

Empirical Analysis on the Quantitative Conductivity of the U.S. Dollar Index and U.S. External Asset Harvest ——CLRM regression model based on official data from 1973 to 2022

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Abstract: Since 2014, the increasingly strong U.S. dollar has once again attracted world attention. Referring to the cyclical pattern of the U.S. dollar index since 1973, this article conducts an empirical analysis through the quantitative analysis of the U.S. dollar index and the harvest of U.S. external assets to demonstrate the linkage between the two conductive relationship. During the research process, official data from the United States from 1973 to 2022 were cited, and empirical analysis was conducted based on the CLRM regression econometric model. The study found that there is indeed a linkage transmission relationship between the two. After testing, the author has reason to believe that U.S. macroeconomic decision-making agencies, including the Federal Reserve, operate the U.S. dollar exchange rate as expected, making it possible to harvest U.S. foreign assets. Therefore, under the current wave of RMB internationalization in China, the author needs to strengthen foreign exchange risk prevention and not repeat the mistakes of previous countries, so as to promote the development of China economy in a healthy and stable direction and effectively prevent the overseas loss of China state-owned assets.

Keywords: U.S. dollar index; asset harvesting; conductive relationship; expected manipulation; risk prevention

1. Introduction

First, let's give a conceptual explanation. The U.S.'s foreign asset harvesting behavior is commonly known as "sheep shearing." It is the use of the U.S. dollar's own liquidity to obtain unjust gains. The common approach is to first support a certain hotspot area or country with policies and let it develop into investment expectations. Ideally, if the land is hot, the U.S. dollar will first be devalued, and at the same time, the country's currency will appreciate rapidly. Then, the United States will let the country borrow U.S. dollars to continuously import U.S. dollar capital, and the country's economic bubble will become bigger and bigger. When the Federal Reserve believes that the time is ripe for harvesting overseas assets, it will use distorted exchange rate policies to significantly appreciate the dollar when the dollar is already inundated. In this way, the economic bubbles in hot spots will be burst and their solvency will be severely weakened, and in the end had to use the country's state-owned assets to offset the U.S. debt. After the appreciation of the U.S. dollar, it formed a giant pair of scissors to shear

other countries' assets and acquire other countries' important state-owned assets or mineral deposits, thereby maintaining the United States' dominance. As a result, the United States completed its expected harvest of overseas assets.

2. Literature review

In order to better reflect the innovative characteristics of this article on the basis of inheritance, the author systematically sorted out the existing research results on this issue, combined the views of 31 domestic and foreign scholars, conducted a logical literature review, and coordinated planning and development. All parties have laid a theoretical foundation for the subsequent analysis. The research results will be divided into domestic and foreign parts, and each will be sorted out in small points.

2.1 Target countries in a targeted manner

American scholar Evans Turner once mentioned in the article *Econometric analysis of the factors influencing the trend of dollar index* that the United States' overseas asset harvesting is targeted at specific countries.[1] Generally, the United States first supports a certain hotspot region or country with policies. Let it develop into an ideal hot spot for investment. The United States will then let the country borrow U.S. dollars to import a large amount of U.S. dollar capital. The country's economic bubble will inflate bigger and bigger. When the period matures, it will use foreign exchange policies to pop the economic bubble in the hot area, and then repay its debts. The country's ability has been severely weakened, and its state-owned assets have been offset to repay U.S. debt.

2.2 Take advantage of the target country's sovereign debt crisis to harvest overseas assets at extremely cheap prices

Scholars such as Taylor Anderson noticed that in 1998, American multinational companies purchased state-owned assets originally worth US\$5 trillion in Thailand, which was then dying, for US\$1 trillion, forming a large-scale discount acquisition.[2] This mainly took advantage of the target country's economic bubble. After being exposed, due to its low investment efficiency and hindered liquidity, coupled with the serious depreciation of the local currency relative to the US dollar, such a profitable discount acquisition was formed. It is worth noting that these important state-owned assets are in many monopoly industries and cannot be not to mention that this is a sure-profit deal.

2.3 It has the color of shorting the economy of "bubble countries"

Scott Young once used the ARIMA model to explain the United States' short-selling intentions against the target country, and believed that this sniper-type speculative short-selling has great destructive power in looting the wealth of the target country, and has irreversible short-term economic weakness.[3] The outside world has reason to believe that this is For decades, the U.S. government's foreign aggressive macroeconomic policies planned by elites based on U.S. national interests have used exchange rate changes to plunder the assets of countries around the world and maintain their economic hegemony, and this started with the Baker Plan in the last century.

