TRADE BALANCE DEFICITS IMPROVEMENT: A CHOICE OF EXCHANGE RATE DEPRECIATION OR TRADE RESTRICTIONS

Mehdi MONADJEMI ✉

University of New South Wales Sydney, Australia

mehdimonadjemi@yahoo.com

John LODEWIJKS

University of New South Wales Sydney, Australia

Abstract

Trade deficits are developed when exports of goods and services are less than imports. In these situations, country's foreign debt starts to rise. Some argue that rising foreign debt is not a serious problem, as long as export earnings are sufficient to service the debt. On the contrary, some economists suggest that the source of foreign debt, trade deficits should be improved. The trade balance can be reduced by introducing trade restrictions such as tariffs and quotas or by allowing the local currency to depreciate making exports cheaper and imports more expensive. To reduce trade deficits, most of the developing countries rely on trade restrictions rather than currency depreciation. In this study, it is shown that advance economies with trade deficits, maintained floating exchange rate and avoided trade restrictions. Furthermore, empirical results of this research show that current account balances of five selected countries are influenced by the exchange rates. Recently, the US government has moved against the globalization of trade, by imposing tariffs on China's imports.

Keywords: Trade restrictions, Tariffs, Quotas, International trade, Current account, Trade balance, Depreciation

INTRODUCTION

The U.S. trade deficit with China in 2019 was $345.6 billion. That was 18% less than 2018's $419.5 billion deficit. Recently, the US government has moved against the globalization of trade, by imposing tariffs on China's imports. The Chinese government retaliated by introducing tariffs on US produced goods. Has the US "won" this trade war? Does the decline in the trade deficit indicate that trade restrictions have been effective for the US?

Trade deficits are developed when exports of goods and services are less than imports. Economic theory suggests that this in itself is not necessarily a concern. A bilateral trade imbalance between two countries does not necessarily indicate an overall trade imbalance for a particular country. A deficit with one country may be offset with a surplus balance with another country. Even if there is an overall trade imbalance the effect on the current account may be neutralized with compensating changes in the other elements of the current account. An overall current account deficit will be matched by a surplus on the capital and financial accounts.

The sources of the current account deficit may not be instigated by the trade deficit but by the fact that the host country is a desirable location for foreign capital and this has long been the case for the US. It is a capital importer country. The current account deficit is a different result (as a balancing adjustment) to the capital and financial account surplus. Further underlying factors are the domestic inequality between saving and investment with the latter exceeding the former. The US has consistently under-saved and over-consumed and relied on foreign saving to restore the balance. Finally, a budget deficit – another characteristic of US fiscal policy – where the government absorbs more and more of the nation's saving is also related to the trade balance.

What these considerations demonstrate is that a trade imbalance is not inherently undesirable. Be that as it may, the US trade deficit with China has galvanized opposition and led to severe trade restrictions being imposed. This development has introduced excessive volatility and uncertainty in global financial markets. Another concern is that a current account deficit means a country's foreign debt starts to rise. Some argue that rising foreign debt is not a serious problem, as long as export earnings are sufficient to service the debt. Alternatively, debt is not an issue if the return on the investment exceeds the servicing cost and repayment of principal. Nonetheless, the trade balance can be reduced by introducing trade restrictions such as tariffs and quotas or by allowing the local currency to depreciate making exports cheaper and imports more expensive.

Trade restrictions can be justified in the short run for infant industries but in the long run continuous reliance on protection leads to recipient industries to become internationally less competitive. Even in the short run trade restriction may not improve the trade deficits if foreign

countries retaliate by imposing tariffs on their imports. However, depending on the existence of certain condition, a depreciation of the currency can improve the trade balance. For the balance of trade to improve in response to a depreciation of the currency, the sum of the elasticities of export and import must be greater than unity. This restriction is called Marshal-Lerner (ML) condition. The ML condition is discussed in the appendix.

The purpose of this paper is to compare effectiveness of trade restrictions and currency depreciation on improvement of a group of counties that experienced trade deficits and trade surpluses during the last two decades. There may be lessons for the US from this comparison. The selected counties are Australia, New Zealand, Japan, Korea and Germany. In this group, the first two counties experienced persistent deficits, and the last three had continuous surpluses.

STATISTICAL EVIDENCE

Usually, the trade balance is the largest component of the current account. The movements of current account balance follow the movements of the trade balance. Accordingly, the balance of current account is a good representative of the trade balance. Figure 1 shows that during 2011 – 2017, Germany, Japan and China experienced persistent current account surpluses whereas Australia, US, UK and OECD countries had current account deficits.

