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Flows of Overseas Funds in the Real Estate Market

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The global real estate fund market is expanding against the backdrop of inflows from investment funds. Japan's real estate fund market has also experienced inflows from foreign investment funds, which now hold a share equivalent to almost 20 percent of the total market value of J-REITs. These investment funds have actively invested via cross-border transactions and may adjust their fund flows in response to manifestations of global risk factors such as those reflected in adjustments in global financial markets. This review first gauges cross-border investment flows of these investment funds to real estate funds using fund-level data, where funds are sorted depending on their location of the registration and investment destination. It then investigates how changes in the economic and financial environment affects investment flows and the real estate prices in each region. The results show that real estate funds in many regions experience a decline in inflows from investment funds and price drops of the local real estate funds as a result of deterioration in global financial conditions or rises in the U.S. interest rate, with the effects particularly pronounced in Japan. These results also indicate that when considering developments in the commercial real estate (CRE) market in Japan, it is essential to look into changes not only in domestic factors but also in global financial conditions, which may have an important impact on investment funds' portfolio allocation decisions.

Introduction

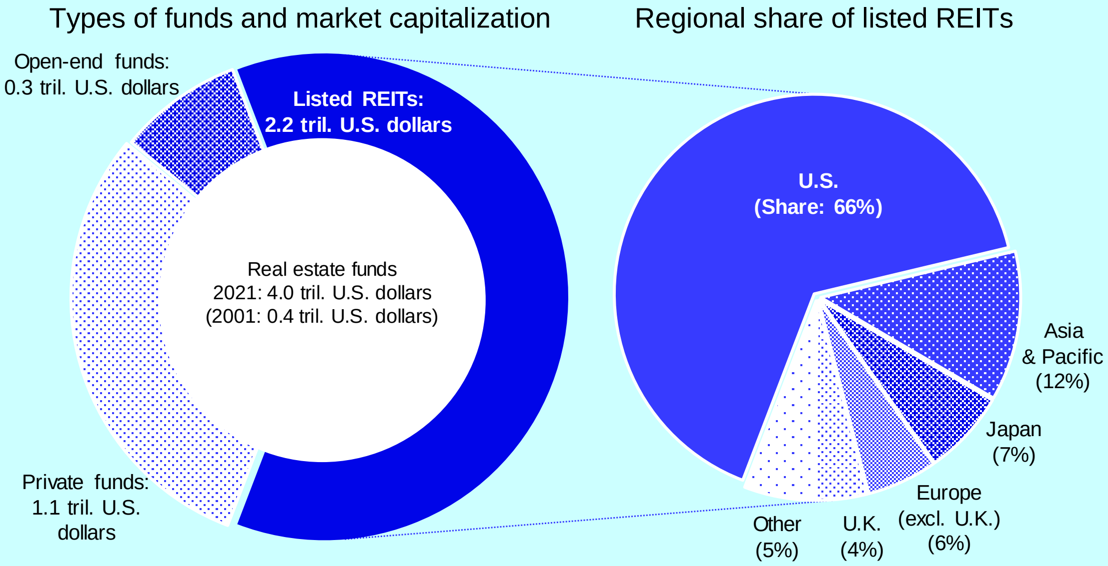
In the past 20 years, the size of the global real estate fund market has grown 10 times and has recently reached about 4 trillion dollars (Chart 1). Among the funds, listed REITs, mainly "equity REITs", comprise more than half of the total market share. Chart 2 shows the shares of investment funds' holdings of listed REITs in Japan and the U.S. While these REITs generally issue equities to various types of domestic and foreign investors in financial markets to acquire commercial real estate (CRE), this indicates that investment funds' share has increased dramatically in the past 20 years in both countries against the backdrop of their rising presence in the global financial market. Although there are positive views that these investment funds play a central role in promoting growth of the industry, there are also views that stress concerns about their vulnerabilities and implications regarding risks to financial stability.[1]

