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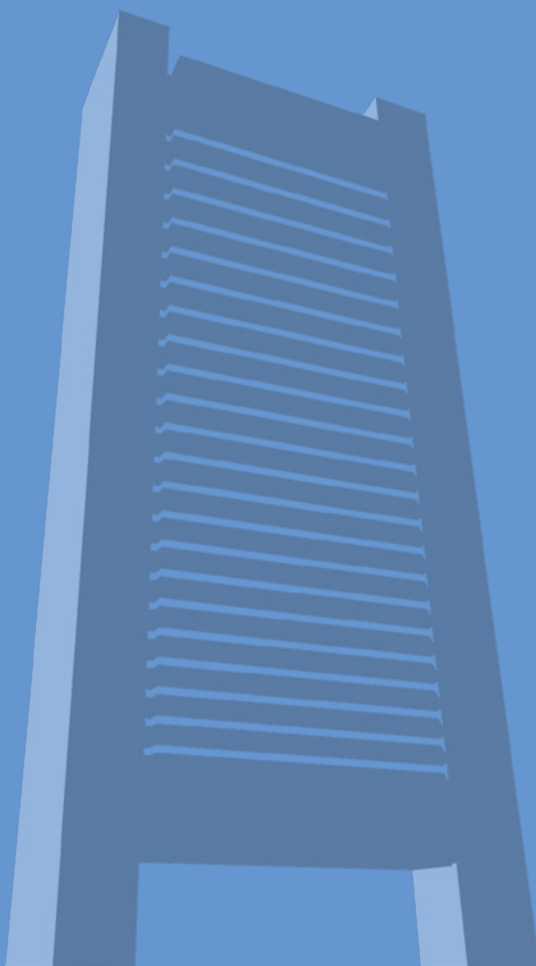

Financial Stability: The Role of Real Estate Values

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bostonfed.org

Assessing Financial Stability Risk

- Focus of my remarks: problems that can arise when the value of commercial or residential real estate fluctuates significantly
- Caveats:
  - Not here today to predict problems but rather to suggest we head them off
  - Global financial system is more stable given regulatory enhancements since the financial crisis
    - less likely to be the source of disruption; better prepared to withstand an external shock should one occur
- However, other macroeconomic conditions and demographic trends may exacerbate the possibility of shocks

Financial Stability Steps: Vital but Possibly Insufficient

- Steps taken focus on “amplifiers” – the disruption of credit availability from intermediaries harming the broader economy
  - Susceptibility to bankruptcy (…more capital)
  - Susceptibility to runs (…greater liquidity)
  - Clarity of resolution mechanism (…detailed resolution plans)
- But these steps may not be sufficient as they do not address root cause
- Exposures across the banking system that are correlated and sizable
  - Loss of collateral value – frequently real estate
  - International exposures – frequently exchange rate

