Real estate and infrastructure investments by Norwegian GPFG

Comments by

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December 17, 2015

GPFG already holds real estate and listed infrastructure

The global market portfolio

- 6% real estate, of which 10% listed
- 3% infrastructure, of which 90% listed

The GPFG portfolio

- 60% listed equities
  - Include listed real estate (REITs) and listed infrastructure
- 3% unlisted real estate, building up to 5%

Finance theory implies that market-value weights are optimal

- Current portfolio weights are close to global market portfolio

Thus, increasing the mandate is an overallocation

Empirical evidence on real estate (RE), continued

Does adding RE raise risk-adjusted expected returns? No

- REITs do *not* outperform a portfolio of stocks and bonds
  - Zero excess returns (alpha) in two- and five-factor models

Does adding RE bring diversification benefits? Not really

- Correlations between RE and stock/bond returns have risen substantially over the past decade
- In fact, RE returns look like small value stock returns
  - Small value stocks provide similar diversification as RE

Is real estate a good buy right now? No

- Commercial RE has historically high valuations
  - Both in absolute terms and relative to net operating income
- In particular the trophy assets that GPFG invests in

Empirical evidence on real estate (RE) from the report

Does unlisted RE outperform listed RE? No

- On the contrary, REITs tend to generate higher returns than direct investments in RE
  - No evidence of an illiquidity premium in private RE

Is unlisted RE less risky than listed RE? No

- The total volatility of unlisted RE is similar to that of REITs

Do large pension funds outperform small pension funds? No

- The evidence is too scarce and anecdotal to draw any robust conclusions

Overall, no support for further expansion into real estate

- Neither direct investments nor listed RE

Empirical evidence on infrastructure (INFRA) returns

Is there good infrastructure return data? No

- Short return series for listed INFRA (max 16 years)
- No reliable evidence on unlisted INFRA

Does listed INFRA outperform stocks and bonds? No

- The longer INFRA indexes have zero abnormal returns
- Some evidence that Core INFRA performs *better*
  - Positive alpha over the past 12 years
- Some evidence that Clean Energy performs *worse*
  - Negative alpha over the past 8 years

Does INFRA provide diversification benefits? No

- Listed INFRA is highly correlated with stocks, RE and bonds

Overall, no strong support for expanding into INFRA

The RE recommendations are contradicting and lack support

[1] **Include unlisted RE in the mandate**

- But there is no evidence that unlisted RE dominates REITs [1]

[8] **Increase maximum RE mandate to 10%**

- Yet, report warns that elevated valuations warrant caution for new investments in real estate [3]

[13] **Explore RE investments in developing countries**

- No evidence on RE in developing countries
- Also, expected growth $\neq$ abnormal returns

[14] **Continue to build up the internal RE team**

- Yet, the report concludes that rising correlations with stocks and bonds do not support further expansion into RE [2]

The INFRA recommendations lack support in the data

[8] **Mandate for maximum 10% in INFRA**

- But there is no reliable evidence that INFRA outperforms stocks/bonds [4]

[11] **Open up for unlisted Clean Energy investments**

- But Clean Energy has underperformed stocks/bonds ($\alpha < 0$)
- Again, expected growth $\neq$ abnormal returns

[12] **Open up for unlisted emerging-market INFRA**

- Emerging market INFRA index has zero alpha.
- Also, there is no evidence in support of unlisted INFRA

[14] **Start build a team for INFRA investments**

- Again, why overweight in INFRA without supporting evidence?

The experts disagree on the mandate for unlisted INFRA

[5] **Open up mandate to include unlisted INFRA**

- But there is *no* reliable evidence on unlisted INFRA
  - Unlisted INFRA could have huge costs (more later)

[15-i] **Do INFRA investments primarily in *listed* projects**

- The two academics recommend the 90% listed INFRA

[15-ii] **Do INFRA investments primarily in *unlisted* projects**

- The professional wants GPFG to enter unchartered territory

Investment mandate should be based on empirical evidence

- Not because "other large funds do so"
- Or because someone looked in a crystal ball

What matters is risk-adjusted expected returns after costs

Direct investments in RE and INFRA carry substantial costs

- Require large, costly organization that is difficult to reverse
- Have higher transaction costs and are less liquid
- Subject to huge political risks (corruption, accidents, etc.)

No market for lending unlisted assets

- Major source of GPFG's reported excess returns

Difficult to evaluate performance of unlisted assets

- Unlisted assets have stale prices
- Appraisals are often biased

Accounting for costs reduces the case for unlisted assets

Performance evaluation: the Opportunity Cost (OC) model

The OC model is a classical asset-pricing two-factor model

- Requires a listed match (e.g. a REIT) for the private asset
- The expected return from a reference portfolio of stocks and bonds with the same systematic risk

The proposed OC model also has issues

- No Fama-French risk-factors
  - Rewards RE for its tilt to small value stocks
- Ex-post performance evaluation still relies on price estimates
  - How many years to judge a "long-term" investment?
- Conflict of interest in selecting a listed match
  - Must be done by someone outside the investment team

OC model does not resolve the issues with RE and INFRA

Concluding remarks: let's take a step back

Passive management is the gold standard

- Massive evidence that passive management generates higher returns *net of costs* than active management

An increase in the RE and INFRA mandates is also an increase in active management

- Reason to be concerned

Highlights the need for an independent and objective performance evaluation of GPFG

- You don't let students set their own grades

Time to seriously consider establishing an NBIM Watch!