Monetary Policy, Real Estate Market and Global Capital Flows: A Brief Empirical Analysis Based on Fed Interest Rate, Home Price Index and Capital Inflows

Yu Guo

Dalian No.1 High School, Dalian, China

3059261590@qq.com

Keywords: Monetary policy; Real estate prices; International capital flows

Abstract: Using quarterly data on the U.S. federal funds rate (FEDFUNDS), the U.S. home price index (CSUSHPINSA), and net capital inflow (BOP), this report empirically tests the linkages between U.S. monetary policy, the real estate market, and international capital flows from 1986 to 2014 via correlation analysis and ordinary least squares (OLS) regression. The study found that the United States' net capital inflow exhibited significant cyclical fluctuations. There is a significant positive correlation between the home price index and capital inflows, indicating that overseas funds tend to chase returns on real estate assets. In contrast, the negative relationship between the federal funds rate and capital inflows is relatively weak. The conclusion demonstrates that, within an open financial system, international capital allocation is predominantly influenced by asset prices rather than by basic spreads. The positive feedback mechanism may exacerbate the risk of asset bubbles. Accordingly, the report proposes strengthening macroprudential supervision of real estate finance, paying attention to international spillovers from monetary policy, strengthening global financial coordination, and optimizing the structure of capital flows.

1. Introduction

In the context of global financial system integration, the interaction among monetary policy, asset pricing, and transnational capital transfers is increasingly significant, constituting a key variable affecting macro stability. As the world's largest economy, the United States' benchmark interest rate adjustment dominates domestic financial policy and also finely regulates international capital allocation through yield differences and risk preferences. As a core asset class, fluctuations in real estate prices not only reflect the fundamentals of the local economy but also act as an important reference for global resource allocation. This paper selects the 1986-2014 U.S. macro sequence, uses three major indicators, namely the Federal Funds Rate (FEDFUNDS), the U.S. Home Price Index (CSUSHPINSA), and net asset inflows, and explores the internal mechanism of monetary policy instruments, changes in the real estate market, and global capital flows through correlation measurement and OLS regression.

The empirical results show a significant positive correlation between the home price index (HPI) and capital inflows. While the negative impact of interest rates remains comparatively weak, this suggests that international capital is more likely to seek asset returns than to benefit from an interest rate advantage. The research findings provide empirical support for the analysis of cross-border capital allocation behavior, the prevention of asset bubble risk, and the optimization of macro-prudential policies, and have enlightening implications for financial stability governance under open economy conditions.

This paper presents the main charts and analysis results.

2. Quarterly Changes in Net Capital Inflows to the U.S.

The data in Figure 1 are recorded from around 1986 to 2014, and the figure shows clear periodic fluctuations. In the initial stage (1986-1995), the net inflow of assets was relatively small and showed

  DOI: 10.25236/gemmsd.2025.125

a slight fluctuation in the range of 0-100 billion US dollars, reflecting the United States' limited ability to attract overseas capital at the time. The global financial market was far from mature in cross-border capital flows.

