

The Influencing Factors and Forecast of the Philippine Peso Exchange Rate

Chiba Naoto

Nihon University, Shizuoka-ken, mishima City, Omiya-tyou 1-10-28, 206 room, JAPAN

Abstract. Based on theoretical models such as purchasing power parity and interest rate parity, this paper analyzes the factors affecting the exchange rate of the Philippine peso from the aspects of inflation, balance of payments, and interest rates. According to the forecast of exchange rate changes, it is concluded that the peso will continue to depreciate in the short term in the future.

Keywords: Philippines; Purchasing power parity; Interest rate parity.

1. Reasons for Philippine Peso Exchange Rate Fluctuations



Figure 1. Philippine Peso Exchange Rate Chart

Data Sources: Philippine Peso - 2022 Data - 1997-2021 Historical - 2023 Forecast - Quote - Chart (tradingeconomics.com)

As shown in Figure 1, the Philippine peso exchange rate has rapidly depreciated since the global financial crisis in 2007 but has gradually appreciated since then. From 2013 to 2019, the peso continued to depreciate for five years, and then briefly appreciated. The depreciation trend has continued since April 2021.

The exchange rate fluctuation of the Philippine peso is related to the supply and demand of the Philippine peso. The specific factors that affect the exchange rate fluctuation of the Philippine peso include money supply (M2), inflation, international payments, interest rates, fiscal policies, and macro-political and economic situations.

(1) According to the theory of absolute purchasing power parity, the size of purchasing power is reflected by the price level (CF Lee, 2006). When domestic prices continue to rise, it is easy to cause inflation, which means that the devaluation of the domestic currency relative to foreign currencies will reduce the purchasing power of the peso, thereby depreciating its currency. As shown in Figure 2, the CPI price index of the Philippines was generally higher than that of the United States from 2008 to 2020, which brought greater pressure on the depreciation of the peso.

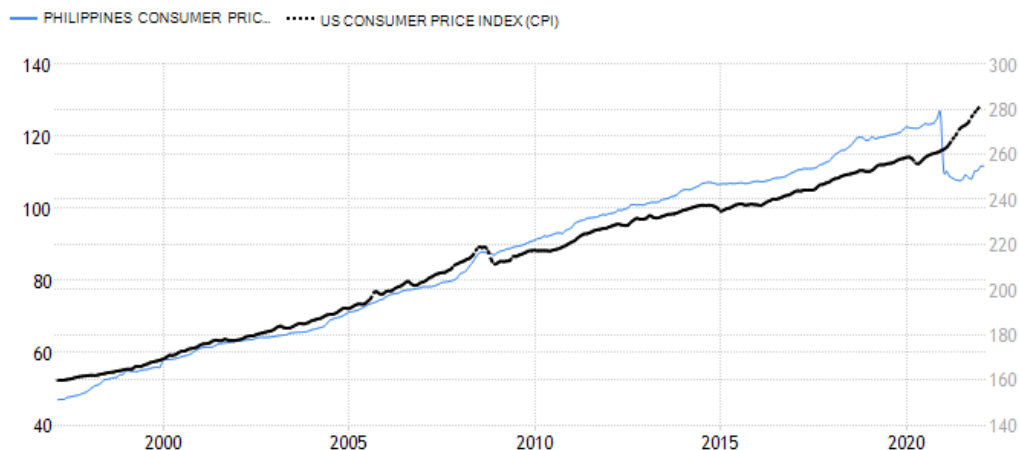


Figure 2. Philippine and US CPI Charts

Data Sources: Philippines Consumer Price Index (CPI) - February 2022 Data - 1957-2021 Historical (tradingeconomics.com)

(2) Exchange rate changes will be affected by monetary policy and fiscal policy. When a country's money supply continues to rise, the government budget often shows a deficit, and fiscal expenditure grows rapidly, which easily leads to the devaluation of the country's currency (Berman, 2014). As shown in Figure 3, since 2018, the Philippine government's budget has generally shown a deficit, and the scale of the deficit has tended to expand, increasing the pressure on the depreciation of the peso.

