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China's Currency Exchange System: A Study and Debate

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Abstract

Despite the Yuan's growing significance in international money and finance, China's managed-float exchange rate system has raised concerns among many of its trade partners. Many economists and politicians have accused China of manipulating the Yuan in order to acquire unfair economic advantages and have cited the Yuan's appreciation as a crucial component of attaining a trade balance. Due to this, the US Congress labelled China a "currency manipulator" and occasionally introduces legislation that would bring about retaliatory measures. However, such an accusation undermines the complexity of the governance of the Yuan and that the value of the Yuan is not the main culprit of the US's trade deficit with China. This paper examines China's managed-float exchange rate system and offers a variety of theoretical and empirical data to support the unfounded claims surrounding the currency manipulation of the Yuan.

Keywords: Yuan, Managed-float exchange rate system, Currency manipulation

I. Introduction

Currency exchange rates play a critical role in international money and finance because they affect a country's balance of payment and the value of foreign investments. China's managed float system in recent years has been a subject of much discussion, with critics accusing the country of manipulating its currency, the Yuan, for an unfair competitive advantage. With China's emergence as the world's second-largest economy, the ramifications of this debate are considerable in the international political economy. For example, the accusation of currency manipulation could exacerbate the already deteriorating US-China diplomatic relations and trade tensions that would harm international businesses, investors and consumers. This essay looks into China's exchange rate system s and evaluates the validity of the *currency manipulation* argument, which asserts that China intentionally manipulates the Yuan to acquire an unfair trade advantage and contribute to the US's trade deficit with China. Specifically, I argue that while this argument aligns with the conventional political discourse, the issue of China's exchange rate system is much more complex than it appears. The first section of the essay contextualises the opposing sides of the arguments in the scholarship about China's exchange rate system. It will then delve into the history of the Yuan and the exchange rate misalignment raised by the *currency manipulation* argument. The essay's final section will tie together the various theoretical and

empirical strands to test the *currency manipulation* argument.

2. A review of arguments:

China's managed-float exchange rate system has been a major source of controversy, particularly with the United States (US), which accused the Chinese government of manipulating the Yuan to gain unfair trade advantages. Its critics, including former US president Donald Trump, argued that China artificially devalues the Yuan to make exports measured in US dollars less expensive and imports measured in Yuan more expensive thereby contributing to the significant US trade deficits with China.[1] For instance, critics suggest that the current exchange rate of 1 USD to 7 Yuan is 35% above the equilibrium market rate of 1 USD to 4.55 Yuan if the Yuan were under a free-floating exchange rate system. Hypothetically, a 700 Yuan product imported from China to the US would cost 100 USD at the current exchange rate, which is significantly less than the price of 153.85 USD that critics estimate would be paid if the exchange rates were determined by a free-float system .

An artificially devalued Yuan increases the competitiveness of Chinese goods and services and encourages US direct foreign investment in China.This pricing effect can then influence the volume effect: since China exports are less expensive, the amount of exports will rise, and since American imports are more expensive, the amount of imports will decline.[2] As a result, a devalued Yuan versus the dollar significantly contributes to the substantial US current account trade deficits with China. The political fallout of China's managed float system has also led to repeated accusations from the US Congress of China practising mercantilism from the US Congress, culminating in the trade war under the Trump administration.[3]

Despite pressure and criticism from the US about its exchange rate system, China has consistently resisted such calls. The Chinese government has cited concerns over economic sovereignty and the need to advance national development and foster economic stability as justifications for maintaining the managed float system. Thus, in the short term, China appears very reluctant to implement measures that would upset the economy, resulting in mass unemployment and adverse political repercussions.[4] Chinese officials further emphasised that their managed-float system is not designed to encourage export performance deliberately. In 2019, Governor Yi Gang of the People's Bank of China stated that China would "not use the exchange rate for competitive purposes and not use the exchange rate as a tool to deal with external disturbances such as trade disputes".[5] Instead, the government has reaffirmed its commitment to a system of market-

[1] Daniel C.K. Chow, William McGuire, and Ian Sheldon, "A Legal and Economic Critique of President Trump's China Trade Policies," 207.

[2] Yongqing Wang, "Effects of exchange rate and income on the US bilateral trade with China under Chinese managed floating exchange rate system," 237.