The presence of foreign investment funds in Japan's real estate market has been rising as well. In Japan's CRE market, the share of acquisitions by foreign investors has been on an increasing trend and has hovered at around 20 percent in the past few years, compared to around 10 percent prior to the global financial crisis (GFC).[2] In terms of J-REITs, which are major players in the domestic CRE market, recent data show that 60 percent of the market share is held by domestic and foreign investment funds, etc.[3]

Chart 3 shows investments to Japanese real estate funds (mainly J-REITs) from foreign investment funds. The amount outstanding has been increasing since the GFC, mainly driven by flows from U.S. and European investment funds, which now hold approximately 25 billion U.S. dollars, representing 20 percent of the overall market share. In constructing global portfolios, these investment funds take into account not only the economic and financial conditions of Japan but also those of other investment destinations, such as the U.S. Therefore, fluctuations in global financial and economic conditions could have a large impact on the Japanese real estate market through changes in foreign investment fund flows and real estate fund prices. Chart 3 shows that there were significant outflows from investment funds across several regions during the GFC.

Given the rising presence of foreign investment funds in the Japanese real estate fund market, this review first gauges global investment fund flows to real estate funds across various regions and then study their

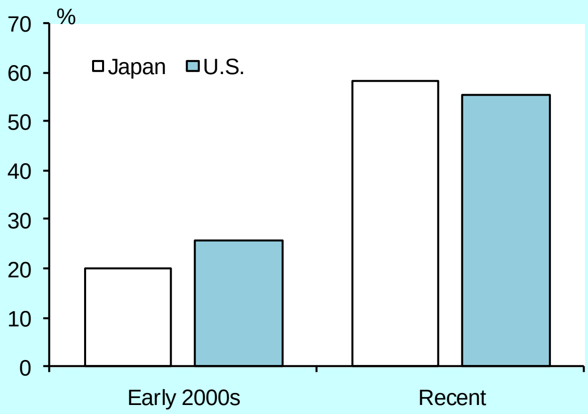
[Chart 1] Global real estate fund market



Note: Listed REITs are the sum of equity REITs and mortgage REITs. Open-end funds are mutual funds with direct real estate holdings that operate mainly in Europe. Market capitalization of private funds is net asset value. Values in 2001 are estimates.

Source: EPRA; Preqin; S&P Global Market Intelligence.

[Chart 2] Share of investment funds' holdings of real estate funds



Note: For the U.S., the figure is the sum of investment funds. For Japan, the figure is the sum of foreigners and investment trusts. "Recent" is as of August 2021 for Japan and September 2017 for the U.S. U.S. figures are from Shen, Jianfu, "Distress Risk and Stock Returns on Equity REITs," *The Journal of Real Estate Finance and Economics*, 62(3), 2021. Early 2000s of Japan is from Oda and Hamabe (2022).

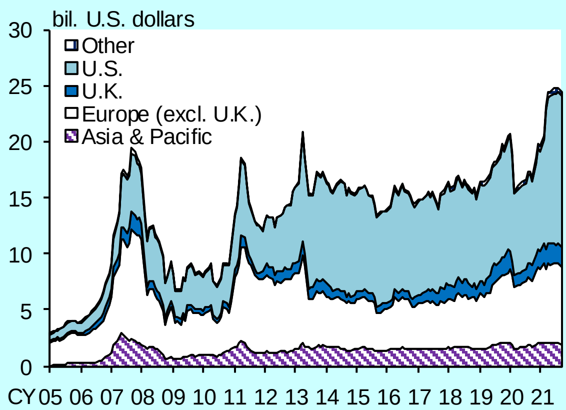
Source: Japan Exchange Group, etc.

vulnerabilities through some analysis.