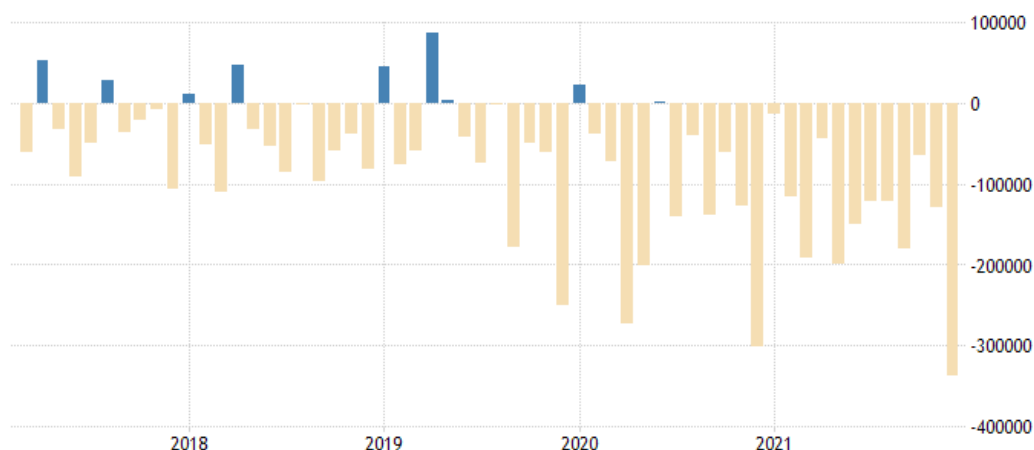


Figure 3. Philippine government budget

Data Sources: Philippines Government Budget Value - February 2022 Data - 1959-2021 Historical (tradingeconomics.com)

(3) Affected by the international political and economic situation, a good economic growth situation and a stable surrounding regional environment are conducive to the stability of the currency value, while the economic crisis and turbulent regional situation are likely to exacerbate the ups and downs of the currency value (Shapiro, 2012). For example, the Asian financial crisis in 1998 and the global financial crisis in 2007 caused the Philippine peso to depreciate sharply (Ito, 2006). In 2012, the territorial dispute between China and the Philippines over the Huangyan Island caused regional tensions and caused the peso to fluctuate greatly. Since 2021, wars such as Russia and Ukraine have exacerbated the crisis, causing international capital to flow to safe assets, leading to a certain depreciation of the peso.

(4) According to the balance of payments theory, the balance of payments formula: Financial Account + Current Account = 0,

When a trade surplus forms a balance of payments surplus, which leads to an appreciation of the local currency, while the trade deficit increases, a country's imports of goods and services will

increase, resulting in a trade deficit(Sasaki,2005). If this happens, the country will have excess demand for foreign currency, which will cause the exchange rate of the country's currency to rise in the foreign exchange market, causing the local currency to depreciate. Since 2021, due to the impact of Covid-19, international trade has been greatly impacted, and at the same time, global consumer demand has weakened, which has limited exports, and the Philippines has shown a deficit in the balance of payments (Figure 4), leading to capital outflows, which led to the peso depreciation.

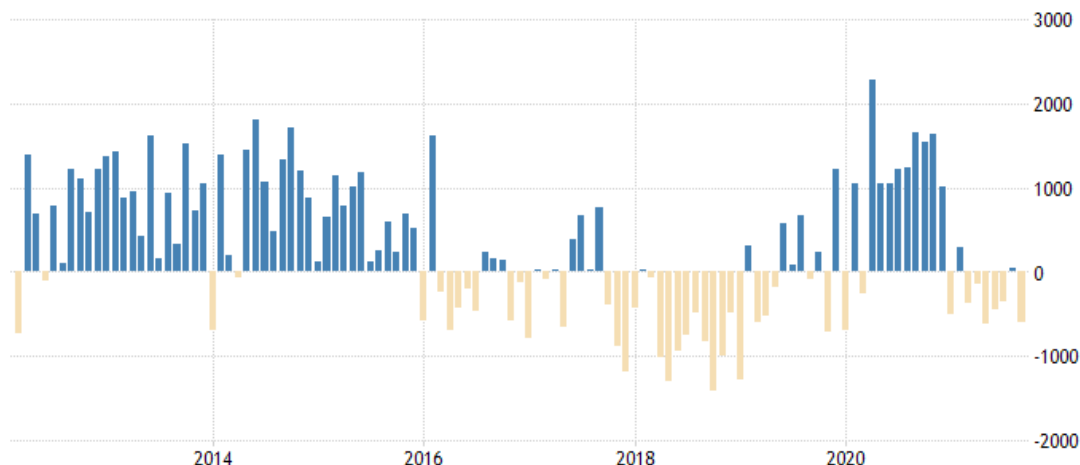


Figure 4. Philippine Current Account Movements

Data Sources: Philippines Current Account - February 2022 Data - 1980-2021 Historical
(tradingeconomics.com)