[3] Swanson, Ana, "The U.S. Labelled China a Currency Manipulator. Here's What It Means," 2019

[4] Hani Albasoos and Hanan Al-Hadhrami, "China-U.S. Currency Conflict: The Economic and Legal Implications," 40.

[5] Reeves, Scott, "Labelling yuan seen as not succeeding," China Daily, 8 Aug, 2019,

determined exchange rates, with any long-term currency policy changes to be implemented gradually. These positions have been supported by the International Monetary Fund, which has found that China's Yuan is not significantly over or undervalued.[6] Finally, from a legal perspective, Mercurio and Leung have concluded that China's exchange system is in compliance with relevant provisions of the IMF Articles and the World Trade Organization.[7]

3. Exchange rate systems and the Yuan's historical path:

Depending on the level of government control, exchange rate systems can be classified into four categories: fixed, pegged, managed-float and free-floating. In a fixed exchange rate system, the government or central bank sets the value of a currency and keeps it constant or within a narrow range.[8] In a pegged exchange rate system, a currency is tied to another foreign currency or a basket of foreign currencies and fluctuates accordingly. A managed float system, as China adopted, allows its currency to fluctuate based on supply and demand market conditions, but with government intervention to prevent significant fluctuations. Finally, under a free-floating system, the exchange rates between currencies are determined entirely by market forces of supply and demand, without any external intervention.[9] To illustrate, when Country A exports to Country B, Country B purchases Country A's currency, leading to the appreciation of Country A's currency and depreciation of Country B's currency, assuming other economic factors remain constant. Countries with their own currencies can adopt one of these four exchange rate systems to determine how their currency's exchange rate is maintained in the foreign exchange market.

Over the past decades, China has undergone a process of economic reform and adjustment in its exchange rate system for the Yuan. Initially, from 1994 to 2005, China operated a pegged exchange rate system, where the Yuan was fixed at a rate of 1 USD to 8.28 Yuan.[10] However, in 2005, China introduced greater flexibility to its currency system by allowing the Yuan to be managed against a basket of international currencies instead of solely the US dollar. This change was prompted partly by China's accession to the World Trade Organization (WTO) at the end of 2001 and international pressure highlighted by the *currency manipulation* argument.[11] Under the new managed float system, the Yuan's value fluctuates based on market supply and demand, with a daily restriction of 0.5% and

[6] James Daniel and Ting Yan, "Transcript of Press Call on the Publication of the 2019 China Article IV Staff Report," (13 Aug, 2019)

[7] Bryan Mercurio and Celine Sze Ning Leung, "Is China a "Currency Manipulator": The Legitimacy of China's Exchange Regime Under the Current International Legal Framework," 1275.

[8] Jeff Madura and Roland Fox, "Exchange rate history and the role of governments," in International Financial Management, 213.

[9] Ibid 218.

[10] Yongqing Wang, "Effects of exchange rate and income on the US bilateral trade with China under Chinese managed floating exchange rate system," 237.

[11] Yichen Gao, Li Gano and Qi Li, "Chinese trade price and Yuan's valuation," 2215.

government interventions to set exchange rates.[12] Consequently, the Yuan has appreciated against the US dollar and gained international recognition as a major international currency since it was included in the basket of IMF's special drawing rights in 2016.[13] Up until now, China maintains its managed float system by setting the midpoint for the value of the USD and allowing a 2% daily fluctuation.[14] As of March 2023, the exchange rate stands at 1 USD to 6.88 Yuan,[15] representing a 15.76% appreciation since the adoption of the managed float system in 2005. Yet, despite the appreciation of the Yuan coupled with China's gradual process of systematic reform, critics contend that the Yuan is still undervalued and misaligned due to the Chinese government's intervention in the managed float system, and could have appreciated further under a free float system.