Roots of Global Financial Stability Problems

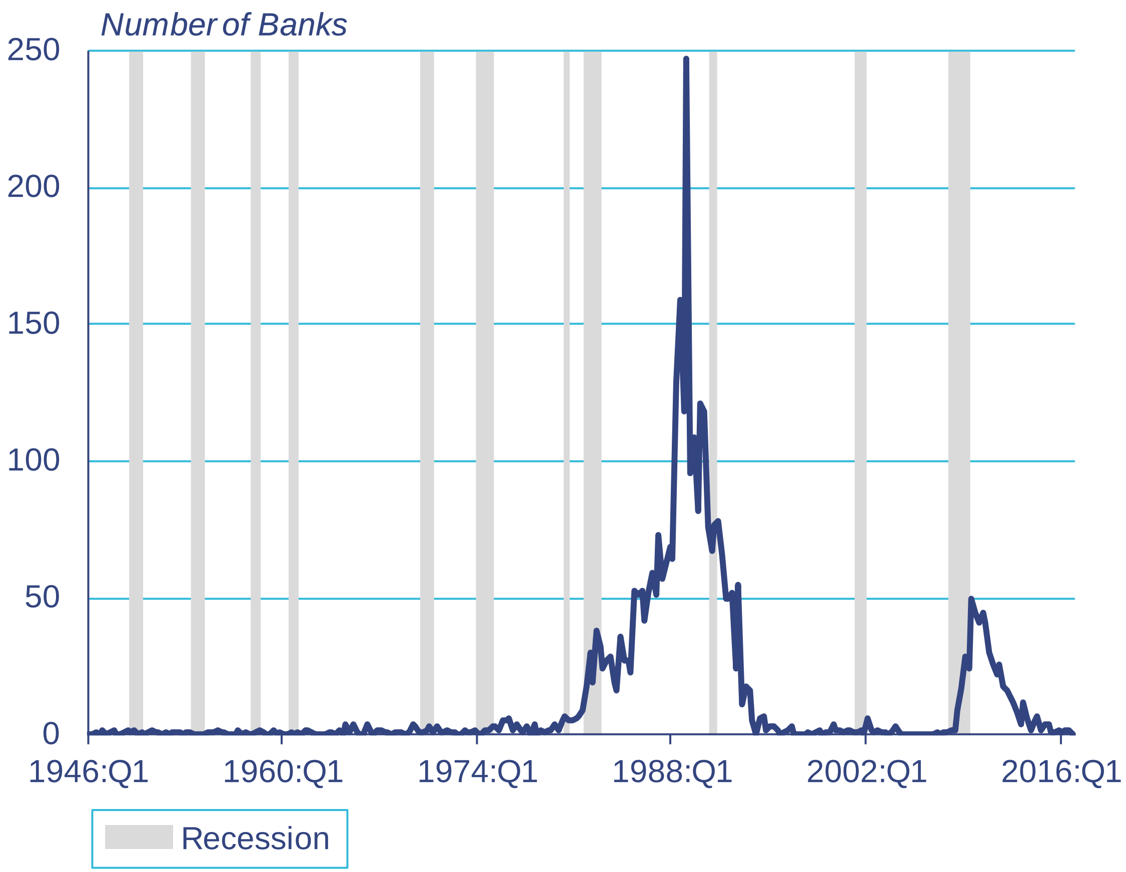
- International Exposures
  - Historically emerging markets had problems if debt was issued in non-domestic currencies, making them susceptible to exchange rate movements
  - Examples – Mexican Peso Crisis (1994), Asian Financial Crisis (1997)
- Real Estate Exposures
  - Both commercial and residential real estate declines have caused financial stability problems in developed countries
  - Japan (1990), Sweden (1991), U.S. (early 1990s credit crunch, 2008 financial crisis)

Financial Crises and Real Estate Values

- Real Estate is integrally linked to the financial system. Leveraged financial intermediaries frequently rely on real estate as collateral for lending
- In a significant downturn, real estate can become quite illiquid and subject to fire sale problems as financial intermediaries liquidate collateral
- In post WWII period in the U.S., real estate has been central to both major financial instability periods

Figure 1: Bank Failures in the U.S.