Figure 1 Annual Current Account Deficits (2011-2017)
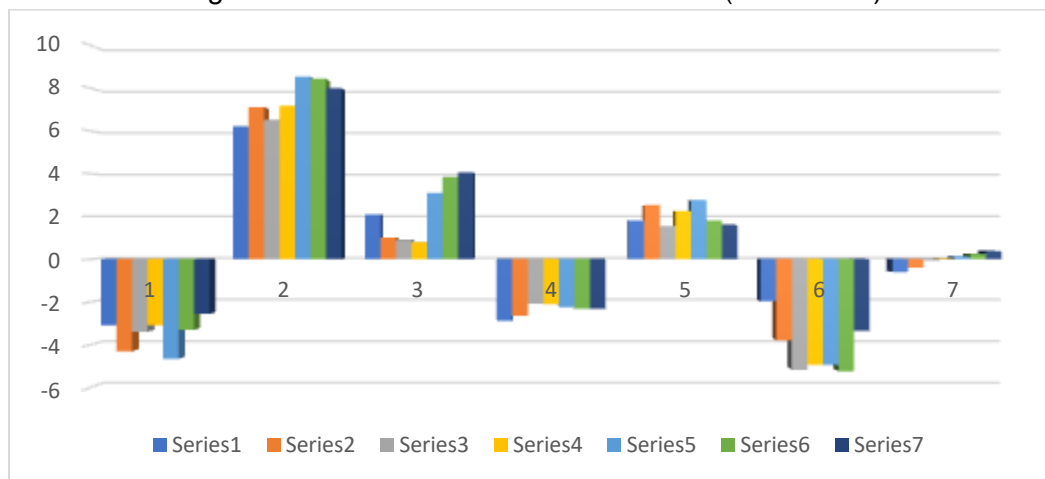
Note: Series 1, 2, 3, 4, 5, 6, and 7 refer to Australia, Germany, Japan, US, China, UK and OECD
Source: https://data.oecd.org/trade/current-account-balance.htm#indicator-chart

Japan is an interesting case where despite trade deficits in 2011 – 2015, trade barriers were not introduced, and yen depreciated significantly causing the trade balance to return to surplus in 2016 and 2017. This surplus was not long-lasting and turned to the deficit again in 2018 and

2019. In 2019 Japan's trade balance was mixed. It recorded the largest trade surpluses with the US, Hong Kong, South Korea, Taiwan, Singapore and the Netherlands and the biggest trade deficits with China, Australia, Saudi Arabia, the UAE and Qatar. A more detailed presentation, quarterly data, of current account balance is shown in Figure 2. Similar to Figure 1, it shows that Japan, Germany and Korea experienced current account surpluses whereas Australia, New Zealand and US had persistent current account deficits.

