector in which it operates.
 - For example, airport revenues should be substantially aeronautical (regulated or not); if they are non-aeronautical, analysis should take a real estate/commercial property lens.
 - Alternatively, for utilities, the majority of revenue and EBITDA should come from regulated or take-or-pay contracts, with minimal potential for competitive market deregulation in the future.

Sources of return

And implications for a long-term investment strategy

1. Market inefficiencies

- a) Listed index alternatives poorly representative of desired infra characteristics, i.e. benchmark inefficiency → *prefer active, concentrated, strategy*
- b) Immature asset class; few specialist managers; small allocations (if any); variation in institutional owner capacity → *prefer active, concentrated, strategy*
- c) Opportunistic deals available → *prefer strategic stakes; peer partnerships*
- d) Insufficient differentiation of various sub-types of infrastructure → *prefer highly experienced managers and a concentrated strategy*
- e) Mismatched demand and supply motivations for infra assets → *be the marginal purchaser of greenfield, higher-risk, and 'partnership' assets; deploy sovereign advantage*
- f) Mispricing: low-risk assets with lower 'headline' returns not favoured → *prefer core assets*
- g) Infra offers a large matrix of risk characteristics, all often borne by the same party (i.e. government) → *prefer public partnerships, strategic stakes, non-competitive processes*

2. Diversification

- a) Infrastructure assets provide inflation protection (from contracts, pricing power, or CPI-linked pricing) → *prefer inflation-proof assets*
- b) Infrastructure not in policy portfolio → *prefer assets that are least equity-like*

Sources of risk

And implications for SWF strategy

- **Standard portfolio risks:** duration and illiquidity, agency risks.
- **Acquisition risks** – transition management, overstaffing and unionised labour
- **Demand or patronage risks** – Toll roads and airports vulnerable to economic cycle through reduced patronage. A long term investor should be comfortable holding an established asset through a cycle; structural changes in patronage have altogether different effects.
- **Regulatory and political risks** – Infrastructure assets usually regulated by governments. Pricing and competition changes also change underlying investment assumptions. Applicable in both EMs and DMs.
- **Refinancing risk** – Stable cash flows make infra suited to supporting higher leverage. Over-levered assets extremely vulnerable to credit market gyrations → *focus on unlevered returns.*
- **Illiquidity risk** – A relatively new asset class for the institutional investor; most investments held by primary purchaser; limited data on exits.
- **Greenfield risks.** Development, construction ,ramp-up, and forecasting risk.
- **ESG risks** (next slide)

Investing responsibly

Of special relevance for SWF investment in infrastructure

- Infrastructure is different from other assets (for ESG purposes) because:
 - Large asset footprint implying significant impact on local community
 - Provision of essential service → reputational loss from failure to provide
 - Extra scrutiny of owners and managers from public and regulators in a monopoly environment
- **Environmental risks**
 - Ecosystem impact from asset footprint (including noise, traffic)
 - Climate change impact and resilience to severe weather
 - Waste, pollution, recycling; impact of spills, accidents and equipment failure
- **Social risks**
 - Safety of labour and end-users; managing relationships with labour (and unions)
 - Land management
- **Governance risks**
 - Bribery and corruption
 - Management incentives for long-term returns; alignment of owners, managers, government
 - Accountability, transparency and accounting compliance
 - Regulatory overlay

Managing communications

Associated with investing responsibility, and delivering essential service

- Private participation in infrastructure finance, construction and service delivery remains novel in many jurisdictions
- The concept of ‘pay for use’ may be received with suspicion, especially if service delivery does not match perceived value for money.
- For brownfield assets especially, it is difficult to imagine paying for use of infrastructure which has been previously free
- These issues make proper communications on the roles of all parties, the risks borne by each, change management, etc. essential.
- Again, there is little substitute for transparency, proper governance, and regulatory clarity.

Analysing infrastructure

- Empirical analysis difficult given few listed indices, poor benchmark representation, only one (and perhaps two) market cycles in available data, → estimates are likely to be imprecise
- High frequency data is *less* useful as we can only answer if high frequency returns are correlated with market factors. Infrastructure investments are long-term holdings.

NZSF analysis

- We estimate unlevered infra asset betas to be around 0.35
- Weak evidence that market beta has increased over time
- See evidence for a size (-ve) and value (+ve) bias
- Inflation and duration not significant
 - would only expect this in very long time series data
 - stronger results when universe narrowed to core infrastructure
- Lower volatility observed in infrastructure c.f. global equities