4. Misalignment and Equilibrium:

The misalignment argument assumes that there is a currency exchange equilibrium under the condition of market supply and demand, and this equilibrium would balance the country's current account.[16] It raises the question: what would be the Yuan's exchange rate with the US dollar and other major world currencies if China allowed its currency to float freely in the foreign exchange market? Empirical studies on the misalignment and undervaluation of the Yuan differ significantly, and researchers have no consensus on whether the Yuan is overvalued or devalued. According to various equilibrium exchange rate models, the undervaluation of the Yuan can range from 0–60% depending on the time period and methodologies employed. The Big Mac Index found that the Yuan was 58% undervalued, while the Starbucks Tall Latte Index concluded that the Yuan was only 1% undervalued in 2004 based on the same Purchasing Power Parity (PPP) model, which contends that relative exchange rates of two currencies should adjust to reflect differences in the prices of goods and services.[17] The PPP model is not without its limitations. It fundamentally presumes that the US dollar is equal to the market rate and that it overlooks the simultaneous effects of changing relative interest rates, inflation, income levels, and other economic factors on exchange rates.

Another model employed by analysts is the Fundamental Equilibrium Exchange Rate (FEER), which is the exchange rate at which a country's trade balance is in equilibrium based on economic factors, including productivity, trade, savings, and investment rates.[18] Rossi calculated that the exchange rate of the Yuan was nearly in equilibrium

[12] Hani Albasoos and Hanan Al-Hadhrami, "China-U.S. Currency Conflict: The Economic and Legal Implications," 41.
[13] Xiuping Hua, Wei Huang and Ying Jiang, "Controlled Currency Regime and Pricing of Exchange Rate Risk: Evidence From China," 41.
[14] Ibid, 43.
[15] Forbes, "1 USD To CNY," accessed on 12 March 2023 at Forbes Advisor
[16] Isabella Weber and Anwar Shaikh, "The U.S.- China trade imbalance and the theory of free trade: debunking the currency manipulation argument," 439.
[17] Diliip Das, "The evolution of renminbi yuan and the protracted debate on its undervaluation: An integrated review," 574.
[18] Vanessa Rossi, "Is Revaluation of the renminbi good news?" 29.

between 2000 and 2001 using the FEER model, but that the Yuan was undervalued by 5.5 to 7% against the US dollar in 2010.[19] In comparison, Coudert and Couharde found that the Yuan was undervalued by 23% using the same model. They did, however, point out that the estimates of the Yuan undervaluation would have decreased if they had taken into account unemployment in China.[20] In their research, Gao, Gan and Li revealed that China's pegged exchange rate system that started in 1994 resulted in an undervaluation of the Yuan by 2.62%, which was further exacerbated by the country's accession to the WTO, causing an undervaluation of 36.6%.[21] However, the undervaluation was reduced to 0.76% in 2005 after the managed float exchange rate system was implemented, and in 2010 it was discovered that the Yuan was 14.4% overvalued.[22] Finally, Giannellis and Koukouritakis came to the conclusion that the exchange rate of the Yuan was close to its equilibrium rate and that there is no evidence that the Yuan is significantly misaligned.[23]

5. *Currency Manipulation*? – A Debate

As discussed above, critics' arguments surrounding currency manipulation suggest that China deliberately controls the exchange rate of the Yuan in order to make its exports more competitive and thus generate a trade surplus. However, things appear more convoluted when one examines the factors and rationales behind China's adoption of a managed float system. During the early stage of its domestic economic development since the 1990s, a managed float system allowed China to assert its influence on the exchange rate of the Yuan in order to promote its export performance. The risk of instability at its early development stage was particularly pronounced. Therefore, in order to prevent inflationary pressures, preserving internal and external macroeconomic stability necessitated controlling its currency rate.[24] According to the data between 2001 and 2005, China's current account surplus increased by 5.8% of GDP, or by 11%, at the same time as the Yuan's devaluation.[25] These findings, along with China's domestic economic factors, seem to validate critics' claims that China's currency devaluation causes a larger trade deficit for the US in its trade with China as well as a higher trade surplus with the US.

However, China's adoption of the managed float system is a legitimate exercise of its economic sovereignty. The country's primary aim was to ensure stable economic development and to prevent external pressure from encroaching on this goal or triggering negative political consequences. Chinese officials have insisted that neither

[19] Ibid, 29.
[20] Diliip Das, "The evolution of renminbi yuan and the protracted debate on its undervaluation: An integrated review," 576.
[21] Yichen Gao, Li Gano and Qi Li, "Chinese trade price and Yuan's valuation," 2241.
[22] Ibid, 2241.
[23] Nikolaos Giannellis and Minoas Koukouritakis, "Currency Misalignments in the BRICS Countries: Fixed Vs. Floating Exchange Rates," 1145.
[24] Ana Cardoso and António Portugal Duarte, "The impact of Chinese exchange policy on foreign trade with the European Union," 874.
[25] Daniel C.K. Chow, William McGuire, and Ian Sheldon, "A Legal and Economic Critique of President Trump's China Trade Policies," 221.