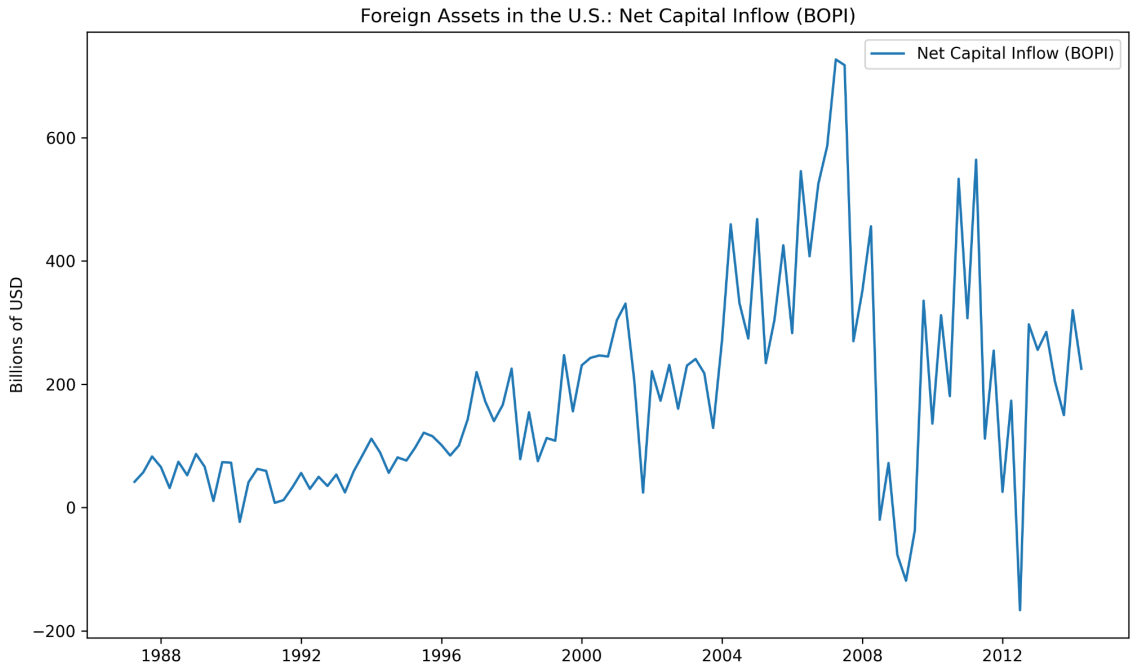

Figure 1. Quarterly Changes in Net Capital Inflows to the U.S.

Since 1995, net capital inflows have increased significantly, but from 1998 to 2007, the fluctuations were more pronounced, with extreme values often observed. It reflects that global funds flocked to the United States during that growth cycle, which coincided with the American economy entering a period of scientific and technological prosperity in the mid- and late-1990s. It also shows that the weight of dollar assets in global investment allocation is constantly increasing. As of 2007, net capital inflows reached a historical peak (more than 600 billion) during the sample period, which was highly consistent with the prosperity of the real estate market, the expansion of credit, and abundant global funds.

In 2008, before and after the financial crisis broke out, the most prominent turning point appeared in the picture. During the financial crisis, capital inflows dropped sharply and briefly turned negative, indicating that a large amount of capital withdrew from high-risk U.S. assets in panic [1-2]. After the crisis, they rebounded rapidly, reflecting the typical characteristics of "safe-haven funds returning". Subsequently, from 2010 to 2014, the fluctuations in capital inflows remained fierce, and the overall average level was lower than that before the crisis; meanwhile, it continued to rise, indicating that the global financial market entered a higher degree of instability and uncertainty after the crisis.

Generally speaking, the most prominent features of the chart are as follows: First, the net inflow of assets in the United States has been significantly influenced by the global financial cycle over the past few decades. Second, macro events (e.g., the technology bubble, the real estate bubble, and the financial crisis) are highly relevant to the violent fluctuations of asset flows. It shows that the United States occupies a key position in the global resource allocation [3], and changes in the asset market quickly attract or exclude cross-border capital.