Vulnerabilities of Investment Funds' Activities in the Real Estate Fund Market

First, focusing on the role of investment funds, vulnerabilities of real estate funds is studied. As an illustration, Chart 4 shows the funding structure of equity REITs with various types of investors. REITs finance physical real estate not only by borrowing from

[Chart 3] Japanese real estate fund holdings within foreign investment funds (publicly offered)



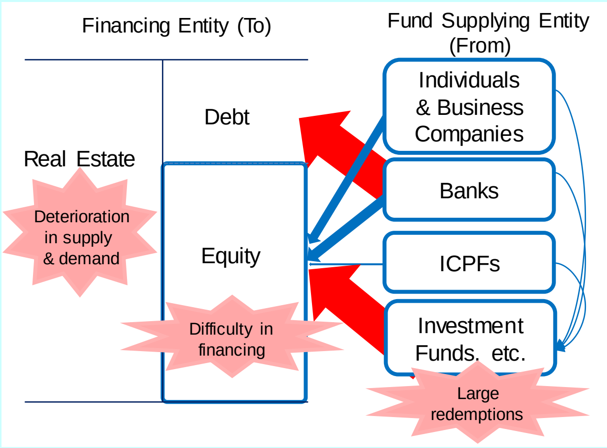
Note: Figures are calculated using the regional share of AUM (assets under management) for investment funds that mainly invest in real estate funds. "Asia & Pacific" excludes Japan (the same applies to subsequent charts).

Source: Refinitiv Lipper.

banks but also by issuing equities to domestic and foreign investors. Given this funding structure, there are two main vulnerabilities of real estate funds that have attracted attention from a financial stability perspective: leverage and vulnerabilities associated with the equity held by investment funds.

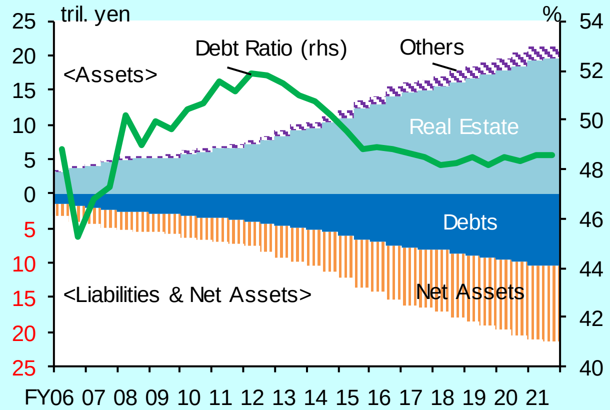
In terms of the former, when a highly leveraged REIT is hit by a market shock, adverse changes in demand and supply conditions could put downward pressure on real estate prices through increasing difficulties associated with debt repayments or equity issuance facing the funds. In terms of the latter, large

[Chart 4] Fund flows to equity REITs



Note: The thickness of the line toward equity represents the size of the holding entity share (as of August 2021) and is prepared based on the ideas in An, Wu, and Wu (2016). Investment funds, etc. is the sum of investment trusts and foreigners. "ICPFs" represents Insurance companies and pension funds.
Source: Japan Exchange Group, etc.

[Chart 5] Balance sheet of J-REITs



Note: The latest data consist of companies with fiscal years ending between October 2021 and March 2022.
Source: Nikkei Inc., "NEEDS-Financial QUEST."

redemption waves could force funds to sell REITs at a discounted price for the purpose of securing liquidity; as a result, this could lead to the same downward pressure on real estate prices.[4,5]

Chart 5 shows the developments of the aggregate balance sheet of J-REITs. The debt ratio has been on a declining trend, indicating that there are currently no clear signs of a build-up of leverage. However, as shown in Chart 2, the presence of investment funds in the REIT market has grown, suggesting that vulnerabilities associated with the equity structure of the REIT could have become more significant. Along these lines, in the following, global investment fund flows to real estate funds are gauged and how global shocks propagate to fund flows and real estate fund prices are studied for various regions, including Japan.