their export objectives nor their desire to increase export competitiveness has any bearing on their currency policy. According to former Chinese Premier Wen Jiabao, a rapid revaluation of the Yuan could result in social unrest, bankruptcy and harmful consequences for the world.[26] Additionally, they have highlighted factors such as environmental compliance costs, input resource costs, and borrowing costs in China that hold greater significance for China's export competitiveness than influencing the exchange rate of the Yuan.[27] Consequently, a devalued Yuan in relation to the US dollar is not considered to be of much value to China at present. Besides, China is wary of switching to a free-floating system because of concern that it will not become something like a "second Japan," which suffered from a 20-year depression and economic stagnation following the Plaza Accord in 1985, under which the US forced the Japanese Yen to appreciate.[28]

Although a weaker Yuan may make Chinese exports more competitive in global markets, China has a more strategic geopolitical agenda for its currency than the oversimplified *currency manipulation* argument. China is adamant about making the Yuan a global currency, which would rely heavily on credibility on a global scale. This is consistent with China's desire to participate more actively in global politics and the international political economy. China's commitment to strengthening the credibility of the Yuan was evident as early as the Asian financial and currency crisis of 1997-1998. Instead of devaluing its currency, China adhered to its US dollar peg, which helped create favourable conditions for other Asian countries to recover from the crisis.[29] China subsequently earned international acclaim for its responsibility from other countries and the commendation of international investors.[30] In recent years, the Yuan has rapidly expanded internationally after becoming the IMF's global reserve currency.[31] Hence, it seems contradictory that the implementation of the managed float system focuses entirely on improving export performance while jeopardizing its international credibility and the development of the Yuan internationalization. Nevertheless, after a protracted period of economic reform and adaptation, China has made significant progress toward achieving a more market-oriented exchange rate to this day. Therefore, any assessment of the Yuan's value at a given time must account for the substantial policy transformations that have occurred in China.

Suppose the *currency manipulation* argument, which says that China controls its exchange rate in order to create a trade surplus, holds truth; then why do other developing countries not merely devalue their currencies to increase export competitiveness and reduce trade deficits? The

[26] Imad Moosa and Kelly Burns, "Do the Chinese Exchange Rate and Trade Policies Violate International Rules?" 54.
[27] Daniel H. Rosen, "Is the Renminbi undervalued or overvalued?"
[28] Wei Liu and Libing Deng, "Who is the Exchange Rate Manipulator: China or America?" 352.
[29] Ibid, 349.
[30] Diliip Das, "The evolution of renminbi yuan and the protracted debate on its undervaluation: An integrated review," 573.
[31] Yichen Gao, Li Gano and Qi Li, "Chinese trade price and Yuan's valuation," 2215.

Mexican Peso serves as an example of this (as seen in Table 1). Although the Mexican Peso had depreciated by over 45 per cent against the USD from 2005 to 2015, this did not result in a balance of the US-Mexico trade deficit in the US current account. The currency manipulation argument, which contends that the depreciation of country A's currency would increase its exports and result in a trade surplus, is in conflict with this finding. In comparison, the relationship between the USD-Yuan exchange rate and the US-China trade deficit is strikingly different. Despite a nearly 24 per cent appreciation of the Yuan against the US dollar over the same period, the US-China trade deficit widened considerably. This contradicts the perspective advocated by critics who suggest that a consistent appreciation of the Yuan should reduce China's current account balance; however, empirical data has not supported this hypothesis. Therefore, the exchange rate has a relatively small effect on the magnitude of the US trade deficit with China, and the appreciation of the Yuan cannot be assumed to be the main cause of the enormous trade deficit. An empirical examination of the relationship between exchange rates and trade deficits thus disproves the arguments made by currency manipulation.