1946:Q1 - 2016:Q4

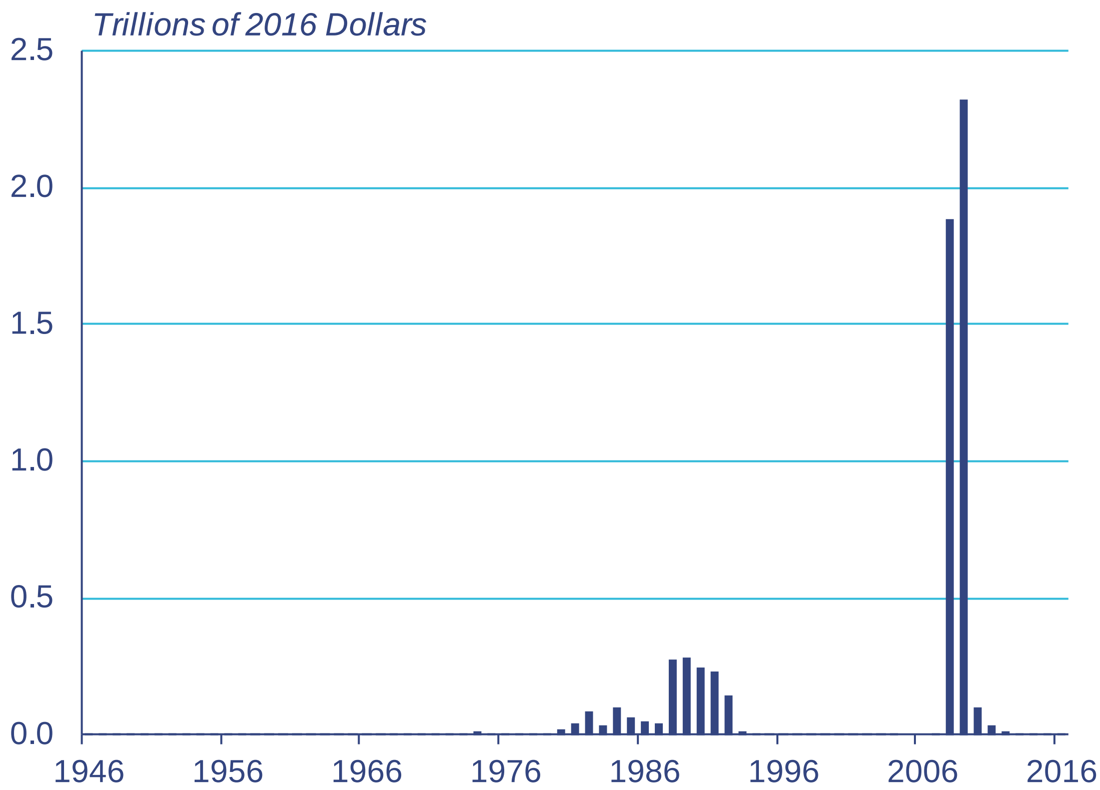


Note: Includes both failures and assistance transactions. Banks include commercial banks, savings banks, and savings and loan associations. Savings and loan associations are included beginning in 1980.

Source: FDIC, NBER, Haver Analytics

Figure 2: Assets of Failed U.S. Banks in Real Terms

1946 - 2016



Note: Includes both failures and assistance transactions. Banks include commercial banks, savings banks, and savings and loan associations. Savings and loan associations are included beginning in 1980. Assets are adjusted for inflation using the GDP deflator.