2.4 There is a possibility that the U.S. government and private short-selling institutions will join forces

Scholars such as Jackson J. White once believed that the possibility of an alliance between the U.S. government and private short-selling institutions cannot be ruled out.[4] For example, the time when the United States burst Thailand's economic bubble in 1997 and the time when Soros attacked the Thai baht were surprisingly consistent. To a certain extent, it can be speculated that there may be information sharing and action cooperation between the US government and the business community.[5]

2.5 The weight of systemic risks increases in the process of RMB internationalization

Some studies point out that the RMB has just entered the SDR basket and there will still be uncertainty for a certain period in the future. In addition, the strong US dollar will bring instability to the world financial order. Therefore, the weight of systemic risks in the process of RMB internationalization will increase, and facing the U.S. dollar, whose index has risen by more than 27% since 2014, the RMB is in a weak position and may be aggressively acquired by U.S. multinationals. However, due to China's current foreign exchange control policy, it is unlikely that this method can be manipulated in a conventional way.[6][7]

2.6 China does not have the substantive fundamentals to be “shorn” by the United States

Scholars such as Lang Xianping believe that from the perspective of capital substance, the trade surplus makes the RMB no basis for long-term depreciation, so there is no need to worry too much about financial risks. Moreover, China's capital account is not open, which has a certain firewall function in dealing with systemic risks. Moreover, data from inter-bank institutions show that the net value of foreign-related RMB payments has increased by 2 trillion. Therefore, the demand for RMB settlement is still rising steadily. It can be thought of as follows: RMB The pace of internationalization is proceeding in an orderly manner. However, from the perspective of being prepared for danger in times of peace, it is still very necessary to strengthen capital account control, such as strengthening the investigation of the net value of funds flowing into the free trade zone from foreign provinces and cities, cracking down on underground banks, cracking down on illegal exchanges, and restricting residents from going to Hong Kong to buy assets and transfer them. Insurance and tightening of dual-standard credit cards will reduce the depreciation pressure of the RMB on the current account, reduce the panic of Chinese residents through the stabilization of the currency value, and maintain private financial confidence, because if the RMB continues to depreciate, China will be very passive.

3. Theoretical framework—CLRM econometric model analysis

As mentioned above, international economic phenomena indicate that the Federal Reserve may consciously artificially adjust the U.S. dollar exchange rate index and foreign investment policies, conduct targeted capital outflows, and achieve the purpose of harvesting assets from specific overseas countries through cyclical rises and falls in the U.S. dollar index. [8] The premise of this assumption is that in a stable investment environment for a certain overseas

country's economic policy, there is a positive partial correlation between the U.S. dollar index and the amount of assets acquired by the United States in that country.[9]

Factors affecting the number of assets harvested by the United States from a specific country may include the U.S. dollar index, macro policies, industry profit margins, etc. [10]As mentioned above, the harvest of external assets is guided by targeted investment policies, and the policy environment tends to be stable within a certain period of time, thus excluding the impact of macro policies on the number of asset acquisitions. Since the profit margins of different industries are different, the weight of asset acquisitions will vary accordingly. Since the country to be analyzed in this article has a relatively single industry at this stage, the issue of industry acquisition weight will not be considered for the time being.

Therefore, the author supports the above analysis by analyzing the linear relationship between the U.S. dollar exchange rate index and the asset acquisition ratio of a specific country. The U.S. dollar index is directly quantified using the U.S. dollar exchange rate index over the years. As for the asset acquisition ratio, the author uses the ratio of the amount of capital acquired by the United States to the amount of capital acquired by total overseas capital in the country. Based on the staged U-shaped changes above, the author divided the data into three stages, namely 1973-1985, 1986-2001, and 2002-2022. Argentina, Greece, and Thailand were selected as the three stages of infrastructure construction.