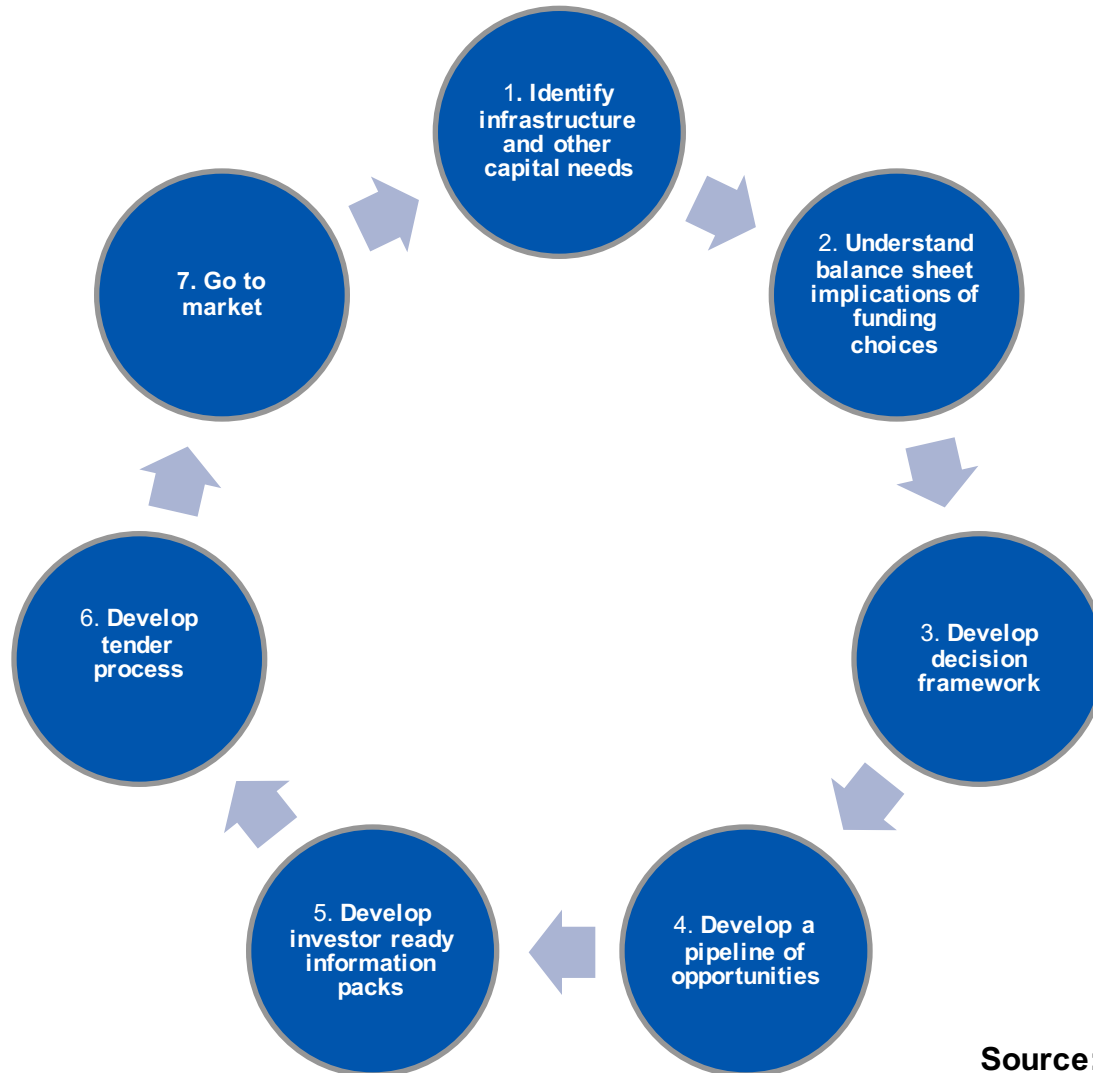
9. Illustrative asset risk assessment

Asset type	Relative risk	Unlevered asset β	Potential for operational improvements
<i>Equity market</i>	<i>High</i>	<i>0.7</i>	..
Social PPPs, PFI concessions	Low	0.2	Very limited
Toll road	Low	0.2	Very limited
Water plant	Low-Medium	0.3	Limited
Airport - single till	Low-Medium	0.3	Limited
Regulated assets	Low-Medium	0.3	Limited
Power - with take or pay contract	Low-Medium	0.3	Limited
Pipelines	Low-Medium	0.3	Limited
Airport - dual till	Medium	0.5	Yes
Rail	Medium	0.5	Yes
Ports	Medium	0.5	Yes
Communications networks	Medium-High	0.6	Yes
Power - merchant plant	High	0.7	Yes
Telecom provider	High	0.7	Yes
Average	Medium	0.3 - 0.4	Modest

Accessing infrastructure

- **Passive listed equity exposure**
 - Few listed, liquid, infrastructure assets and uncompetitive management fees
- **Active listed infra funds**
 - Expensive, unproven, idiosyncratic definitions and targeting of ‘infrastructure’
- **Unlisted infra funds**
 - Mostly focussed on brownfield infrastructure in the major OECD economies; close-ended, ten-year PE-style governance and fee structures
 - Fund horizon mismatch with asset horizon; focus on medium-term exit rather than long-term value; assets must be sold to earn performance fees; incentives to increase leverage to increase performance fees; poor governance
 - Open-ended funds do not solve the problem; governance issues can be worse
 - Cash-yield funds blunt incentive to transact at right time and to invest in maintenance
- **ETFs**
 - Limited availability; can be expensive relative to equity ETFs
- **Segregated accounts**
 - Better alignment, more intensive relationship management
- **Direct investing**
 - Intensive staff capacity and capability required, but best alignment