(5) According to the interest rate parity theory, the current exchange rate is determined by the expectation of the future exchange rate and the corresponding risk-free interest rates of the two countries. Higher interest rates make the value of a country's currency more attractive to foreign investors, which in turn affects the exchange rate(Siok,2008). Since 2008, in order to cope with the huge impact of the financial crisis on the economy and promote the recovery and development of the economy, countries have generally adopted quantitative easing policies, and benchmark interest rates have been continuously lowered, resulting in a certain degree of depreciation in the value of the peso after 2008.

2. The history of the peso

The peso is a unit of currency mainly used in former Spanish colonial countries. The Philippine peso is the legal tender of the Philippines. The Philippine peso is one of the countries in the world that was colonized by Spain and used the peso as its currency. Other countries that use the peso include Mexico, Colombia, Argentina, and others.

The sixth set of Philippine pesos issued on December 16, 2010 is currently used in the Philippines. There are 16 denominations in total. The smallest is 1 point (1 peso = 100 points) and the largest is 1,000 pesos. In 2012, the series was 50 pesos The banknotes were reprinted.

3. The exchange rate of the peso is affected by changes in the domestic exchange rate

3.1 The level of interest rates will affect the attractiveness of a country's financial assets

Since capital is mobile and the existence of interest rate parity theory, higher interest rates will absorb capital inflows. When a country raises interest rates, it will make international capital inflows and increase The demand for the domestic currency causes the currency to appreciate(Abarca,2011). Figure 5 reflects the interest rate changes in the United States and the Philippines in recent years. As

the Federal Reserve gradually changed its quantitative easing policy and continued to raise interest rates after 2016, international capital flowed into the United States for the allocation of various US dollar assets, resulting in the continuous depreciation of the Philippine peso. In March 2021, the Fed's interest rate hike meeting is about to be held, and it will continue to tighten monetary policy, which will put pressure on the peso to further depreciate.

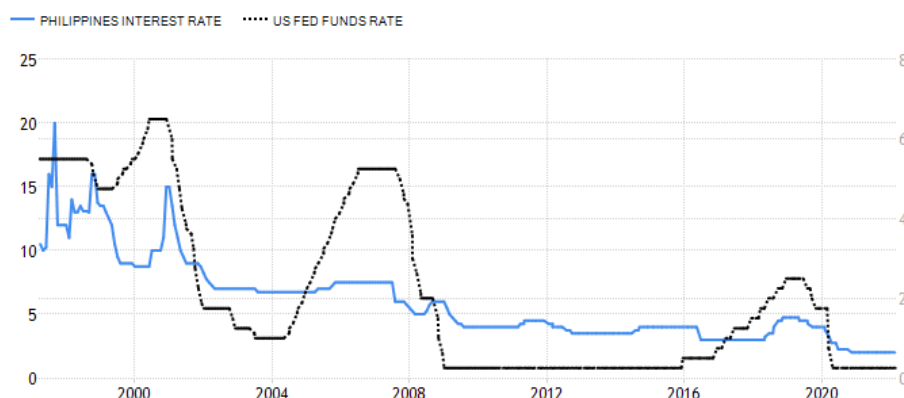


Figure 5. Philippine and US interest rate chart

Data Sources: Philippines Interest Rate - 2022 Data - 1985-2021 Historical - 2023 Forecast (tradingeconomics.com)

3.2 The impact of inflation on the exchange rate

When inflation occurs in the country, the value represented by the domestic currency decreases, the actual purchase volume decreases, and the price of foreign currency falls (Almanza, 2014). In 2022, due to the influence of the war situation in Russia and Ukraine, the prices of crops, oil and natural gas in the world will continue to rise, and inflationary pressures faced by countries will increase, which will bring greater pressure to the stability of currency values. Figure 6 reflects the changes in the core inflation rate of the United States and the Philippines. The inflation rate of the Philippines is generally higher than that of the United States, and the pressure on the depreciation of the peso is greater. However, after 2021, the inflation rate of the United States will rise rapidly and be significantly higher than that of the Philippines. The peso has appreciated

