Alternative Investments

Real Estate and Infrastructure

Exam Focus

- Features and characteristics of real estate
- Investment characteristics of real estate investments
- Features and characteristics of infrastructure
- Investment characteristics of infrastructure investments

Residential and Commercial Real Estate

Residential real estate: estimated to be > 75% of global real estate values

- **Ownership:** owner-occupied, single/family residential property
- **Source of equity and debt:** via the owners and residential mortgages
- **Source of return:** enjoyment of the property and potential price appreciation

Commercial real estate

- **Types:** office, retail, industrial, warehouse, hospitality, and residential rentals
- **Source of equity and debt:** via owners and investors
- **Source of return:** income from the property and potential price appreciation

Real Estate Is Uniquely Different

Real estate is different from other asset classes in many ways

- The **initial investment** is usually large
- Each property is unique; no two properties are identical (i.e., **heterogenous**)
  - Location, age, condition, space, tenant credit mix, lease term, demographics
- Many ways to invest in real estate (i.e., **directly** or **indirectly** via funds or MBS)
- **Diversification** may be difficult; local supply and demand conditions

Price discovery is opaque in private markets

- **Historical prices** may not reflect current market supply and demand conditions

Real Estate: Question

The largest sector of the real estate market is:

A. residential real estate.

B. real estate investment trusts.

C. publicly traded mortgage-backed securities.

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Source: CFA Institute. Used with permission.

Real Estate Investment Structures

Private forms of real estate investment

- **Debt:** mortgage debt, construction loans, mezzanine debt
- **Direct equity ownership:** sole ownership, joint ventures, limited partnerships
- **Indirect ownership:** real estate funds, private REITs

Public forms of real estate investment

- **Debt:** mortgage-backed securities (MBSs), commercial MBSs (CMBSs)/collateralized mortgage obligations (CMOs), covered bonds, mortgage REITs, mortgage ETFs
- **Publicly traded shares:** construction, operating, development, real estate investment trusts (REITs), mutual funds, UCITS, exchange-traded funds (ETFs)

Direct Real Estate Investment

Advantages for direct investors

- **Control:** over property selection, when to buy/sell, tenant mix, lease terms
- **Tax benefits:** tax-deductible expenses and noncash property depreciation
- **Diversification:** low historic correlations with other asset classes

Disadvantages for direct investors

- **Specialist knowledge needed:** local market knowledge and characteristics
- **Significant capital required:** large initial outlays and high transaction costs
- **Concentration risk:** not possible for smaller investors to be well diversified
- **Lack of liquidity:** difficult to buy or sell quickly

Indirect Real Estate Investment

Indirect investment in real estate pools capital from investors to acquire properties through various investment vehicles.

Investment vehicles: include limited partnerships, mutual funds, REITs, and ETFs

- **Joint ventures:** pooling capital, development expertise, entrepreneurial talent
- **Tax-advantaged trusts:** three forms of REITs
  - *Equity REITs* invest in properties outright
  - *Mortgage REITs* underwrite mortgages
  - *Hybrid REITs* invest in both properties and mortgages

Real Estate Investment Trusts (REITs)

REITs are the **preferred investment vehicle** for owning income-producing real estate:

- Infinite life, open-end funds
- **No corporate taxation** within the REIT if requirements are met
- Requirement to distribute 90%–100% of taxable net income as dividends
- Investors pay taxes at their personal rates

Other advantages of REITs

- Publicly traded, liquid, and lower transaction costs
- But . . . a higher correlation with equity markets than direct investments

Real Estate: Question

The preferred investment vehicles for public investors to own income-producing real estate are:

A. real estate funds.

B. mortgage-backed securities.

C. real estate investment trusts.

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Real Estate Strategies

Core real estate strategy returns are **primarily from income** from properties

- Well-leased, high-quality commercial and residential real estate

Core-plus/value-add real estate strategies need **redevelopment** or **upgrades**