Investment Fund Flows to Real Estate Funds and the Effect of Global Shocks

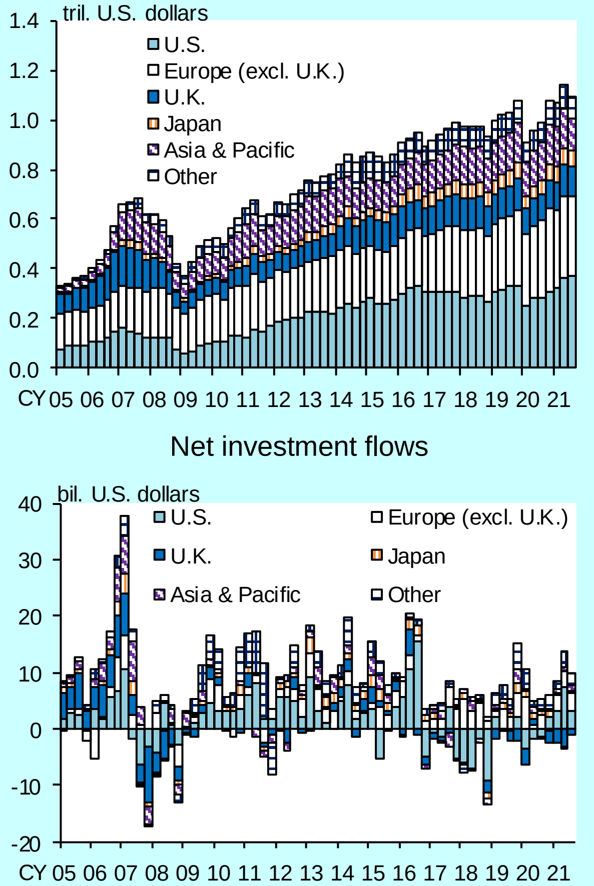
The quantitative analysis is conducted using fund-level data of investment funds with exposure to real estate funds (approximately 12,000 funds in total). Each fund's exposure to the real estate funds are grouped depending on investment destination so that investment flows is seen from a "whom-to-whom" perspective. Chart 6 shows amounts outstanding and investment flows of global investment funds to real estate funds located in each region. First, investment fund holdings of real estate funds have been on an increasing trend and recently reached about 1.1 trillion U.S. dollars. This amounts to about 40 to 50 percent of the total market share of publicly traded real estate funds on a global basis. Second, flows from investment funds to real estate funds tend to co-move across different regions. For example, prior to the GFC, there were net inflows to real estate funds in many regions, followed by large sell-offs also in many regions after the GFC. Chart 7 shows prices of publicly traded real estate funds in each region. In stress events, such as the GFC and the March market turmoil of 2020, real estate fund prices fell in many regions. This indicates the possibility that through deepening of cross-border transactions of investment funds, real estate markets in various regions could be commonly more influenced by global shocks.

Chart 8 shows the estimated sensitivities of net investment flows to real estate funds and prices of these funds to global shocks for each of the locations of the real estate fund. In the estimation regression, U.S. interest rates and the financial conditions index (FCI) calculated by the Chicago Fed are used as proxies for global factors.[6] Note that the FCI is constructed from several variables, including the volatility index (VIX) and credit spreads of corporate bonds, which serve as proxies for uncertainties in financial markets. These sensitivities represent the impact of global shocks to these variables within the quarter these shocks occur. The vertical axis shows changes in net outflows normalized by AUM at the end of the previous quarter (light blue), and quarter-to-quarter change in real estate fund prices (dark blue), respectively.

The estimation results show that investment flows to real estate funds in various regions including Japan fall following global shocks such as a rise in U.S. interest rates and widespread deterioration in financial conditions – a worsening of the FCI. As a result, prices

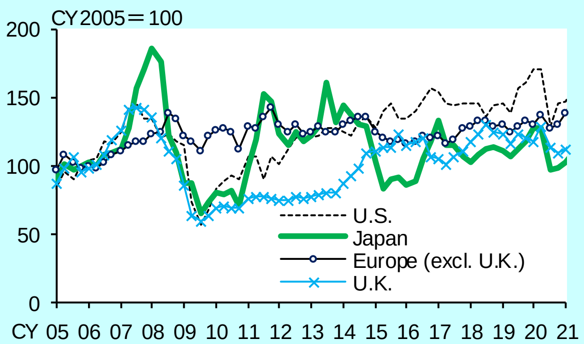
[Chart 6] Real estate fund holdings from investment funds

Amounts outstanding



Note: Figures are calculated using the regional share of AUM for investment funds that mainly invest in real estate funds.
Source: Refinitiv Lipper.

