

# Representation of Illiquid Asset Exposures in the Liquid Markets

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Northfield Online Workshop

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# Welcome and thank you for attending!!

- March 2021 Northfield Quarterly Newsletter
  - Available at <https://www.northinfo.com/Documents/990.pdf>
  - Contact Northfield to subscribe
- Theory reference materials:
  - “Factor Based Asset Allocation and Illiquid Investments” By Dan diBartolomeo, available at <https://www.northinfo.com/documents/543.pdf>.
  - “Optimal Deal Flow Management for Direct Real Estate Investments” By Emilian Belev and Rick Gold, available at <https://www.northinfo.com/docs/optimaldeal.pdf>.
  - “Asset Allocation Dislocation: Extent, Impact, Solutions” By Emilian Belev, available at <https://www.northinfo.com/documents/942.pdf>.

# Format On-Line Workshop

- Combination of:
  - Slides to setup the background for the example
  - Demonstration within Nexus to illustrate how to implement this strategy
- Caveat:
  - This exercise is for illustrative purposes using a simple factor exposure example.
  - In these types of strategist, there are some nuances in creating the correct buy list and ensuring cash flow matching to accurately replicate the illiquid asset.
  - If anyone would like to implement any of these strategies, please contact Northfield to discuss.

# Why represent an illiquid asset?

Some scenarios in which an investors would want to create a representation of all or part of an illiquid asset:

- Investor decides buy or sell a building, but the closing process is relatively long. The investor wants to implement the investment decision prior the transaction being completed.
  - Create a synthetic replication of the building to include in the portfolio during the transition of buying or selling.
- Owner of a real estate investment may want to hedge part of the investment which they believe will be riskier or under perform.
  - Buildings can only be bought or sold completely.
  - By decomposing the building into Northfield model factors, any unwanted exposures can be hedge.

# Northfield Model

- Northfield Multi-Asset Class Risk model, Everything Everywhere (EE)
  - Includes liquid assets such as stocks, bonds, derivatives, funds, currencies, commodities, etc.
  - EE integrates illiquid assets such as real estate, infrastructure, private debt and private equity.
    - <https://www.northinfo.com/resources-asset-mgr.php#>.
- Real Estate Exposures
  - Northfield models real estate from the bottom up, using information specific to the particular investment
  - EE factor exposures are determined using a bottom-up analysis.
- Allows for the comparison of liquid assets and illiquid assets.

# Bottom-Up Modeling for Real Estate

For each property:

- **NOT** appraisal-based
- Risks related to cash flow assumptions for existing and expected leases
  - Uses lease structure, renewal, credit quality of tenants, vacancy dynamics, revenue and expense schedules
- Risks associated with the mortgage financing (if property is levered)
  - Takes into consideration floating rate, fixed rate, interest-only, balloon clauses, and prepayment behavior
- Risks of future fluctuations in rents
  - Takes into consideration the combined impact of lease rollover, vacancy, renewal, and market volatility of rents
- Each component has risk exposures to common risk factors plus idiosyncratic risks

# Example Property

- Hypothetical office building located in NYC
  - Anchor tenant is in the Consumer Services sector
  - Outstanding long-term mortgage
- Basic intuitive observations about the office building impact the factor exposures:
  - Regional exposure is English Speaking Countries since it is in NYC
  - NYC economy is finance driven, there will be exposure to the Interest Rate Sensitive Sector
  - Anchor tenant is exposed to the Consumer Sector
  - Outstanding mortgage provides exposures to the yield curve
  - Rental income and credit worthiness of tenants will influence sector, fundamental, economic and yield curve factors.

# Buy List of Liquid Assets

- A buy list of liquid assets should fit the objective and fundamental characteristics of the asset.
- Assets fitting the objective in the example includes:
  - Commercial and Government Mortgages securities that similar are to the safe long term debt funding of the office building.
  - Office, NYC, and ETF REITs to provide some NYC office real estate exposures.
  - Industry iShares ETFs to replicate the US GIC sectors which could represent the local economy and industry in which our tenants operate.
  - Fixed Income iShares ETFs to represent the US yield curve.



# Securities in the Buy List

## Buy Universe

### Commercial and Government Mortgages:

JPMORGAN CHASE COMMERCIAL MORTGAGE SECURITIES CORP; 0.3717%; 6/12/2041  
JPMORGAN CHASE COMMERCIAL MORTGAGE SECURITIES CORP; 7.198%; 1/15/2032  
GMAC COMMERCIAL MORTGAGE SECURITIES INC; 6.175%; 5/15/2033  
FEDERAL NATIONAL MORTGAGE ASSOCIATION; 5.95%; 11/7/2036  
FEDERAL NATIONAL MORTGAGE ASSOCIATION; 0%; 7/20/2040  
FEDERAL HOME LOAN MORTGAGE CORP; 1.98%; 7/27/2050

### REIT:

SLATE OFFICE REIT (OTC)  
ALSTRIA OFFICE REIT(OTC)  
CITY OFFICE REIT  
DREAM OFFICE REIT. (OTC) TST.UNIT 'A'  
NEW YORK CITY REIT A  
ISHARES GLOBAL REIT ETF  
FST.FTSE EPRA NAREIT GL DEV MKT

### Yield Curve ETF:

iShares Trust: iShares 1-3 Year Treasury Bond ETF  
iShares Trust: iShares 3-7 Year Treasury Bond ETF  
iShares Trust: iShares 7-10 Year Treasury Bond ETF  
iShares Trust: iShares 10-20 Year Treasury Bond ETF  
iShares Trust: iShares 20+ Year Treasury Bond ETF

### Industry ETF:

iShares Trust: iShares US Basic Materials ETF  
iShares Trust: iShares US Consumer Goods ETF  
iShares Trust: iShares US Consumer Services ETF  
iShares Trust: iShares US Energy ETF  
iShares Trust: iShares US Financials ETF  
iShares Trust: iShares US Healthcare ETF  
iShares Trust: iShares US Industrials ETF  
iShares Trust: iShares US Real Estate ETF  
iShares Trust: iShares US Technology ETF  
iShares Trust: iShares US Telecommunications ETF  
iShares Trust: iShares US Utilities ETF

# Nexus Demonstration

1. Risk Decomposition of the office building
2. Create a synthetic of the office building using liquid assets from the buy list
3. Hedge Consumer Sector bet using the iShares US Consumer Services ETF
  - Pandemic has a negative impact on Consumer Services

Examples have been pre-processed for speed and convenience

Please email me directly at [mike@northinfo.com](mailto:mike@northinfo.com), if you would like to discuss the topic in more detail or if you have any questions or comments.