3. Federal Funds Rate (Quarterly Average)

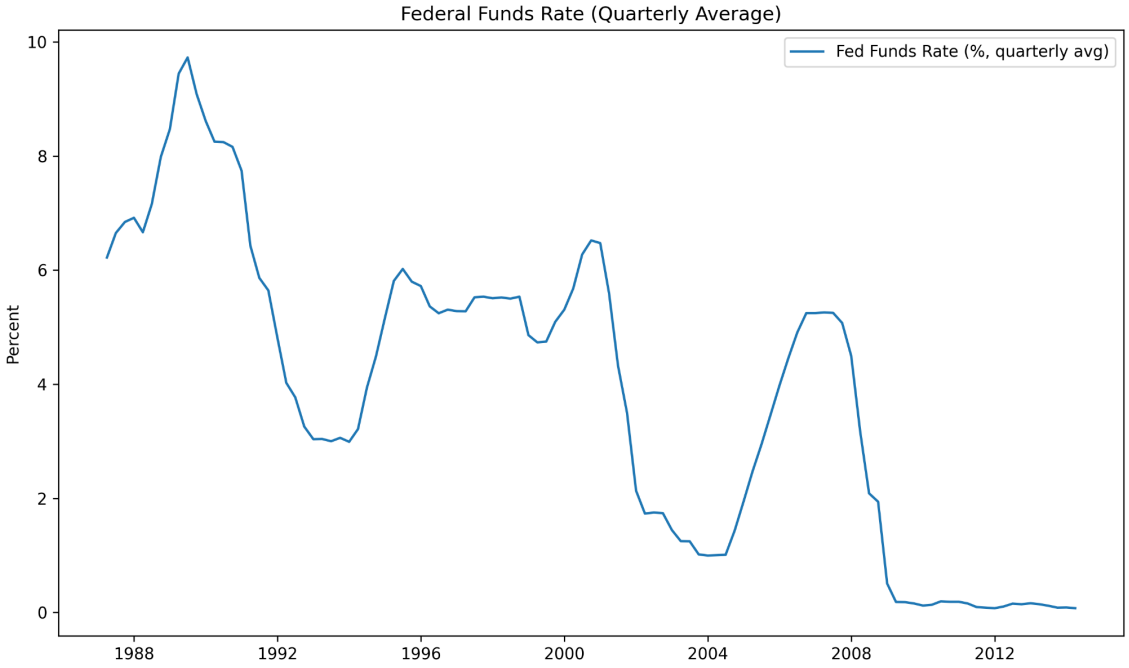

Figure 2. Federal Funds Rate (Quarterly Average)

The figure above shows that from 1986 to 2014, the federal funds rate exhibited significant fluctuations and periodic changes, closely related to the overall economic cycle and the United States' monetary policy. In the late 1980s, the federal funds rate remained high, peaking at nearly 10%, reflecting the Federal Reserve (Fed)'s tight monetary policy in response to mounting inflation. Until around 1990, as economic growth slowed and the price level declined, interest rates fell rapidly, entering a low-interest-rate phase [4].

By 1995, the federal funds rate had risen to approximately 6%, reflecting the robust U.S. economy during the information technology (IT) boom era. Between 1998 and 2000, the Fed raised the federal funds rate to around 6.5% to curb the excessive surge in asset prices amid the dot-com bubble. In 2001, following the bursting of the dot-com bubble, the federal funds rate began a sharp downward trajectory. By 2003, it had fallen to roughly 1%, signaling the Fed's intent to implement an accommodative monetary policy amid the post-bubble economic recession.

From 2004 to 2006, amid the ongoing real estate bubble, the Fed gradually raised interest rates until the rate reached nearly 5%, often regarded as an early stage of tightening during the financial crisis. After the global financial crisis broke out in 2007-2008, the interest rate experienced an unprecedented sharp drop, and quickly fell to a level close to zero. The long-term implementation of the "Zero Interest Rate Policy" (ZIRP) restored the liquidity of financial markets and stimulated economic recovery.

From 2009 to 2014, the federal funds rate approached 0%, reflecting the accommodative monetary policy implemented following the crisis. This low-interest-rate environment affected investment and lending models in the United States, reshaped global resource allocation, and prompted capital to flow into high-risk assets and overseas markets.

Figure 2 shows the specific practices of the Federal Reserve in adjusting interest rates in response to economic cycle fluctuations over the past three decades: high interest rates curb inflation, and low interest rates stimulate the economy. Moreover, key macroeconomic events, such as the technology and real estate bubbles and the financial crisis, are clearly reflected in interest rate changes.