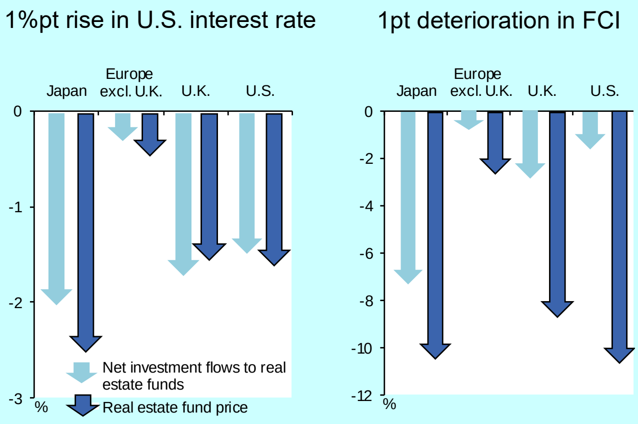
[Chart 7] Real estate fund prices



Note: Real estate fund prices are in U.S. dollars, which are calculated from the relationship between AUM and net investment flows.
Source: Refinitiv Lipper.

of these real estate funds also decline in each region. In general, these two types of global shocks are considered to put downward pressure on financial and real economic activities, and the above results indicate that these shocks also affect investment funds'

[Chart 8] Sensitivity of net investment flows to real estate funds and their prices to global shocks



Note: 1. Real estate fund prices are calculated from the relationship between AUM and net investment flows.
2. The U.S. interest rate is the 10-year U.S. Treasury yield. 10-year government bond yields are additionally used for estimation of Japan, Europe and the U.K. (interest rate variables are 5-year differences in order to remove trends). The estimation period is from the January-March quarter of 2003 through the January-March quarter of 2021.
Source: Federal Reserve Bank of Chicago; OECD; Refinitiv Lipper.

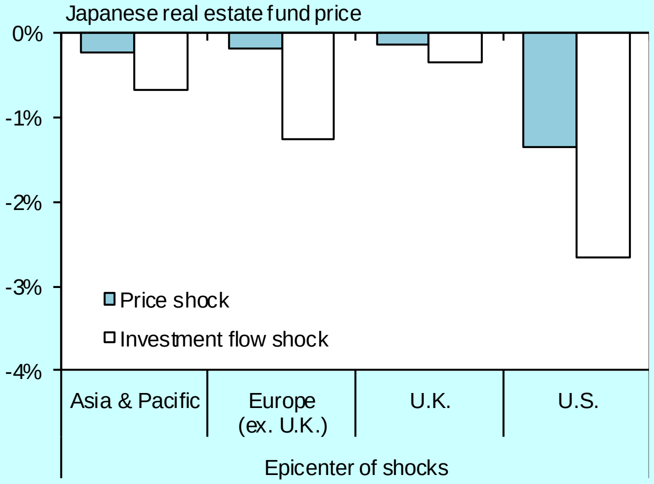
activities.[7]

Comparing the sensitivities across regions, funds in the U.S. and Japan are relatively responsive compared to those of Europe excluding the U.K. This may be due to the relatively low share of REITs in Europe excluding the U.K., where the share of listed REITs in the CRE market is about 30 percent, compared to Japan (approx. 60%) and the U.S. (approx. 100%).[8] Within European countries excluding the U.K., Germany has the largest market share. In Germany, the mainstream products are open-ended investment funds that hold real estate directly. These open-ended funds have schemes for containing rapid redemption pressure, such as setting lock-up periods after the purchase and pre-notice periods for redemption. Furthermore, these funds are priced based on CRE valuation prices, so the responses of fund flows and prices tend to be smaller than in other regions.[9] Furthermore, almost 90 percent of the investment flows to this region are from the same region – Europe excluding the U.K. – which can be viewed as another factor in containing propagations of global shocks.