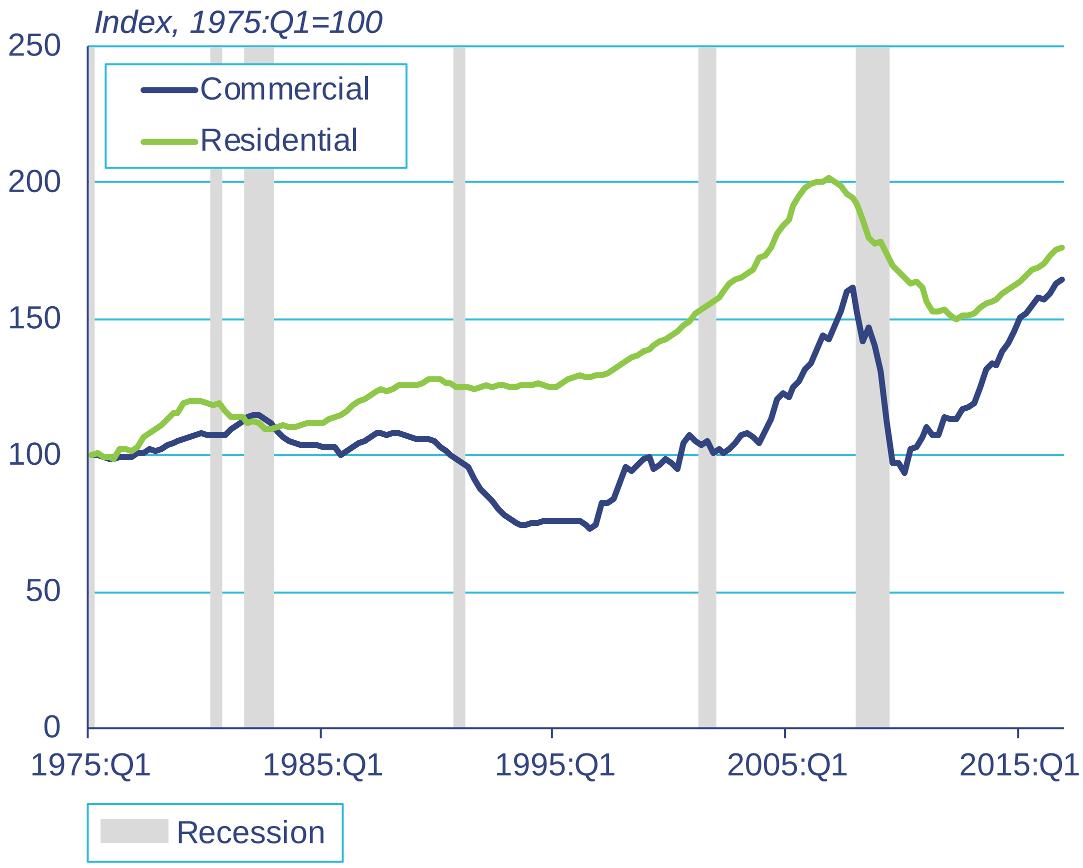
Source: FDIC, BEA, Haver Analytics

Elevated Bank Failures in the U.S.

- Many recessions have not resulted in bank failures or serious credit availability problems
- In the past roughly 70 years, two recessions featured a significant financial stability component
  - 1990s credit crunch – commercial real estate price declines – affected a large number of relatively small banks
  - 2008 financial crisis – residential real estate price declines but also significant declines in commercial real estate – affected some of the largest banks

Figure 3: U.S. Real Residential and Commercial Real Estate Price Indices

1975:Q1 - 2016:Q4



Note: Indices are adjusted for inflation using the GDP deflator.

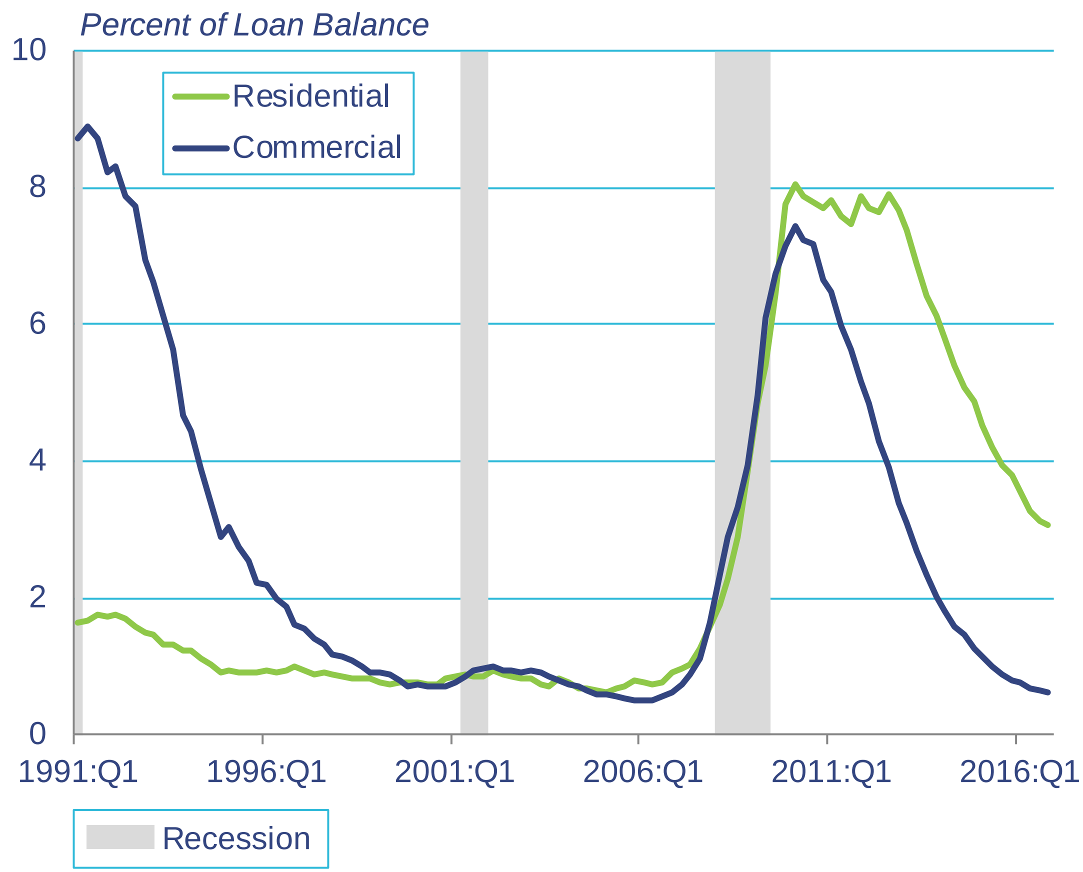
Source: Federal Reserve Board, FHFA, BEA, NBER, Haver Analytics

