

Real Estate Economic Analysis Report by Kuponu Liu



Contents

Introduction	4
I. DiPasquale-Wheaton Four Quadrant Model	5
NE Quadrant: The Market for Space	5
NW Quadrant: Valuation Function	5
SW Quadrant: Construction Sector	5
SE Quadrant: Supply Adjustment	6
II. Shift Share Technique	7
Correlation of Shift Share Components	7
III. Location Quotients	8
LQ Level of Aggregation	8
Economic Base	8
LQ and Shift Share	9
LQ and Industry Employment (Sectors)	9
LQ and Industry Employment (Subsectors)	10
IV. Impact of the Economic Base on House Prices	11
V. Economic Base Multiplier	11
Economic Base Multiplier based on Income	11
Impact of Basic Industries on House Price Appreciation	12
VI. Risk Premium	13
VII. Interest Rates	13
Decomposing the Mortgage Interest Rate	13
Mortgage Risk Premium vs Credit Spread	13

Contents

VIII. Drivers of Commercial Real Estate	15
Commercial Property Returns and Credit Rationing	15
Commercial Property Returns and Flow of Funds into Commercial Real Estate	15
Expected Corporate Profits and Commercial Property Returns based on Appraised Values	15
Expected CRE Market Conditions and Realized Commercial Property Returns	16
IX. Co-Movement of Property Type Returns	17
Single Family Homes vs Commercial Real Estate	17
Hotels vs Commercial Real Estate	18
X. Primary Drivers of Commercial Property	19
Industrial Properties: Manufacturer's Expectations about Capex	19
Office Properties: Growth in Office Employment	19
Retail Properties: Consumer Expectations and Rooftops	20
Hotel Properties: The Role of Consumer and Business Expectations	20
XI. Equity in the Housing Market	22
Appendix	24-25

Introduction

This analyst report provides a high level overview of economic forces that impact the real estate industry. This report will explain how different markets (national economy, capital market and product market) impact the real estate market in different ways and at different times. After reading this report, analysts can use theoretical frameworks to predict real estate trends and investigate real estate investment opportunities.

The first section introduces the concept of the DiPasquale-Wheaton Four Quadrant Model. It explains how the ⁰market for use of space and the market for use of ownership interact and determine stock, rent, price and construction. The second and third sections introduce the concepts of shift share analysis and the location quotient. In this section, readers will learn the underlying reasons as to why and how job growth is distributed in MSAs. It will also analyze which industries are basic and impact the local Miami economy the most. The fourth and fifth sections describe how the distribution of jobs and industries create an economic base in the Miami MSA— affecting this MSA's house prices. The first half of

this analysis focuses on Miami. Given that the US and Cuba are reinstituting diplomatic relations, this makes Miami an interesting investment opportunity since it has strong economic ties with Latin America.

The sixth and seventh sections assess the riskiness of different debt instruments by analyzing their risk premiums and interest rates. The eighth, ninth and tenth sections identify the drivers and lead indicators for different types of properties (ie. Industrial, Office, Hotel, Retail, Commercial and Residential). Readers can predict cyclical market trends by comparing market expectations and realities and looking at the interaction of different types of real estate. The final section shows how people view their homes as sources of capital. During periods of recession and growth, residents view their homes differently in terms of a cash source.

Overall, this report shows that the real estate market cannot be generalized. Analysts must consider a wide range of economic factors from different markets before they can make informed real estate investments.

Source: <http://www.builderonline.com/local-housing-data/miami-fort-lauderdale-pompano-beach-fl/aboutmsa>



VIII. Drivers of Commercial Real Estate

Commercial Property Returns and Credit Rationing

There is an inverse relationship between returns on commercial real estate and credit. For example, as credit tightens (ie. investment to loan ratio increases), returns on commercial real estate decrease. It also appears that the investment to loan ratio is a leading indicator to commercial property returns (Figure 17).

Commercial Property Returns and Flow of Funds into Commercial Real Estate

Fund flows are a lagging indicator of commercial real estate returns (Figure 18). Investors typically follow yields when they make investment decisions. When investors see that real estate returns increase (decrease), then the amount of fund flows will also increase (decrease).

Expected Corporate Profits and Commercial Property Returns based on Appraised Values

The change in expected S&P500 EPS (change in corporate profits) is a leading indicator of all property returns (Figure 19). In general, as the change in expected corporate profits increases (decreases), then all property returns will also increase (decrease) but will lag behind by a couple of quarters. When companies project that their corporate profits will increase, then they know that they have a greater ability to afford rents and may expand to new buildings. Since there is a greater demand for commercial space, then commercial properties can profit more and their returns will also increase.