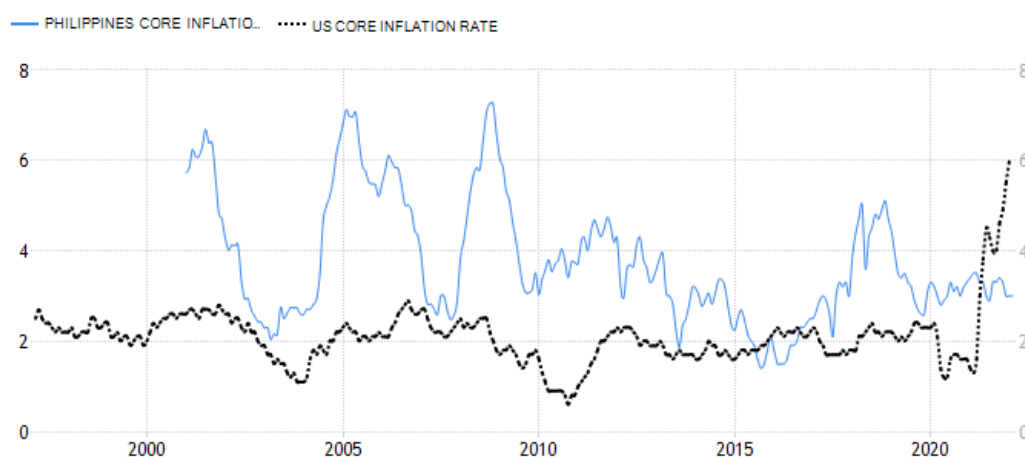


Figure 6. Philippine and US Inflation Rate Chart

Data Sources: Philippines Core Inflation Rate - February 2022 Data - 2001-2021 Historical (tradingeconomics.com)

3.3 The influence of money supply on the exchange rate

According to the Fisher equation $M=PT/V=PT/V$, where M represents the money supply, P represents the price level, V represents the velocity of money circulation, and T represents the number

of commodity transactions. Therefore, when the velocity of money circulation and the number of commodity transactions remain unchanged, the increase in the money supply M will inevitably lead to an increase in the price P , which will be transmitted to the exchange rate change through the theory of purchasing power parity (Yu, 2016). Figure 7 reflects the changes in the money supply (M2) of the United States and the Philippines. Since 2020, in response to the adverse impact of Covid-19 on the economic situation, the M2 growth of the United States has been faster than that of the Philippines, which will make the peso appreciate to some extent.

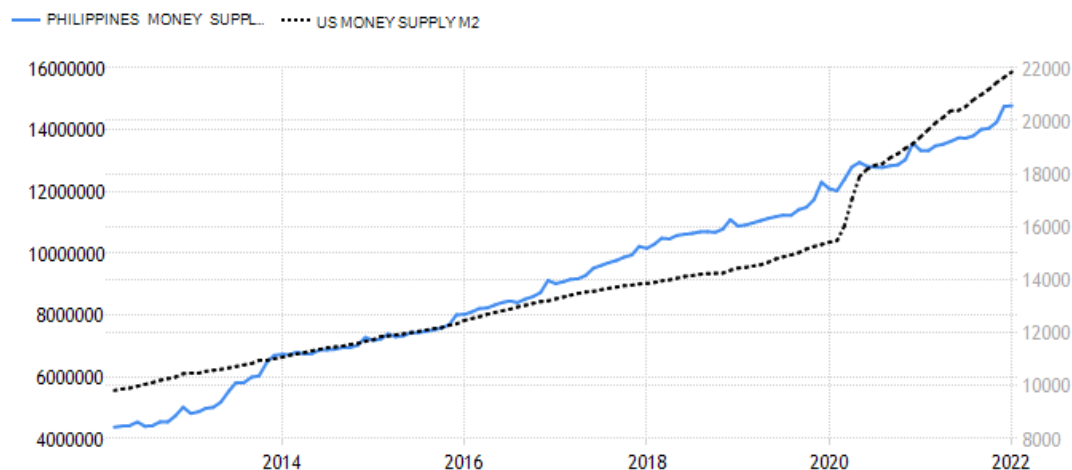


Figure 7. Philippine and US M2 Trends

Data Sources: Philippines Money Supply M2 - February 2022 Data - 1980-2021 Historical (tradingeconomics.com)