Commercial and Residential Price Experience Differed in these Periods

- Commercial real estate prices have been more volatile than residential real estate prices
- Commercial real estate prices did diverge from residential real estate prices in the late 1980s commercial real estate downturn
- While the 2008 financial crisis is normally considered to have been primarily motivated by residential real estate problems, commercial real estate prices also declined dramatically

Figure 4: Delinquency Rates on Residential and Commercial Real Estate Loans at U.S. Banks

1991:Q1 - 2016:Q4



Note: Delinquent loans are loans 90 or more days past due plus loans in nonaccrual status. U.S. banks include commercial and savings banks throughout the period and the former OTS-regulated thrifts beginning in 2012. Prior to 1991:Q1, residential and commercial real estate loan delinquencies were not reported separately.

Source: Quarterly Bank Call Reports, NBER, Haver Analytic/s

Price Experience (Continued)

- Impact of large price movements is illustrated by delinquency rates on commercial and residential real estate loans
- Commercial real estate losses were large, contributing to the credit crunch in the 1990s
  - More than 8 percent of commercial real estate loans were delinquent
  - Modest increase in delinquency of residential real estate loans
- Residential and commercial real estate losses were large, and delinquency rates rose sharply, in the 2008 financial crisis

Figure 5: U.S. Residential and Commercial Real Estate Loans by Holder

2016:Q4

Outstanding as of December 31, 2016	Commercial Real Estate						Residential Real Estate		
	Commercial Mortgages			Multifamily Residential Mortgages			Home Mortgages[6]		
Holder	Billion Dollars	Share (%)	Change from Year Earlier (%)	Billion Dollars	Share (%)	Change from Year Earlier (%)	Billion Dollars	Share (%)	Change from Year Earlier (%)
Banking Institutions[1]	1,595.1	61	8.9	424.7	36	12.0	2,968.2	29	3.9
Banks with over $50 Billion in Assets[2]	587.0	22	5.7	180.8	15	8.9	1,592.9	16	1.2
Banks with under $50 Billion in Assets[2]	942.8	36	10.0	239.8	20	13.4	1,001.6	10	5.7
Life Insurers and Other Long-Term Investors[3]	390.8	15	6.7	69.6	6	6.4	23.6	0	-2.1
GSEs & Agency MBS/CMBS	0.0	0	0.0	521.0	44	14.9	6,328.7	62	3.1
Non-Agency MBS/CMBS[4]	491.8	19	-5.1	52.2	4	-21.8	581.0	6	-9.4
Finance Companies	23.6	1	-17.2	1.2	0	0.2	78.6	1	-12.5
Nonfinancial (Other)[5]	113.5	4	3.1	117.9	10	3.1	285.6	3	1.4
Total	2,614.8	100	5.1	1,186.7	100	9.8	10,265.7	100	2.3

[1]Includes U.S.-chartered depository institutions, foreign banking offices in the U.S., banks in U.S.-affiliated areas and credit unions.

[2]Includes commercial and savings banks and thrifts. Author's estimates using call report data.

[3]Includes life and property-casualty insurance companies, private pension funds, and state and local government retirement funds.

[4]Includes REITS.

[5]Includes households, nonfinancial corporate and noncorporate businesses and federal and state and local governments.

[6]Mortgages on 1-4 family residential properties.