The question arises: if the exchange rate may be disregarded as the primary cause of the ongoing trade deficit between the US and China, then what other factors are influencing this result? The first reason that might provide an answer to this question is China's highly developed manufacturing infrastructure, which enables it to produce many consumer goods more cheaply than other countries. With its huge size of population and considerable industrial capabilities, China has a comparative advantage in exporting labour-intensive goods since it can manufacture goods on a big scale, which leads to lower costs. In addition to relatively low labour costs, it further incentivizes firms to manufacture their products in China rather than producing them in the US. Low prices also attract buyers to purchase, particularly those in the US, who then drive up demand for Chinese goods. As a result, the US imports more goods from China due to the market condition of demand and supply, contributing to a trade deficit.

The currency manipulation argument also undermines the relationship between the relative income levels in the US and China when analysing the trade deficit between the two countries. Theoretically, a weaker Yuan is a disadvantage to the US market because it makes American exports to China more expensive and reduces Chinese consumers' purchasing power. This contributes to a low level of import by the Chinese market while increasing the exports from China because goods are cheaper with the Yuan being weak. However, China's relatively lower income level must also be considered when compared to the US. Chinese demand for more expensive US goods is lower not only due to a weak Yuan but also the country's comparatively lower income level. According to the World Bank, China's GDP per capita was 12,556 USD, compared to 70,248 USD in the US in 2021. Lower demand for more expensive American goods and services does not help to balance the trade deficits.

Finally, China's exports to the United States are overcounted. Due to its reliance on imported inputs, materials, and components, China's export-oriented economy serves as a production platform. A large portion of these imports come from US companies that export their raw components to China for inexpensive assembly. They are regarded as imports once they are delivered back to the US. Since foreign-owned businesses create more than half of China's exports, any advantage China gains from having cheaper exports is shared with international businesses.[32] For instance, the factory cost of an iPhone when it enters the US is reported as an import and is added to the US-China trade deficit. However, most iPhone materials, like the touchscreen display and memory chips, are supplied from countries like the US, Japan, and Taiwan and assembled inside China as part of a global supply chain.[33] According to calculations by Dedrick et al., China only receives around 3.6% of the wholesale price of each iPhone product, with the remaining earnings going to other industries and jobs, many of which are in the US.[34] Therefore, the volume of exports and imports may be deceptive and not accurately reflect the balance of accounts.

6. Conclusion

This essay set out to examine the extent to which the *currency manipulation* holds true in contemporary China's managed float exchange rate system. It discovered through presenting competing points of view that while critics accused China of mercantilism and manipulating the Yuan, Chinese officials asserted that their managed float system aimed to encourage economic stability and national growth. Despite China's gradual reform of its exchange rate system and its currency's appreciation, critics argue that the Yuan is still undervalued and misaligned against the equilibrium. Although the misalignment and undervaluation of the Yuan are widely acknowledged in conventional discourse, empirical investigations in the literature has not established a consensus on the magnitude of the undervaluation of the Yuan. In fact, the *currency manipulation* argument lacks consistency when examining the relationship between the USD-Yuan exchange rate and the US-China trade deficit. Finally, the currency manipulation argument fails to take into account a number of other elements, such as China's geopolitical outlook of the Yuan, its economic advantages, such as its large population of inexpensive labour, which would influence the supply and demand conditions on the market, as well as overestimated Chinese exports to the United States. These findings illustrate that while the currency manipulation argument appears in line with conventional wisdom, the issue of China's currency exchange system is much more complex.

[32] Kan Yue and Kevin Holing Zhang, "How Much Does China's Exchange Rate Affect the U.S. Trade Deficit?" 89.

[33] Dedrick, Jason, Greg Linden and Kenneth L. Kraemer, "We estimate China only makes $8.46 from an iPhone – and that's why Trump's trade war is futile," The Conversation, 6 July, 2018,

[34] Ibid

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Appendix

Table 1

	US-China trade deficit (USD billions)	USD/Yuan exchange rate	US-Mexico trade deficit (USD billions)	USD/MXN exchange rate
2005	201.6	8.191	49.3	10.886
2006	232.5	7.970	64.1	11.043
2007	256.2	7.605	74.7	10.893
2008	268.0	6.938	64.8	10.822
2009	226.8	6.831	47.6	13.152
2010	273.1	6.769	61.7	12.388
2011	295.4	6.463	64.1	12.412
2012	315.1	6.312	61.6	13.183
2013	318.7	6.193	54.5	12.739
2014	343.1	6.142	53.8	13.251
2015	367.3	6.228	58.3	15.871