Working with government: funding decision cycle



Source: NZIER

Working with government

- Traditional infrastructure finance through government's own balance sheet. New understanding that governments do not *necessarily* need to build, own, operate; all that's relevant is service provision.
- Outright purchase of strategic assets by foreign SWFs has proved problematic
 - Santiago principles are best counter-argument
 - Transparency and accountability
 - Strong governance and commercial decisions
 - Repeated games and mutual trust
- New funding models – e.g. PPPs – can have their own problems.
 - Inappropriate/unsustainable risk and cost sharing
 - Viability finance
- Governments increasingly taking non-financial considerations must be taken into account: economic and social and environmental costs and benefits inform the whole-of-life assessment
- These non-financial considerations can include: standing of investor/buyer, quality of product, health and safety practices, training and development opportunities

Non-competitive processes for long-term investors

- Contested tenders work best in competitive markets. Characterised by homogeneity of goods/assets, and complete and symmetric information.
- Competitive process can result in investors shading down their expectations (lower confidence) and requiring a higher uncertainty (as opposed to risk) premium.
 - For example, if the infrastructure asset is homogenous and non-rival (e.g. mobile phone spectrum) then the uncertainty risk premium able to be achieved is narrow.
- One solution for governments therefore to offer more and better quality information.
- A non-competitive tender creates more opportunities for vendor and investor to reveal information to mutual benefit
- There is also more incentive for both participants to reveal information if there is a long-term strategic partnership. Repeated game scenario offers very different cumulative incentives relative to a one-off game.
 - Meaningful fee savings on due diligence
 - Stronger alignment of interests
 - Efficient processing of strategic and tactical opportunities
 - Broader diversification from considering a menu of current and future opportunities
 - Extensive interaction with senior decision makers – training and development etc

NZSF infrastructure portfolio

- NZ\$1.05bn (3.5% of the Fund) currently invested in infrastructure
- Largest individual exposures to Z Energy (\$410m, domestic petroleum retail) and ConnectEast (\$234m, Australian toll roads)
- Geographically, largest exposures in Australia and New Zealand.
- Other exposures:
 - Listed airports ~\$200m
 - Listed energy positions ~\$70m
 - Balance as Fund exposures
- Combination of access points used
 - Investment Management Agreements (segregated accounts) primary method
 - Traditional Fund (GP / LP relationships)
 - Some direct stakes
- Challenges going forward are:
 - Have we got too much (or too little)
 - Have we got the right mix of investments
 - How do we access as effectively as possible

The Infrastructure Blueprint

Source: World Economic Forum

<i>Jurisdictions that exhibit following particularly attractive to SWFs...</i>	
Strategic Vision	<p>A.1 Integrated infrastructure pipeline</p> <ul style="list-style-type: none"> Long-term vision with matching and pre-defined pipeline of projects → better project prioritisation by vendor; higher quality bids from investors → long-term multi-project repeated games, founded on trust and mutual benefit, better alignment of interest Regular project stream encourages investors to build local expertise & capacity; provides scale economies on diligence
	<p>A.2 Clear and viable role for investors</p> <ul style="list-style-type: none"> Identify projects that benefit from private sector finance and are politically feasible; separate sources of risk and ensure private sector is called on to shoulder the most relevant ones for cost efficiency and project sustainability
	<p>A.3 Communications strategy</p> <ul style="list-style-type: none"> Comprehensive public disclosure of costs and benefits for each project to all parties: government, investors, and public Explicitly separate ownership from control
Policy and Regulation	<p>B.1 Limit re-negotiation risk</p> <ul style="list-style-type: none"> Are investors protected from regulatory and administrative risk? → more competitive bids
	<p>B.2 Standardised procurement process</p> <ul style="list-style-type: none"> Standardise bidding, award, and documentation across projects → reduced diligence, greater investor interest
	<p>B.3 Predictable project approvals process</p> <ul style="list-style-type: none"> Clear project roadmap detailing environmental & other approvals; commercial agency for tenders and permitting
	<p>B.4 Tax policy</p> <ul style="list-style-type: none"> Bias-free across investor base and stable over time
Value proposition	<p>C.1 Assess financial returns for investors</p> <ul style="list-style-type: none"> Provide consistent and market-oriented risk-return forecasts and benchmarks
	<p>C.2 Risk allocation</p> <ul style="list-style-type: none"> Framework to divide and allocate all project risks between government and investors; allocation of financing and demand risk of particular importance
	<p>C.3 Market sounding</p> <ul style="list-style-type: none"> Gauge interest & collect feedback on past/future projects; investor preferences should be always acknowledged