Source: Federal Reserve Board, Financial Accounts of the United States; Quarterly Call Reports; Haver Analytics

Leveraged Banks and Real Estate

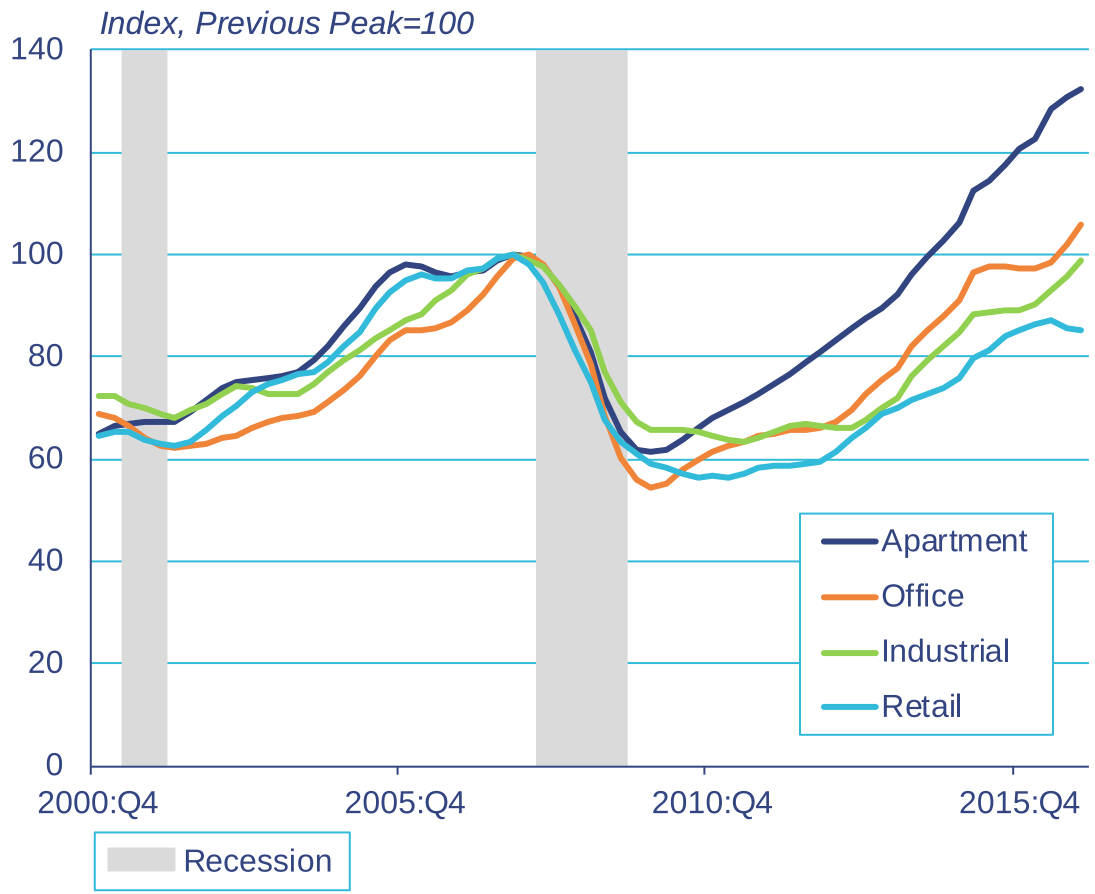
- Real estate has a significant financial stability implication
  - Tends to be leveraged by owners
  - Loans represent a significant exposure for financial institutions that are themselves highly leveraged
- When large losses occur, banks have historically shrunk lending to meet binding capital-to-assets ratios
- Significant tightening of lending has compounding effects
- Banking institutions – large and small – hold a significant share of real estate loans
- Recent growth in lending has been quite significant

Regulatory Response to Real Estate Lending Exposures

- Commercial real estate guidance issued by U.S. bank regulators in 2006
  - Exposure to commercial real estate relative to risk-based capital
  - Risk management
- Commercial real estate guidance announced in December 2015
  - Reemphasizing guidance issued in 2006
  - Enhanced risk management for banks with large commercial real estate exposures