Based on the above analysis, the author assumes the following variables: Let the U.S. dollar exchange rate index over the years be X_i , and let the overseas acquisition capital ratio be Y_i . Through the database, the average value every 30 days is selected as a sample.

$$Y_i = \hat{\beta}_1 + \hat{\beta}_2 X_i + \mu_i \quad (1)$$

Where the random disturbance μ_i satisfy the following assumptions:

(1) Zero mean assumption:

$$E(\mu_i | X_i) = 0 \quad (2)$$

(2) Homoskedasticity assumption:

$$Var(\mu_i | X_i) = \sigma^2 \quad (3)$$

(3) No autocorrelation assumption:

$$Cov(\mu_i, \mu_j) = E(\mu_i | \mu_j) = 0 \quad (i \neq j) \quad (4)$$

(4) The random disturbance term μ_i is not related to X_i :

$$Cov(\mu_i, X_i) = E[\mu_i - E(\mu_i)][X_i - E(X_i)] = 0 \quad (5)$$

(5) Normality assumption:

$$\mu_i \sim N(0, \sigma^2) \quad (6)$$

Based on the assumptions of the above variables, first make the correlation assumption between X_i and Y_i . The overall correlation coefficient ρ can be calculated by the following formula:

$$\rho = \frac{Cov(X,Y)}{\sqrt{Var(X)Var(Y)}} \quad (7)$$

By selecting samples to estimate ρ , we can use:

$$r_{XY} = \frac{n \sum X_i Y_i - \sum X_i \sum Y_i}{\sqrt{n \sum X_i^2 - (\sum X_i)^2} \sqrt{n \sum Y_i^2 - (\sum Y_i)^2}} \quad (8)$$

Judgment based on the results: (1) When the absolute value of r_{XY} is close to 0, it means that the two sets of data X and Y are not correlated; when the absolute value of r_{XY} is close to 1, it means that the two sets of data are correlated. (2) When the value of r_{XY} is greater than 0, the two sets of data are positively correlated; when the value of r_{XY} is less than 0, the two sets of data are negatively correlated. Calculated through Matlab, the sample correlation coefficients of the three sets of data are:

$$r_1 = 0.9089; r_2 = 0.8802; r_3 = 0.9043; \quad (9)$$

It can be considered that the sample data of the selected area has good correlation.

As mentioned above, on the premise that the sample data of the three stages have good correlation, in view of the multiple statistical characteristics and advantages of OLS estimation, this article chooses the ordinary least squares method to estimate parameters. According to the least squares method criterion:

$$\min \sum e_i^2 = \min \sum (Y_i - \hat{Y}_i)^2 \quad (10)$$

Obtained through mathematical transformation:

$$\hat{\beta}_2 = \frac{n \sum X_i Y_i - \sum X_i \sum Y_i}{n \sum X_i^2 - (\sum X_i)^2} \quad (11)$$

$$\hat{\beta}_1 = \bar{Y} - \hat{\beta}_2 \bar{X} \quad (12)$$

Calculated through Matlab software:

The first stage:

$$\begin{aligned} \hat{\beta}_2 &= 0.9907 \\ \hat{\beta}_1 &= 61.6455 \end{aligned} \quad (13)$$

The second stage:

$$\begin{aligned} \hat{\beta}_2 &= 0.7135 \\ \hat{\beta}_1 &= 77.5364 \end{aligned} \quad (14)$$

The third stage:

$$\begin{aligned} \hat{\beta}_2 &= 0.7965 \\ \hat{\beta}_1 &= 74.5855 \end{aligned} \quad (15)$$

The three sets of parameters are brought into the sample data of the three stages respectively. Due to the small sample size, it is considered through the z test that the sample data X has a significant impact on Y.

Through regression analysis of the selected data, it can be considered that in a short time period, that is, in an environment where investment policies are stable, the policy environment does not change, and industry development is relatively simple, the U.S. dollar exchange rate index is partially related to the overseas asset acquisition ratio of a specific country, and is positively correlated. It shows that it is feasible to a certain extent to control the harvest of U.S. capital's external assets by manipulating the U.S. dollar index under the above conditions, and meets the most basic assumptions.

On this basis, through simple comparison, it can be found that there is a difference in the amount of U.S. capital acquisitions of the country during the declining stage and the rising stage of the U-shaped change of the U.S. dollar index in the three periods. That is, the United States has mastered the country through cyclical changes. More assets achieve the effect of asset harvesting to a certain extent. Therefore, there is reason to suspect that the Federal Reserve adjusts the U.S. dollar index in a targeted manner to make profits at the national level.

4 Conclusion

4.1 Research results

4.1.1 The positive correlation between the US dollar exchange rate and the harvest volume of overseas assets

Through empirical analysis of selected samples and based on many assumptions, this article analyzes the linear relationship between the U.S. dollar exchange rate index and the asset harvest volume of specific countries in each stage of the United States, and conducts parameter estimates.