4. U.S. Home Price Index (Quarterly Average, Case-Shiller)

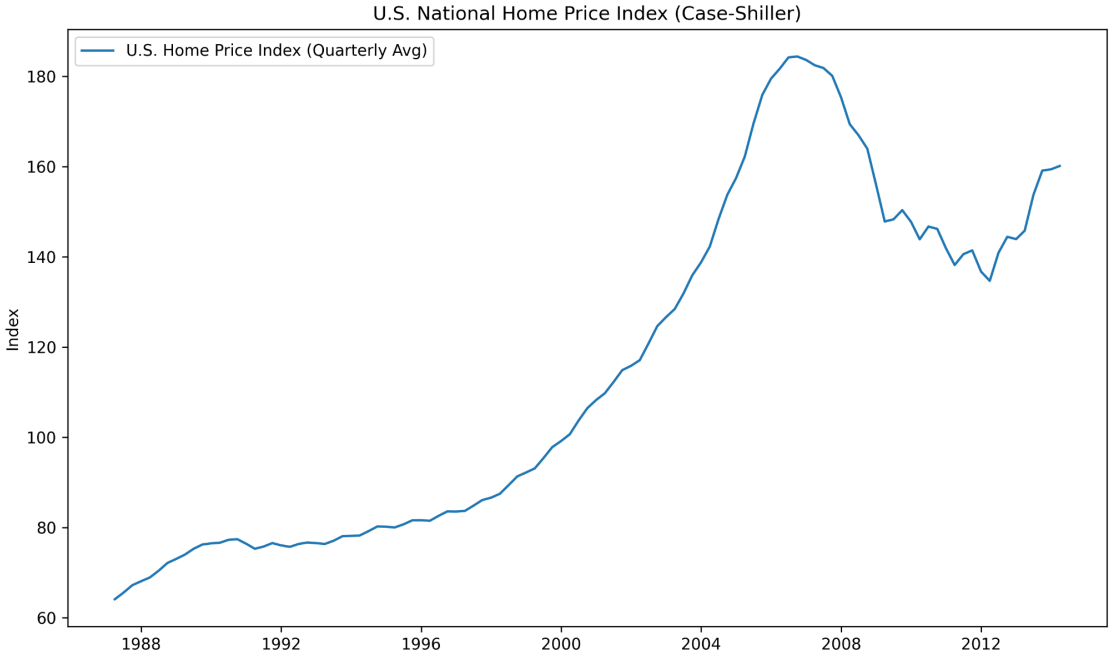

Figure 3. U.S. Home Price Index (Quarterly Average, Case–Shiller)

As shown in Figure 3, it started from 1986 and lasted until about 2014. The chart clearly reflects the three-stage characteristics of "prosperity, recession, and recovery". As shown in the left half of the Figure, HPI maintained a relatively gentle upward trend from 1986 to 1997, with steady growth and limited fluctuations. Due to the benign economic environment and the steady growth of residents' incomes, home prices increased relatively moderately during this period, indicating that the real estate market relies more on traditional economic fundamentals as a supporting development model.

From 1997 until about 2007, home prices were on an upward trajectory. The rate of increase has obviously accelerated from 2001 to 2006. The index has gradually climbed from about 110 to nearly 190, with an increase of about 70%. This stage is a critical period for the formation of American inflation in the real estate market. Key characteristics include a low-interest-rate environment, relaxed borrowing conditions, rapid expansion of financial reforms (such as subprime securitization), and a significant rise in demand for homes purchased as investments. The continuous steep upward trend in the figure vividly reflects the accumulation of asset price bubbles [5].

After the financial turmoil of 2007-2009, HPI fell sharply, from its peak to approximately 145, a drop of more than 20%, in line with the widespread impact of the subprime crisis, the tightening of mortgage lending by financial institutions, and credit disruptions. The clear downward trend shown in the figure closely aligns with the crisis time point, indicating that the real estate market is one of the main channels for financial crisis transmission [6].