- *Core-plus* requires modest work; *value-add* requires larger redevelopment

Opportunistic real estate strategies are **major redevelopments**

- Major developments, taking on large vacancies, speculating on market conditions

Real Estate Investment Characteristics

Investments in real estate have returns from **income** and **price appreciation**

- Multiple-year lease income is predictable, stable, and adjusted for inflation
- Low correlations with other asset classes

Real estate returns

- **Senior debt:** first mortgages, investment-grade CMBS, low risk, low returns
- **Core:** stable income-producing properties, REITs, bond-like returns
- **Core-plus:** minor speculative sources of price appreciation; bond-like
- **Value-add:** larger speculative sources of price appreciation; equity-like
- **Opportunistic:** property development, cost overruns, regulatory risks, illiquid

Real Estate: Question

Which of the following entails the *least* risk?

A. Value-add real estate.

B. Investment-grade commercial mortgage-backed securities.

C. Residential real estate with long-term leases and many lessors.

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Volatility of Real Estate Income

Real estate investments: generate **bond-like cash flows** from lease income

The **volatility of cash flows** is reduced:

- The longer the lease
- Better credit quality of the tenants and the possibility of rent increases

Income and the potential for price appreciation

- Over half of real estate return is typically income; the rest is price appreciation
- Likened to a **convertible bond**

Real Estate: Question

In what ways are real estate investments similar to bond investments?

In what ways are real estate investments similar to equity investments?

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Source: CFA Institute. Used with permission.

Diversification Benefits

The consensus view is that real estate offers diversification benefits to portfolios:

- Direct real estate is **appraised infrequently**, so correlations appear artificially low
- Listed real estate is affected by **market sentiment** (e.g., 2007–2008 financial crisis)

Real estate markets are highly idiosyncratic

- Real estate often has **low correlations** with traditional asset classes such as equities, fixed income, and commodities
- Real estate **does enhance** the risk-return characteristics of a multi-asset portfolio

Infrastructure and Society

Infrastructure has a purpose in society

- Public transportation
- Utilities: gas, water, electricity
- Telecommunications and wireless networks
- Sewage treatment plants and health care facilities
- Airports, hospitals, prisons

Ownership

- Early private investments, waves of privatizations, mix of **private** and **public**

Infrastructure Investment Features

Features of infrastructure investments

- Real, **capital-intensive**, long-lived assets
- Unique, illiquid assets with distinct locations, features, and uses
- Infrastructure **strategic partners** with specialized operational or technical skills

Infrastructure contractual payments

- **Availability payments:** payments received to make the facility available
- **Usage-based payments:** tolls and fees for using the facilities
- **Take-or-pay arrangements:** obligate buyers to pay an agreed price and volume

Infrastructure: Question

Infrastructure cash flows primarily arise from:

A. dividends.

B. commercial tenants.

C. contractual payments.

-1

Infrastructure Ownership

Many types of infrastructure are financed, owned, and operated by governments:

- Governments seek **alternative sources of funding**
- Governments seek investors experienced in **building**, **managing**, and **operating** infrastructure projects

A public-private partnership is a long-term contractual relationship between the public and private sectors to deliver an infrastructure project or service:

- The newly constructed infrastructure may be **leased back** to the government
- The newly constructed infrastructure may be **sold** to the government
- **Hold** and **operate** the assets until operational maturity or longer

Economic Infrastructure

Economic infrastructure investments

- **Transportation assets**
  - Roads, bridges, airports, seaports, railways
  - *Income is linked to demand, so has market risk*
- **Information and communication technology assets**
  - Telecommunications towers, data centers
- **Utility and energy assets**
  - Electrical grid, power generation, oil and gas infrastructure, waste treatment
  - Renewable technologies: solar, wind, and waste-to-energy power generation
  - *Income is driven by demand, which fluctuates*

Social Infrastructure

Social infrastructure investments relate to human activities:

- Education, health care, social housing, correctional facilities, govt. buildings
- **Investor focus:** providing, operating, and maintaining asset infrastructure
- **Public services:** administered by the public authority or a private provider