Because the policy factors at different stages change too much, that is, the error exclusion conditions for a stable external investment environment cannot be met, the two sets of data samples at different stages may show a nonlinear relationship. Through the calculation of multi-sample combinations of correlation coefficients and goodness of fit in the early stage, the author at least has reason to believe that the positive correlation between the two assumed variables can satisfy the prerequisite for the U.S. government's expected manipulation of the exchange rate. Through more microeconomic assumptions and statistical analysis, it is not ruled out that the hypothesized variables have more intuitive mathematical connections.

4.1.2 Anticipated possibility of exchange rate manipulation

Based on the conclusion of the positive correlation between the U.S. dollar exchange rate and the amount of assets harvested in a specific country, the author compared the asset acquisition ratios in the declining stage and rising stage of the U-shaped change curve of the U.S. dollar exchange rate index in three time periods. By summing up the points, it can be concluded that during the three time periods described in this article, through the cyclical changes in the exchange rate index, the amount of assets controlled by U.S. capital in the country increased

to varying degrees. In contrast, the country's infrastructure sector industry development and economic development in the following years slowed down significantly. The objective phenomenon shows the possibility that the U.S. government expects to manipulate the exchange rate to achieve the purpose of "sheep-shearing."

For the purpose of expected exchange rate manipulation, at least two basic conditions need to be met. The first is the sensitivity of the Federal Reserve to adjust the U.S. dollar exchange rate index; the second is the information sharing and expansion cooperation between U.S. unofficial capital and the government. That is, the U.S. government effectively and sensitively controls the exchange rate through the Federal Reserve, and at the same time, a relatively large amount of U.S. capital (or a relatively fixed amount of U.S. capital) can cooperate with it to carry out loans and acquisitions. The above-mentioned joint decision-making method, coupled with the objective mathematical positive correlation between the exchange rate and the amount of asset harvest mentioned above, together constitute the linkage mechanism between U.S. monetary policy and capital expansion. It makes it possible for the U.S. government to expect to manipulate the exchange rate to achieve economic benefits.

4.1.3 Characteristics of the target country reflected

The data analysis conducted in this article is based on a large number of human analysis and assumptions. This also reflects the economic characteristics of the target countries identified by the U.S. government. First, the capital of the target country is concentrated in a specific industry during this time period. This article takes three countries with obvious infrastructure construction as examples. That is to say, the country is still in the take-off stage of development, lacks capital investment to improve the industrial structure in the later period, and is in a state of economic development with a single export-oriented or other economic structure that is extremely unbalanced. Secondly, assumptions such as zero variance reflect the target country's stable domestic economic policy (or single economic policy) during this period, indicating that there are no corresponding early warning measures or preventive measures even during the rising stage of the U.S. dollar exchange rate index. Thirdly, by comparing the weighted average of the proportion of U.S. dollar asset holdings in each country, it can reflect the imperfection of the target country's financial system and the single financing channel. Through the above characterization, the country's authorities and the international community can adjust financial mechanisms to avoid the occurrence of similar phenomena.

4.2 Realistic enlightenment

This article conducts an in-depth analysis of the historical events related to the fluctuation of the U.S. dollar index from 1971 to 2106 and an empirical analysis of the CLRM model and concludes: The United States does use the dollar as a sharp tool to allow other countries to be dominated by adjusting the U.S. dollar index. In severe inflation, an economic "hard landing" occurs, investment efficiency and return rates decline, funds are withdrawn in large quantities, and currency depreciation occurs. Correspondingly, the financing environment in the United States can improve and assets can flow back in large quantities. After winning the battle for capital, the United States can once again return to countries waiting to be conquered whose economies have become depressed, harvest their high-quality assets without leaving a trace, and seek physical wealth.

This is in line with the character of Americans. In addition, with the structural monopoly power of the US dollar, Americans can easily use the time difference and speed difference of inflation to realize the transfer of wealth in large-scale capital movements and cut off the abundant wealth of other countries. "wool". After unveiling the "warmth and tenderness" of the United States, China needs to always beware of this "big scissors" falling on itself.