4. Predict the future price of peso

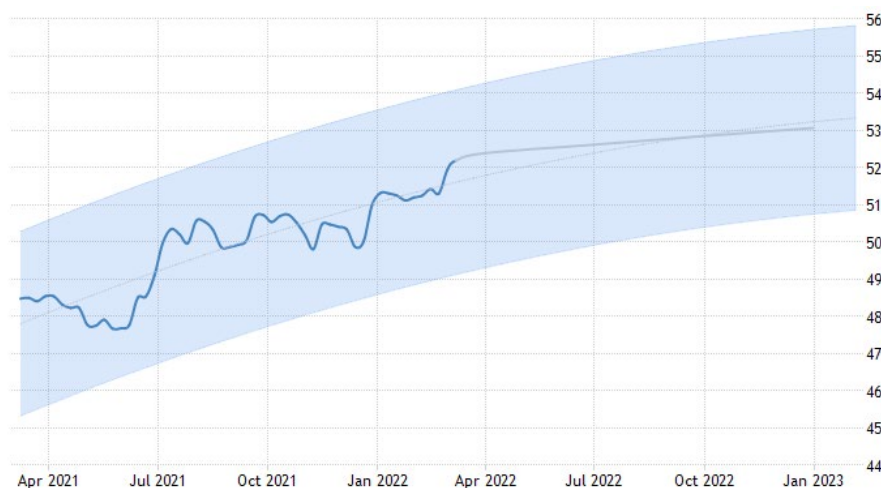


Figure 8. Philippine Peso Exchange Rate Changes and Forecasts

5. Conclusion

Since April 2021, the exchange rate of the Philippine peso has shown an upward trend of volatility, and the exchange rate has generally been depreciating. Therefore, in the short term, we expect the exchange rate of the Philippine peso to continue this trend and fall further

6. Reason

6.1 Macro-political and economic situation

Under the international macro-political and economic situation, in the short term, due to the ongoing war between Russia and Ukraine, and the unstable situation in the region, international capital will invest in safe-haven assets, and the US dollar, as an international currency, will inevitably attract international capital inflows, making The dollar appreciates and the Philippine peso depreciates. On the other hand, the expectation of the Fed raising interest rates in March is constantly approaching. Once the US dollar interest rate rises, it will further lead to international capital inflows, which will depreciate the peso.

6.2 Econometric regression analysis

By using the method of econometrics, we analyze the time series of changes in the peso exchange rate, and perform regression fitting on the relationship between the peso exchange rate and time since April 2021(Economics,2020). As shown in Figure 9, the slope of the regression line is positive and slopes upward. It shows that as time progresses, the exchange rate of the peso will continue to rise, that is, the exchange rate of the peso will further depreciate.



Figure 9. Regression Fit of Peso Rate vs. Time

To sum up, the stability of the future currency value of the peso is closely related to the regional conflict situation in Russia and Ukraine and the Fed's interest rate hike and other influencing factors. The continuous depreciation trend in the past year and the recent international political and economic situation have intensified the pressure on the peso to depreciate in the coming period.

References

- [1] CF Lee, & Lee, A. C. (2006). Absolute Purchasing Power Parity. Springer US.
- [2] Berman, N., Martin, P., & Mayer, T. (2014). How do different exporters react to exchange rate changes? theory, empirics and aggregate implications. *Social Science Electronic Publishing*, 127(1), 437-492.
- [3] AC Shapiro. (2012). Exchange rate changes, inflation, and the value of the multinational corporation. *The Journal of Finance*.
- [4] Ito, T., & Sato, K. (2006). Exchange rate changes and inflation in post-crisis asian economies: var analysis of the exchange rate pass-through. *NBER Working Papers*.
- [5] Sasaki, Y. N. (2005). Pass-through of exchange rates on import prices in east asian countries. *papers & proceedings of economics*.
- [6] Siok, Kun, Sek, Zhanna, & Kapsalyamova.(2008). Pass-through of exchange rate into domestic prices: the case of four east-asian countries. *International Journal of Economic Policy Studies*, 3(1), 45-72.

- [7] Abarca, G., Rangel, J. G., & Benavides, G. (2011). Exchange rate market expectations and central bank policy: the case of the Philippines peso-US dollar from 2005-2009. *Working Papers*, 19(4), 70-90.
- [8] Almanza, R. M., & J Guillén. (2014). A model of medium-term exchange rate forecast in an open economy the case of the Philippines peso. *Contaduría y Administración*, 59(2), 197-225.
- [9] Economics, I. (2020). Philippines peso-USD exchange rate: A switching linear dynamical model application.
- [10] Yu, J. C. (2016). Forecasting the Peso-Dollar Exchange Rate: Structural versus Time Series Model.