Figure 6: U.S. Real Commercial Property Price Indices by Property Type

2000:Q4 - 2016:Q4

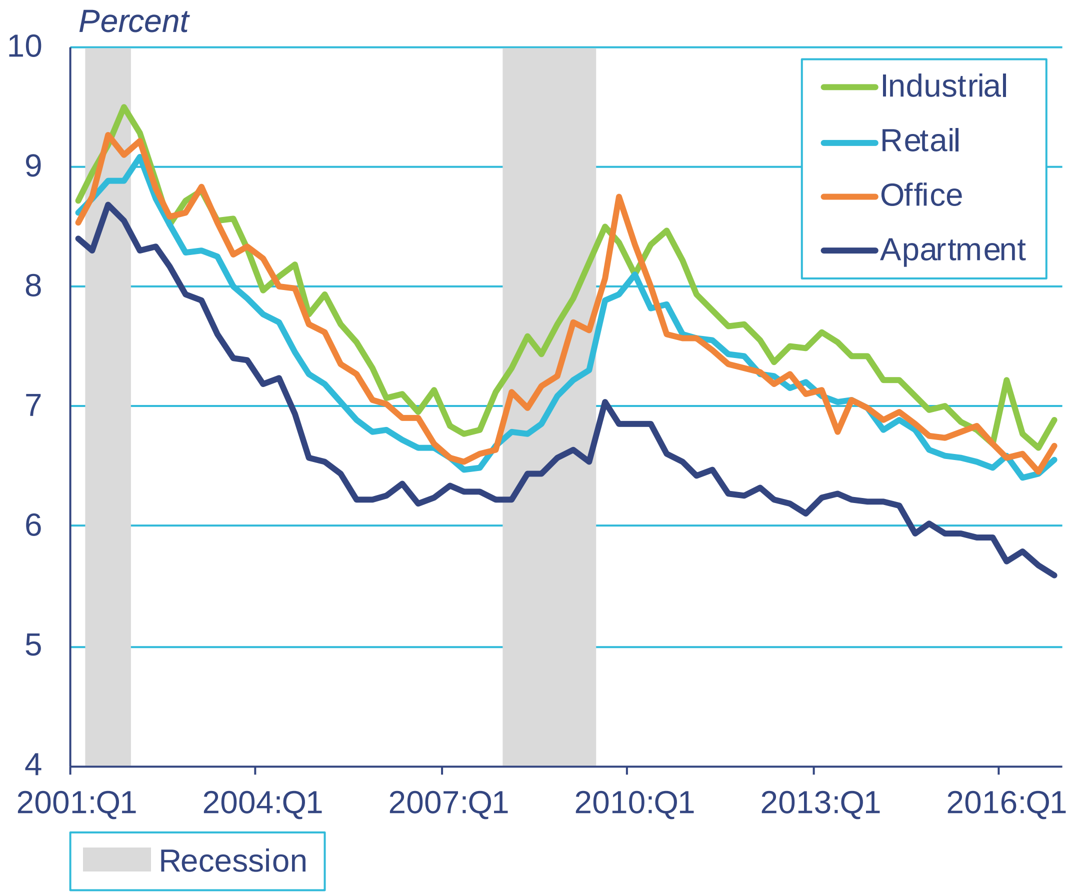


Note: Indices are adjusted for inflation using the GDP deflator. Indices are repeat-sales based and include properties of $2.5 million or more.

Source: Real Capital Analytics, BEA, NBER, Haver Analytics

Figure 7: U.S. Capitalization Rates by Property Type

2001:Q1 - 2016:Q4



Note: The capitalization or "cap" rate is the ratio of net operating income produced by a property to the price paid, calculated at the time of a transaction. Based on properties of $2.5 million or more.

Source: Real Capital Analytics, NBER, Haver Analytics

Commercial Real Estate and Low Interest Rates

- While the risk management of banks with large commercial real estate exposures has likely improved, real estate guidance has had relatively little impact on pricing
- Commercial real estate prices have increased, particularly apartment building prices
- Capitalization rates have fallen substantially
- Higher market interest rates would normally slow new construction and valuations, but equilibrium interest rates may remain relatively low
- Demographic and productivity trends and low equilibrium interest rates would require more reliance on limited macroprudential tools; questions as to their sufficiency

Summary and Conclusion

- Real estate has played an important role in past periods of financial instability
- Use as collateral by leveraged institutions has led to significant problems in countries that experience a significant revaluation of real estate assets
- Commercial real estate capitalization rates are low by historical standards despite the gradual tightening of short-term interest rates and the issuance of commercial real estate guidance

Summary and Conclusion (Continued)

- Given that real estate holdings are widespread and monetary and macroprudential tools for handling valuation concerns are limited, we must acknowledge that the commercial real estate sector has the potential to amplify problems
- Not expecting or predicting such problems in the near term, but exposures could aggravate problems whenever the next downturn does occur