Figure 17: Commercial Property Returns and Credit Rationing (1978Q1 to 2015Q3)

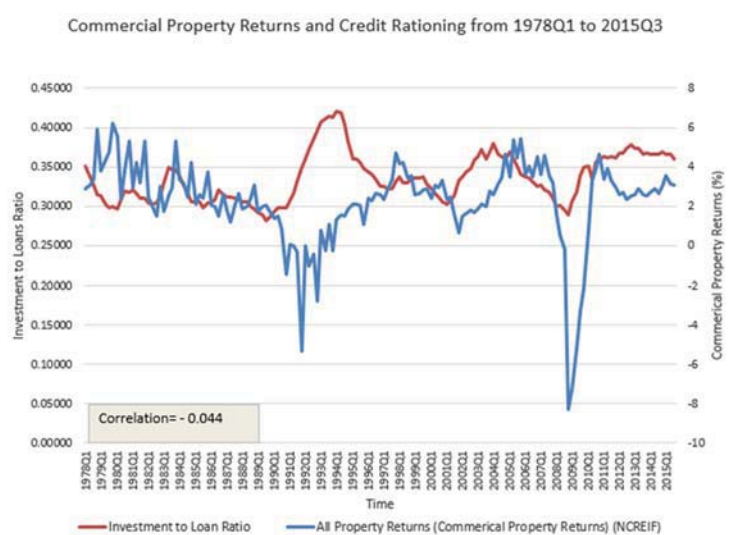
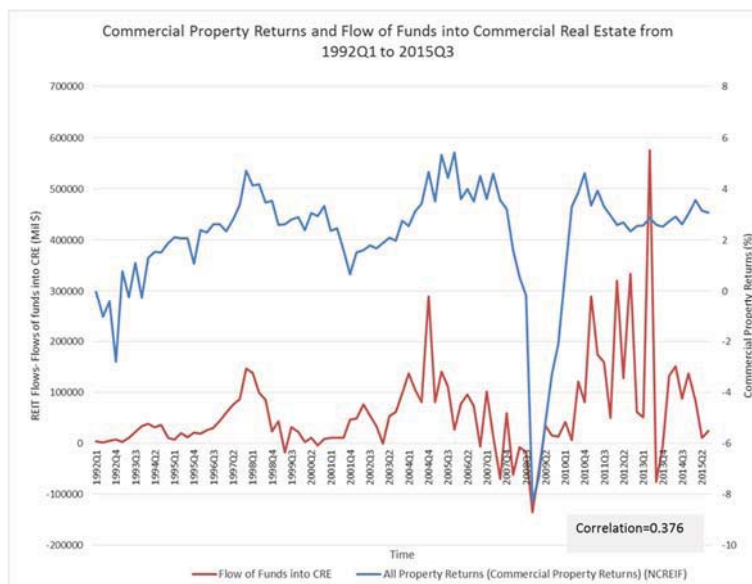


Figure 18: Commercial Property Returns and Flow of Funds (1992Q1 to 2015Q3)



Expected CRE Market Conditions and Realized Commercial Property Returns

Anticipated CRE market conditions and CRE returns are positively related (Figure 20). It should be noted that commercial property returns lag anticipated commercial real estate market conditions (Architecture Billing Index). As CRE market conditions increase, CRE returns will also then increase but lag behind. CRE market conditions are an indicator of future investment in real estate. Investors will consequently bid up the prices of properties seeking the highest yields.

Figure 19: Change in Expected Corporate Profits and Commercial Property Returns (1979Q2 to 2015Q3)

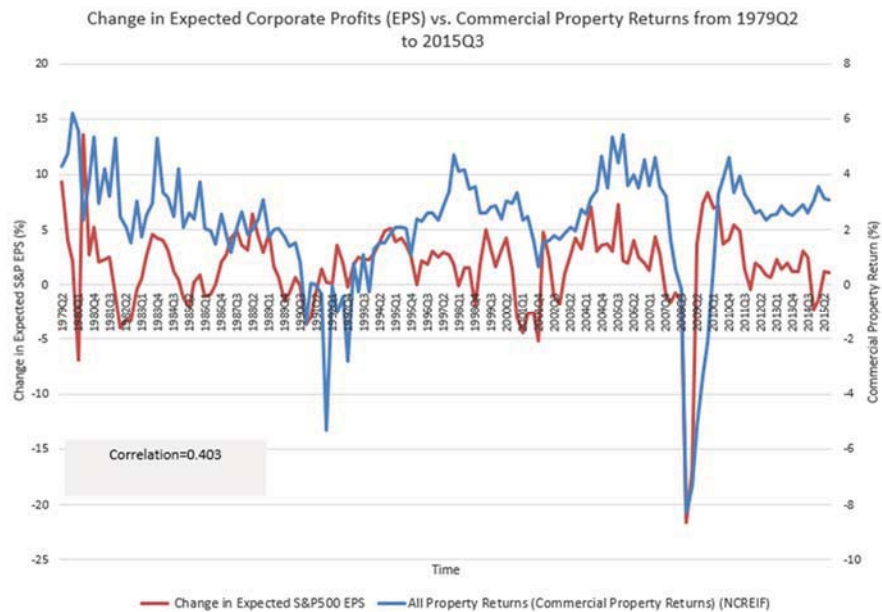


Figure 20: Expected CRE Market Conditions and Realized Commercial Property Returns (1995Q4 to 2015Q3)