In 2010, the real estate market entered a period of adjustment, with relevant indicators fluctuating several times between 135 and 160. The loose macro-control measures promoted the digestion of the stock and gradually stabilized the house price. Additionally, there was a moderate growth between 2012 and 2014. Compared with the pre-crisis peak, the recovery has been more gradual, reflecting the structural changes in the market triggered by tighter credit supervision and higher lending standards.

Figure 3 reveals the changes in the trend of US house prices over 30 years, clearly showing the whole process from formation to collapse of the impact on the real estate market. Research shows that the strong cyclical characteristics of home prices are closely related to credit markets, interest rate regulation, investor expectations, and global capital flows, and are indispensable key indicators for understanding the financial cycle in the United States.

5. Fed Funds vs Capital Inflow (Scatter Diagram)

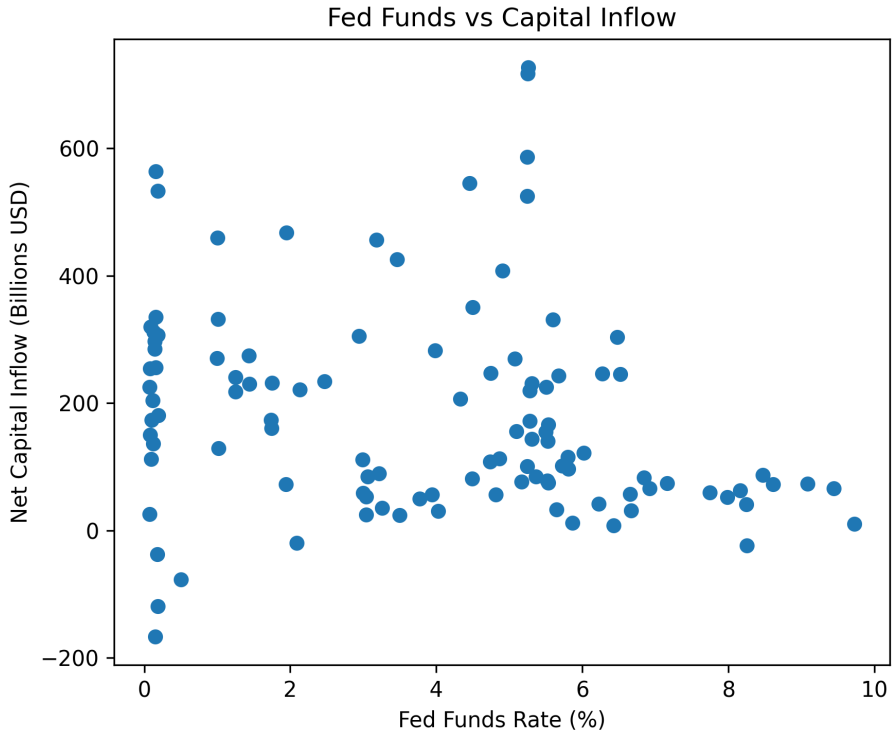

Figure 4. Fed Funds vs Capital Inflow (Scatter Diagram)

As shown in Figure 4, the scatter diagram shows a cross-sectional relationship between U.S. net capital inflows and the federal funds rate. Looking at all the data points, the distribution is highly dispersed, and there is no obvious linear trend, suggesting no strong one-way correlation between interest rate changes and capital inflows. Although a slight statistically negative correlation can be observed, i.e., an increase in capital inflows in some stages occurs when interest rates fall; However, from the perspective of the distribution, the relationship between the two is extremely loose, indicating that interest rates are not the major driving force affecting capital flows [7].

At lower interest rates (0%-2%), a large share of capital inflows is concentrated in the high-value sector. Some inflows even exceed US$500 billion, reflecting the typical characteristics of the "zero interest rate policy" following the crisis: even if the interest rate level is extremely low, it may not lead to capital outflows, but the transfer of global safe-haven capital to the US bond and asset markets has led to a significant increase in capital inflows.