After China joined the WTO in 2003, its domestic market has become more open and integrated with the world. Even small changes in the world economy will affect itself. China's rapid economic development in recent years is partly due to the "quantitative easing" policy implemented by the United States after the 2008 financial crisis. The depreciation of the US dollar has caused a large amount of hot money to flow into emerging developing countries like China. China has gained A large amount of capital has been invested, and the economy is thriving and developing vigorously. The history is surprisingly similar. Emerging countries such as China may be the hot spots that the United States is cultivating in the current round. Therefore, it is necessary to be prepared for risks.

After 2012, the proposal of China's "Belt and Road" strategy; the establishment of the "Asian Infrastructure Investment Bank"; the vigorous development of "Internet +"; and the addition of the RMB to the SDR basket, all indicate that China is trying to get rid of the status quo of being overly dependent on the United States. . China's development model that did not follow the expectations of the United States has shaken the status of the United States' financial hegemony and brought tremendous pressure and challenges to the United States. As China grows stronger, the United States has to speed up the withdrawal of capital, starting from the U.S. dispute over the Diaoyu Islands. From the South China Sea issue to the recent THAAD incident, it can be seen that the United States is doing everything possible to stir up trouble in China, worsen China's investment environment, and guide the return of capital. Its attempt to "shear China's wool" and dampen China's economic vitality It's obvious if it appears. The various actions of the United States in Asia give the author reason to believe that after controlling Latin America, Southeast Asia, and Europe, the United States has now targeted China. The trend of the U.S. dollar index in this round is not clear yet, but from the continuous actions of the Federal Reserve in recent years The announcement of "raising interest rates" shows that the United States still has "bad intentions" and has not given up the U.S. dollar index as a weapon. Therefore, in the next five years, as the largest creditor of the United States, China, although it has played a "good move" before, still cannot take it lightly. In particular, it must firmly control state-owned assets, optimize investment methods, and strengthen its resistance to foreign exchange risks. With his ability, Mo Le was so sad that the wealth accumulated in half a century was robbed. This is the biggest realistic revelation of this article.

4.3 Policy recommendations

Based on the research results of this article and the practical value of the research, combined with the current economic status of China, the following suggestions are made to relevant decision-making agencies, which only represent the academic opinions of this article.

(1) To control the country's external capital account, we have learned from the lessons of the previous target countries, such as Argentina and Thailand, which opened up their finances prematurely when their currencies plunged into crisis, resulting in the loss of state-owned assets at a substantial discount. The author believes that China We cannot be too vigilant in

this aspect of the capital account. Overseas assets such as Hong Kong insurance, which have been relatively popular recently, are to some extent legally regulated to transfer assets overseas. China still has a huge trade surplus, and the RMB, which is determined by fundamentals, has no basis for long-term depreciation. Therefore, controlling the capital account can stabilize the value of the RMB and promote its internationalization, and on the other hand, prevent systemic and non-systematic problems. international financial risks.

(2) Maintain the overall stability of the scale of foreign exchange reserves and promote a rational structure. Although China's current foreign exchange reserves have just fallen below 3 trillion U.S. dollars, the overall level is relatively stable. Foreign exchange reserves will work wonders when faced with short-selling risks, such as the 1997 demand for foreign exchange reserves. It was easy for Ross to short Thailand but failed in Hong Kong. It has to be said that the Hong Kong government's foreign exchange reserves played a vital role. Therefore, there is no doubt that China is currently increasing its emphasis on foreign reserves. In the context of accelerating the internationalization of the RMB, China should also have a trump card.

(3) The State-owned Assets Supervision and Administration Commission strengthens supervision of the loss of state-owned assets, especially overseas losses, and prevents overseas speculative hot money from attacking important domestic industries through Sino-foreign joint ventures and other forms. This also requires agencies such as the National Development and Reform Commission and the Administration for Industry and Commerce to draw a clear line between industry access boundaries and Reasonable and standardized mechanism for capital operation. What is more important is to control the scale of overseas debt. Of course, China is currently not a net sovereign debtor, and its overall asset status is relatively light from the perspective of external balance and payment settlement.

(4) Implement supply-side reforms, tap into domestic demand, carry out high-quality and steady economic growth, and focus on controlling the risk of asset bubbles. China has passed a period of rapid economic growth and is now in a period of shifting growth. Particular attention must be paid to bubble problems in some industries (such as Real estate, etc.), because the examples mentioned above have shown that the target areas for short-selling speculation often have considerable bubble scale and cash-out profit expectations.

The above is the author's thinking based on real economic significance and value. I hope that China can effectively prevent international financial risks and ensure the safety and stability of state-owned assets to promote sustained and healthy economic growth.

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