Income from social infrastructure

- A **lease payment** to make the facility available
- Contingent on **managing** and **maintaining** the asset to predefined standards

Infrastructure: Question

Most infrastructure assets are financed, owned, and operated by:

A. governments.

B. public–private partnerships.

C. development finance institutions.

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Stages of Infrastructure Development

Greenfield investments: investments in developing **new infrastructure** assets

- Intent may be to **lease back**, **sell**, or **hold** and **operate** the new assets
- These are opportunistic investments (i.e., higher risk and higher reward)
- Greenfield investors, strategic investors, and developers

Build-operate-transfer (BOT) life cycle

- Common in **public-private partnerships**
- *Build phase* has a long approval and construction phase with negative cash flows
- *Operate phase* is governed by a concession agreement detailing pre-agreed terms
- *Transfer phase:* investment is transferred to a government entity/third party

Stages of Infrastructure Development

Brownfield investments: expand **existing infrastructure**, which has an existing operating history

- May involve privatization of public assets
- Shorter investment period, with immediate cash flows
- Existing financial and operating history

Secondary-stage investments: invest in infrastructure facilities that **do not require** further investment or development over the investment horizon

- Assets generate **immediate cash flow** and returns
- Some assets never reach this stage, as they need further capital and development

Forms of Infrastructure Investment

Direct investment in the underlying infrastructure

- Most investors focus on equity investments, with a **group** or **consortium**
- Provides **control** over the large investment made
- Specific role in **building**, **operating**, or **managing** the assets
- Strategic partners include pension funds and sovereign wealth funds
- Long-term investment horizon

Example: In March 2021, the Canada Pension Plan Investment Board paid CAD 270 million for a 45% stake in a water sewage company in Brazil, operating 18 concessions across 5 Brazilian states. The company serves > 6 million people.

Forms of Infrastructure Investment

Indirect investments into infrastructure funds

- **Open-end** or **closed-end** funds
- Infrastructure ETFs
- Equity investments in publicly traded infrastructure providers
- **Master limited partnerships** are listed and avoid double taxation for investors

Debt financing of infrastructure projects

- Private and publicly traded debt
- Flexible terms to accommodate long development periods with zero cash flows
- **Example:** Airport Authority of Hong Kong perpetual bonds

Infrastructure: Question

Which of the following is a characteristic of direct investment in infrastructure?

A. High liquidity.

B. Concentration risk.

C. Short-term horizon.

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Infrastructure Investment Characteristics

Infrastructure risk and return

- **Operational secondary stage:** hospitals, existing toll roads
  - Have existing track records of steady bond-like cash flows
- **Brownfield:** regulated power infrastructure, ports
  - Redeveloping existing infrastructure is incrementally riskier
- **Greenfield:** demand-based airport expansion, new toll roads, renewable energy
  - New development projects are the riskiest infrastructure projects

Basic social services and *regulated industries* have less risk and lower returns. *Demand-based projects* based on future economic growth are riskier.

Infrastructure Benefits, Returns, and Risks

Benefits to the economy

- Infrastructure investments are needed to support **economic**, **social**, and **societal** growth within an economy
- Considerable economic benefits over **multigenerational** time horizons

Returns and diversification

- Direct, less liquid equity investments have highest return; inflation protection
- The **inelastic demand** for public services creates a **lower correlation** to public equities and less exposure to broader economy
- Lower default rates and higher recovery rates than fixed income

Infrastructure: Question

Which of the following has the highest weighting to capital appreciation?

A. Greenfield assets with limited construction and demand risk.

B. Fully constructed brownfield assets with contracted revenues.

C. Greenfield assets without guarantees of demand upon completion.

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Infrastructure: Question

Which of the following is true regarding infrastructure investments?

A. Infrastructure investments typically generate volatile cash returns.

B. Infrastructure investments typically support services that face inelastic demand and/or benefit from high barriers to entry.

C. While public infrastructure returns have low correlation with market returns, private infrastructure returns have high correlation with market returns.