Asset inflows within the middle interest rate range (3%-6%) exhibit wide volatility, ranging from negative values to high positive levels. Their sensitivity to the policy interest rate is even weaker than in the low-interest-rate range. In the high-interest-rate range (7%-9%), there is relatively less fundamental data available. Asset inflows are mostly concentrated in the US$5–150 billion range, and there is no evidence that higher interest rates will significantly inhibit them.

The scatter diagram shows that asset flows are influenced by various factors, with interest rates being just one of them, and the impact of interest rates is relatively limited. Global risk appetite, expected return on assets, macroeconomic trends, and real estate and stock market conditions generally provide a better explanation of asset inflows than policy interest rates. Demand for safe-haven assets in times of crisis or special circumstances that lead to "low interest rates accompanied by high asset inflows". In summary, the correlation between interest rates and asset inflows is a complex, rather than a simple linear relationship.

6. HPI vs Net Capital Inflow (Scatter Diagram)

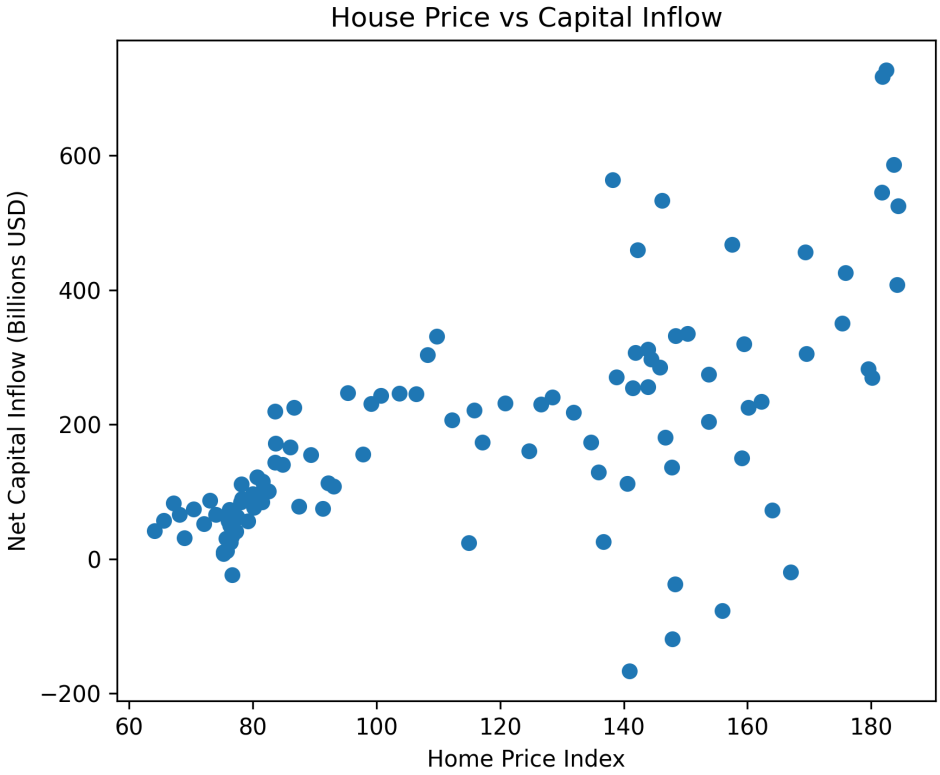

Figure 5. HPI vs Net Capital Inflow (Scatter Diagram)

Figure 5 reveals the cross-sectional correlation between the US HPI and net capital inflows. From the overall distribution, the data points show a clear positive trend: the HPI gradually rises from 60 to 80 to about 180, and the asset inflow scale expands from tens of billions of dollars to 60 billion dollars or more. The distribution pattern shows a significant positive correlation between the cost of American family housing and the inflow of foreign capital.

On the left side of the figure 5, the low house price range (HPI is about 60–90) shows capital inflows are relatively concentrated, mostly in the $0–200 billion range, with little fluctuation. However, as the home price enters the stage of rapid increase (HPI 100-150), the capital inflow shows higher dispersion and significant increase, which indicates that the resource allocation is more inclined to the asset appreciation; When the HPI exceeded 160–180, the corresponding capital inflow of individual regions exceeded 500 billion, showing the effect of "rising cost and rapid inflow of asset expansion".