It is also worth noting that other than these two types of global shocks, region-specific shocks to the real estate funds market may propagate to Japan's real estate market via, for example, portfolio adjustments of global investment funds.

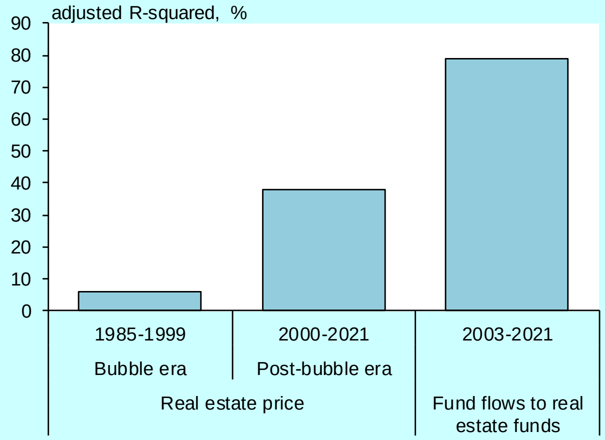
In order to investigate this point, with global factors, the effects of changes in the U.S. interest rate

[Chart 9] Spillovers of region-specific shocks



Note: The figure shows the impact of a 10% decrease in real estate fund prices and a 4% outflow of funds (normalized by AUM at the end of previous period) in each region on Japanese real estate fund prices.

[Chart 10] Explanatory power of global factors for fluctuations in real estate prices and investment flows to Japan



Note: Adjusted R-squared is calculated by regressing global factors (changes in FCI and U.S. interest rates) on changes in real estate prices (TOPIX Real Estate Industry Index) and investment flows into real estate funds. Principal components of investment flows to each country are also used as a global factor in the estimation for fund flows.

Source: Bloomberg; Federal Reserve Bank of Chicago; Refinitiv Lipper; OECD.

and the FCI, being controlled, it is estimated how shocks originating in each country – both fund flows and price shocks – propagate to real estate fund prices in Japan (chart 9).[10,11] It is shown when there is a negative investment flow shock or price drop in foreign real estate fund markets, prices of Japan's real estate funds tend to drop, and this effect is large for shocks originating in the U.S.

Concluding Remarks

Since the GFC, the global real estate fund market has expanded and risks associated with activities of investment funds could have become a more relevant issue from a financial stability perspective. This review estimates how global shocks propagate to real estate fund flows and prices of these funds in various regions using fund-level data on investment fund flows to real estate funds. According to the estimates, global shocks, such as rises in the long-term interest rate in the U.S. or widespread deterioration of financial conditions puts negative pressure on investment fund flows to real estate funds and pushes down these prices in various regions, including Japan. Furthermore, region-specific shocks could also propagate to Japan's real estate market, especially those originating in the U.S.

These results indicate that global financial and economic conditions are essential for understanding developments in Japan's real estate market, especially those in the CRE market. Indeed, as shown in chart 10, the explanatory power of the global investment flows – represented by the common factor of investment flows of various regions in the estimation equation – on investment flows to Japan's real estate funds and real estate prices have been significant. In addition, the impact of global factors on real estate prices have recently become larger compared to the Heisei bubble period, which indicates that risk factors of Japan's CRE market could have shifted from domestic to global factors.

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[1] On the U.S. publicly traded REITs, An, Heng, Q. Wu and Z. Wu, "REIT Crash Risk and Institutional Investors," *The Journal of Real Estate Finance and Economics*, 53(4), 2016 shows that investment funds' share rose from around 25 percent in the early 2000s to around 50 percent in 2011. It also points out that, such a change may have increased the procyclicality that arises from a decline in REIT price and investment fund outflows in times of stress.

[2] Share of foreign investors' acquisition in the CRE market is calculated using data from Japan Real Estate Institution. For more detail, see Box 2 in the BOJ "Financial System Report" April 2022.