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Solutions

Real Estate: Question

The largest sector of the real estate market is:

A. residential real estate.

B. real estate investment trusts.

C. publicly traded mortgage-backed securities.

Residential real estate is by far the largest market sector by value and size. Savills World Research estimated in July 2018 that residential real estate accounted for more than 75% of global real estate values.

Real Estate: Question

The preferred investment vehicles for public investors to own income-producing real estate are:

A. real estate funds.

B. mortgage-backed securities.

C. real estate investment trusts.

Real estate investment trusts (REITs) are the preferred investment vehicles for owning income-producing real estate for both private and public investors.

Real Estate: Question

Which of the following entails the *least* risk?

A. Value-add real estate.

B. Investment-grade commercial mortgage-backed securities.

C. Residential real estate with long-term leases and many lessors.

Of these three, investment-grade commercial mortgage-backed securities (CMBSs) entail the least risk, and value-add real estate investments entail the most.

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Real Estate: Question

In what ways are real estate investments similar to bond investments?

Real estate investments can be similar to bond investments in that they are stable, predictable, lower-risk cash flows from leases that are similar to bond coupon payments

In what ways are real estate investments similar to equity investments?

Real estate investments can be similar to equity investments in that they are speculative returns that can be realized from price appreciation of the real estate asset.

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Infrastructure: Question

Infrastructure cash flows primarily arise from:

A. dividends.

B. commercial tenants.

C. contractual payments.

Rather than leases or rentals from commercial or residential tenants, infrastructure cash flows arise from contractual payments, such as availability payments (payments are received to make the facility available), usage-based payments (e.g., tolls and fees for using the facilities), and take-or-pay" arrangements (which obligate buyers to pay a minimum purchase price to sellers for a pre-agreed volume).

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Infrastructure: Question

Most infrastructure assets are financed, owned, and operated by:

A. governments.

B. public–private partnerships.

C. development finance institutions.

Most infrastructure assets are financed, owned, and operated by governments, and a substantive proportion of these investments comes from public sources in the developing world. However, increasingly, infrastructure is being financed privately through public-private partnerships by local, regional, and national governments. Infrastructure investments are also made in partnership with development finance institutions, which are specialized financial intermediaries that provide risk capital for economic development projects on a noncommercial basis.

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Infrastructure: Question

Which of the following is a characteristic of direct investment in infrastructure?

A. High liquidity.

B. Concentration risk.

C. Short-term horizon.

Direct investment in infrastructure requires a large investment and results in both concentration and liquidity risks while the assets are managed and operated. Because of these risks and the typical long-term horizon, direct infrastructure investment usually takes place with a group or consortium of strategic investors that share the financial risk and/or assume a specific role in building, operating, or managing the assets.

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Infrastructure: Question

Which of the following has the highest weighting to capital appreciation?

A. Greenfield assets with limited construction and demand risk.

B. Fully constructed brownfield assets with contracted revenues.

C. Greenfield assets without guarantees of demand upon completion.

Greenfield projects without guarantees of demand upon completion (e.g., variable electricity prices, uncertain traffic on roads and through ports) have a high weighting to capital appreciation. Greenfield assets with limited construction and demand risk have a mix of yield and capital appreciation. Brownfield assets with mitigated risks (e.g., fully constructed with contracted/regulated revenues) that are located in the most stable OECD countries have a high weighting to current yield.

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Infrastructure: Question

Which of the following is true regarding infrastructure investments?

A. Infrastructure investments typically generate volatile cash returns.

B. Infrastructure investments typically support services that face inelastic demand and/or benefit from high barriers to entry.

C. While public infrastructure returns have low correlation with market returns, private infrastructure returns have high correlation with market returns.

Because infrastructure investments typically support services that face inelastic demand and/or benefit from high barriers to entry, generate steady cash returns, and have a longer life cycle, equity investments in infrastructure offer lower correlation to public market equities and the broader economy. It is notable that public and private infrastructure returns exhibit low correlations.

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