The unique role of the US real estate market in the global resource allocation system has been highlighted. For international investors, the rise in home prices signals higher returns on assets, reflecting the strong performance of the United States' economy and its financing capabilities during the economic expansion, attracting significant cross-border capital into the real estate finance sector. The formation stage of inflation in the real estate market is usually accompanied by high asset liquidity, as shown in the figure, where high home prices correspond to large-scale capital inflows.

7. Main Empirical Conclusions

7.1 Conclusion

Periodicity and driving factors analysis of net capital inflow: The U.S. net capital inflow has shown significant pro-cyclical fluctuations over nearly 30 years. Its trajectory is highly synchronized with the U.S. macroeconomic cycle, the Fed's interest rate policy adjustments, and the risks in global financial markets. In particular, during periods of economic expansion and rising global risk appetite, the scale of capital inflows is significantly enlarged; in times of economic recession or market panic,

capital outflows or inflows often drop sharply. It shows that the U.S.'s attractiveness as a global "safe harbor" will change dynamically with market sentiment.

The Bubble cycle of the real estate market: The evolution path of HPI in the United States clearly depicts a typical cycle of asset bubble generation, bursting, and recovery. In 2008, before the global financial crisis, HPI rose rapidly, a trend that persisted for nearly two decades and accumulated significant bubble risk. The outbreak of the crisis led to a sharp correction in house prices. Subsequently, due to accommodative monetary policy and market self-recovery, house prices rebounded. This process reflects the inherent fragility of the U.S. real estate market and also implies the possible role of international capital as a "catalyst".

Preliminary study on the correlation between variables: Based on an analysis of key variables, we found a weak negative correlation between interest rates and net capital inflows, with data points scattered widely. It suggested that other factors may mitigate the sensitivity of capital flows to interest rates. In contrast, a clearer and more statistically significant positive correlation exists between HPI and net capital inflows. This empirical evidence supports our hypothesis that "foreign capital tends to chase asset price appreciation gains"—specifically, during periods of real estate market boom, strong expectations of capital gains attract substantial inflows of international capital.

Quantitative verification of OLS regression: To further quantify the above relationship, a simple general least-squares regression model was constructed in this study. The regression results show that net capital inflows are highly sensitive to changes in HPI and are statistically significant. In contrast, the sensitivity coefficient of net capital inflows to changes in interest rates is not only small but also relatively low in significance. The quantitative results provide direct evidence that the primary driver of international capital inflows into the US market during the sample period was the expected increase in asset prices, especially real estate, rather than carry trades.

7.2 Policy Implications

7.2.1 Strengthen the Supervision of Real Estate Financial Stability

To avoid systemic risks from disorderly inflows of transnational capital, regulators need to move beyond conventional micro-management and strengthen the macro-prudential policy framework. The specific measures may include implementing dynamically adjusted thresholds for loan-to-value and debt-to-income ratios, charging a countercyclical capital buffer on housing-related loans of financial institutions, strengthening regulations on the leverage of real estate investment trust funds (REITs), and curbing pro-cyclical fluctuations in the market.

7.2.2 Consider the International Capital Spillover Effect

It reveals that the interest rate is not the only factor of asset liquidity, but this does not mean that the spillover effect can be ignored. In the context of market pressure (e.g., a crisis or a sharp policy turn), changes in interest rates remain the key driver of large-scale movements in hedge funds. Therefore, when formulating monetary policies, the Federal Reserve should have a global perspective, comprehensively assess the external transmission of interest rate adjustments to the global asset flow structure, financial stability in emerging markets, and the US dollar exchange rate, guide market expectations through forward-looking communication and open dialogue, and mitigate unnecessary sharp fluctuations in cross-border assets.