[3] On the J-REIT market, Oda Kunihiro, Hamabe Akira "J-REIT Shijo no hensen to shijo kozo no henka (in Japanese)," Mitsubishi UFJ Shintaku Shisan Unyo Jyoho, January 2022 points out that when the J-REIT market was first established in the early 2000s, J-REITs were held mostly by real estate firms with close relations to these J-REITs. However, the investor base of J-REITs has expanded drastically after J-REITs were allowed to be a part of index funds in July 2003, and after the listing of the REIT index fund at the Tokyo exchange market started in September 2008.

[4] In terms of redemptions to investment funds, in the March market turmoil of 2020, there were suspensions at some U.K. open-ended funds investing in real estate. On this point, Grill, Michael, L. M. Vivar and M. Wedow, "The Suspensions of Redemptions during the COVID-19 Crisis - A Case for Pre-Emptive Liquidity Measures?" European Central Bank (ECB) Macroprudential bulletin, April 2021 points out that these funds tended to have less cash and were relatively high leveraged. This report also points out that although these suspensions eased liquidity stress at the fund-level, the associated liquidity problems on the investor side could lead to deterioration in investors' sentiment and damage reputations of suspended funds.

[5] On the vulnerabilities of the CRE market, the IMF's April 2021 GFSR (Global Financial Stability Report) points out that the transmission channel from redemptions at investment funds could be significant, which implies deepening of cross border transactions could have strengthened the impact of global shocks.

[6] For information on the NFCI (National Financial Condition Index), see Bravea, Scott, and R. A. Butters, "Diagnosing the Financial System: Financial Conditions and Financial Stress," *International Journal of Central Banking*, June 2012.

[7] On the effects of rising interest rates, Rajan, Raghuram G., "Has Finance Made the World Riskier?" European Financial Management, 12(4), 2006 points out that this could negatively affect investor risk sentiments and put downward pressure on investment flows and the corresponding prices. On the effects of rises in the FCI, the ECB's "Financial Stability Review," May 2018 points out that when the risk sentiment of investors deteriorates, there could be outflows from real estate funds and ultimately lead to adjustments in CRE markets. Shen, Jianfu, "Distress Risk and Stock Returns on Equity REITs," *The Journal of Real Estate Finance and Economics*, 62(3), 2021 points out that when the FCI rises, investors' tendency for "flight to quality" strengthens in the REIT market, and REITs with relatively weak fundamentals consequently tend to be sold at discounted prices. The size of the shock in the regression is 1 percentage point for the U.S. interest rate hike, which is about 1 standard deviation, and a 1pt rise in the FCI corresponds to about a 2 standard deviation shock – notably, this is about the same as the maximum inter-quarter rise during the GFC period of 0.93 (3Q/2008).

[8] Graeme, Newell, and M. J. Marzuki, "The Emergence and Performance of German REITs" *Journal of Property Investment and Finance*, 36(1), 2018 points out that the reasons for the relatively small market size of REITs in Germany may be due to the stricter legislative requirements for establishing REITs and to REITs being prohibited from holding residential real estate.

[9] European Securities and Markets Authority (ESMA), "Recommendation of the European Systemic Risk Board (ESRB) on Liquidity Risk in Investment Funds," 2020 points out that in the March market turmoil of 2020, redemptions in open-ended real estate funds were limited in Europe excluding the U.K., mainly in Germany.

[10] A region-specific shock refers to a situation where a shock materializes in a certain real estate market against the backdrop of, for example, heightened leverage. The April 2021 GFSR points out that adjustments of price misalignments in the CRE market could be triggered not only by global financial shocks but also by sector shocks within the country or investment flows to the country. Furthermore, Bouri, Elie, R. Gupta and S. Wang, "Nonlinear Contagion between Stock and Real Estate Markets: International Evidence from a Local Gaussian Correlation Approach," *International Journal of Finance and Economics*, 2020 indicates that in stress events such as the U.S. dotcom bubble (near year 2000), European sovereign crisis (2011), and Brexit (2016), REIT prices of each country, including those of the U.S., dropped without major rises in U.S. interest rates or those in the FCI.

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