Investing in U.S. Infrastructure for Maximum Dividends

2261 Rayburn House Office Building
“There are costs and risks to a program of action, but they are far less than the long range risks and costs of comfortable inaction.”

— John F. Kennedy

The cost of underinvestment in resilient infrastructure in U.S is massive
240,000 water main breaks

$18-$38 B Outage Losses

$5.5 B hrs Traffic- $120 b fuel

$27 B extra freight costs
$137,50 billion
Investment on the 50 projects!!


Graphs: Number of projects by category
Distribution of Project Typology by State
Distribution of Investment by State
Bankable pipeline of well-prepared resilient infrastructure projects

- Resilient to changes in weather patterns due to climate change
- Resilient to cybersecurity attacks
- Resilient to government budgetary changes

*Infrastructure bottlenecks arise in when spending is tied to annual budgets*
INFRASTRUCTURE LIFECYCLE
When is Bankability Determined?

Planning and Identification
- From Problems to Projects
- Master Planning
- Project Prioritization

Cost Benefit Analysis

Project Preparation Process
- Stakeholder Consultation
- Pre-Feasibility and Feasibility studies
- Analysis of procurement options (PPP vs. Traditional procurement) - VFM Tools

Factor - in Externalities

Promotion and Financial Closing
- Bundled/ Unbundled
- Parametric Investment Analysis
- Capital Stucture, Type of instruments

The Moment of Truth
Financiers Investment Parameters

- Resilient
- Low Carbon
- Inclusive
- Energy Efficient
- Water Resources Efficient

ROI
Return on Investment
- Initial CAPEX
- Projected Revenue (Cashflows)
- Projected OPEX

DSCR
Debt Service Coverage Ratio
- Interest Rate
- IR Risk premium
- Capital structure
  -> (%Debt vs. % Equity)
Project Finance
Discounted Cashflows

Financial Analysis
NPV  IRR

Decision rules
Accept projects with a positive NPV
Reject projects with a negative NPV
Two mutually exclusive projects: accept higher positive NPV

is the discount rate that makes the NPV of a project equal to zero

Different project size: the smaller projects may have higher IRR but their contribution to the firm value may be smaller compared to the larger projects
Differen timing of cash flows

Problems
Multiple IRR or No IRR
When CFA pattern is unconventional

IRR method: project cash flows are assumed to reinvest at IRR while with NPV it is assumed to reinvest at market rate

Accept projects with an IRR > the firm's (investor's) required rate of return.
Reject projects with an IRR < the firm's (investor's) required rate of return.

For single project, IRR and NPV lead to exactly the same decision

NPV = \sum_{t=0}^{N} \frac{CF_t}{(1+r)^t}
where:
- \(CF_t\) = the expected net cash flow at time \(t\)
- \(N\) = the estimated life of the investment
- \(r\) = the discount rate (opportunity cost of capital)

Money Weighted
More appropriate if manager has complete control over cash in/out
measures compound growth
Not affected by cash in/out
Preferred method
Value the investment immediately after any withdrawals or deposits, divide the overall investment horizon into subperiods
3 steps
- Calculate HPR for each subperiod
- Compute the geometric mean
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**Construction and Monitoring**
- Solid Track Record
- Social and Environmental Impact Assessment
- Creation of Benchmarks
Green Finance
- Green Bonds
- Green Asset Backed Securities
- Preferential sector lending (Green loans)
- Blended Finance
- Credit Guarantees linked to sustainability metrics

Policy and Regulation
- Carbon Tax
- Revise Fossil Fuel Subsidies and Water Policies
- Strong PPP laws and PPP units
- Tax breaks for Clean Energy Independent Power Producers (IPP)
- Power Purchase Agreements (PPAs) linked to sustainability metrics.

Bankable INFRA

Sustainable Public Procurement
- Whole asset life cycle Analysis
- Performance Based Specifications (include environmental metrics i.e energy efficiency, water usage etc...)
- Optimal risk distribution in PPPs contracts.
- Multi Year Budgeting Framework
- Impact Quantification
Good Examples
Energy Efficiency Financing

Property Assessed Clean Energy (Pace) financing

Property Owner
- No/Low up-front costs
- Competitive-interest assessment
- Additional savings from tax-deductible interest

City or Local Government
- Creates tax assessment district
- Issues Bonds

Up-front money for total installation cost of EE/RE

Additional Property tax Payments
Our Infrastructure experience
Thank You!

Mariana Hug Silva
msilva@nathaninc.com
@marianahugsilva