7.2.3 Strengthen Global Financial Coordination

The pro-cyclical nature of asset flows is universal, as it is difficult for any single country to address it effectively on its own. Therefore, it is necessary to strengthen international financial cooperation. International institutions such as the International Monetary Fund and the Financial Stability Board should play a more active role in establishing a monitoring and early warning mechanism for cross-border capital flows, unifying the views of countries on macro-prudential policies, coordinating the financial cycle expansion caused by global risk appetite, and avoiding the "beggar-thy-neighbor" policy.

7.2.4 Focus on Capital Flow Structure

The study found that the influx of assets is concentrated in the virtual economy, such as real estate, rather than in the real economy, where investment is focused on technological innovation and production efficiency. In the long run, asset allocation imbalances will damage the cornerstone of economic growth. Therefore, policy formulation should highlight the flow of capital to high-productive industries, and guide foreign investment in high-tech, infrastructure, and environmental protection industries through incentives such as tax relief and industrial support, so as to achieve a smooth upgrading of the economic structure.

7.3 Limitations

This study draws some valuable conclusions, and there are still some constraints:

(1) Simplification of model setting: This study mainly uses a simple OLS regression model, which is effective in initially exploring the relationship between variables, but may ignore the endogenous problem between variables. For example, capital inflows are affected by house prices, which are also important factors in driving them higher. There may be a causal relationship between the two. In addition, the model may omit important variables, such as the global economic growth rate, the volatility index (VIX), or fiscal policy.

(2) Particularity of sample interval: The sample interval of this research (1986-2014) covers the period of "Great Moderation", the global financial crisis of 2008, and the subsequent era of quantitative easing, which is a special period full of structural changes. Therefore, the research conclusion may reflect the times, and its universality needs to be tested.

(3) Data limitations: The net capital inflow data used in this research are aggregate and do not distinguish between different types and maturities of capital. Different types of capital have different drivers and impacts on the economy. Using more disaggregated data on capital flows will help characterize their structural features more accurately.

(4) Lack of in-depth discussion on nonlinear relations: In practice, relationships between economic variables are often nonlinear. For example, the sensitivity of capital flows to interest rates may differ significantly between low- and high-interest-rate regimes—i.e., a notable threshold effect exists. Similarly, the relationship between house prices and capital inflows may exhibit distinct patterns during bubble-formation and bubble-burst periods. In future research, econometric methods such as the threshold regression model (TRM) and the Markov switching model (MSM) could be employed to identify these nonlinear dynamic characteristics.

The follow-up research could construct a more complex vector autoregressive model or a structural measurement framework that covers a broader set of variables, and extend the sample to the post-epidemic stage to test the reliability of the existing conclusions. In addition, using more refined resources and cutting-edge measurement technology, the mechanism underlying asset flows will be analyzed in greater depth.

References

[1] Helleiner E. Understanding the 2007–2008 global financial crisis: Lessons for scholars of international political economy[J]. Annual review of political science, 2011, 14(1): 67-87.

[2] Poole W. Causes and Consequences of the Financial Crisis of 2007-2009[J]. Harv. JL & Pub. Pol'y, 2010, 33: 421.

[3] Pfeffer J, Leong A. Resource allocations in United Funds: Examination of power and dependence[J]. Social forces, 1977, 55(3): 775-790.

[4] Caporale G M, Gil-Alana L A. Persistence and cycles in the US federal funds rate[J]. International Review of Financial Analysis, 2017, 52: 1-8.

[5] Bollerslev T, Patton A J, Wang W. Daily house price indices: Construction, modeling, and longer-run predictions[J]. Journal of Applied Econometrics, 2016, 31(6): 1005-1025.

[6] Mian A, Sufi A. House price gains and US household spending from 2002 to 2006[R]. National Bureau of Economic Research, 2014.

[7] Bruno V, Shin H S. Capital flows and the risk-taking channel of monetary policy[J]. Journal of monetary economics, 2015, 71: 119-132.