Figure 2 Current Account Balances % of GDP Quarterly Data

Source: https://data.oecd.org/trade/current-account-balance.htm#indicator-chart
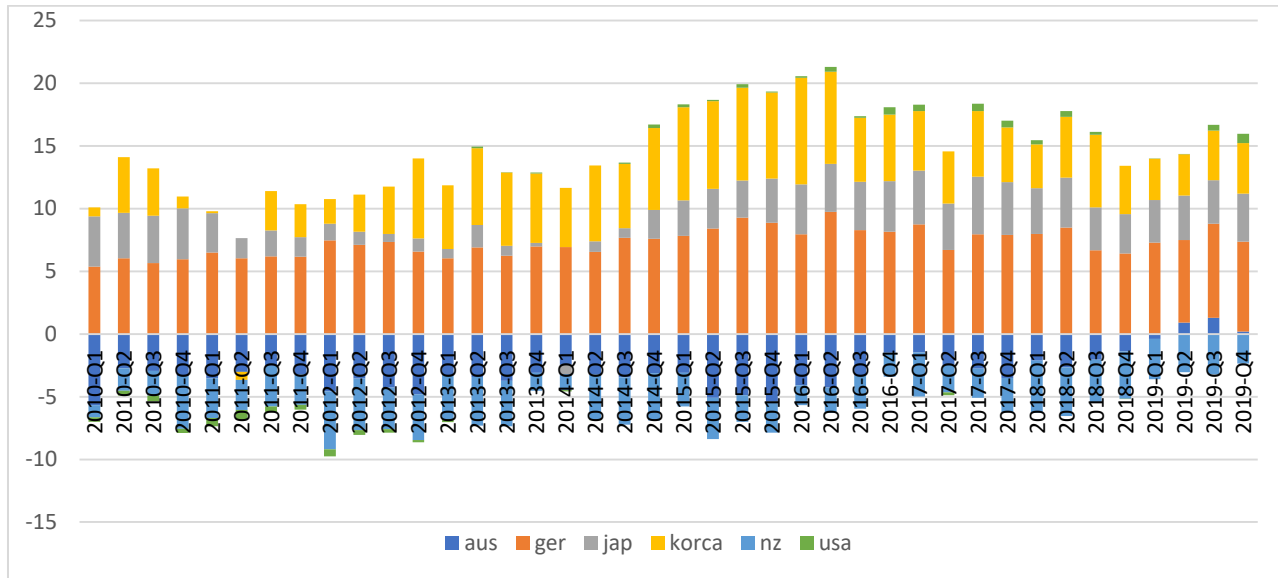
Figure 3 Quarterly Growth Rates
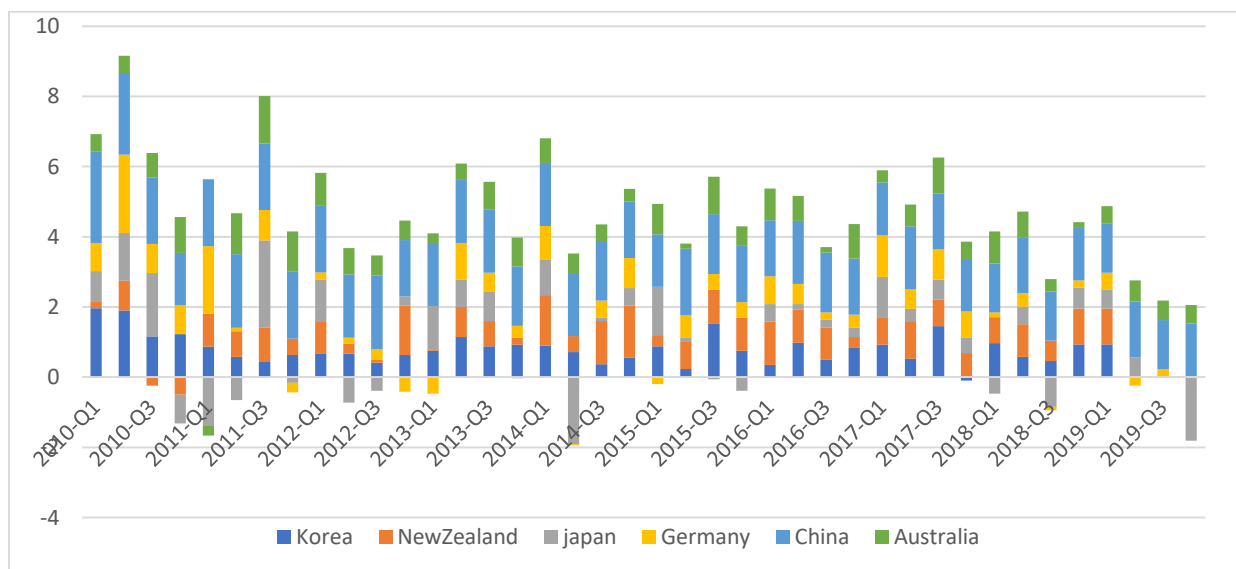
Note: Series 1 to 6 are growth rates of UK, Japan, OECD, USA, Germany and China respectively

Source: https://data.oecd.org/trade/current-account-balance.htm#indicator-chart

Figure 3 shows that China consistently experienced highest growth rates during 2010 – 2019. UK, Japan and USA had occasional negative growth. High growth rates stimulate imports causing trade balance deficits. However, in case of China, a significant rise in exports more than offset the rise in imports leading to a persistent trade balance surplus.

Jean Imbs and Isabelle Me'jean (2010) argued that estimates of export and import elasticities are often imprecise, such that international differences are generally insignificant. For example, values for export elasticities range from −2.27 to −0.34 for France, from −3.00 to −0.50 for Japan, or from −2.32 to −0.32 for the US. These are point estimates, corresponding to different estimators. It is not clear whether any of these elasticities are significantly different from zero. Furthermore, Marquez (2002) surveys values for the US price elasticity of import changes between −4.8 and −0.3, between −0.2 and −2.8 for Canada and between 0.15 and −3.4 for Japan. Such imprecision makes it difficult to use these figures for the relationship between depreciation and the trade balance.

Brooks (1999) maintains that the size of the US merchandise trade deficit has increased significantly, particularly with Japan and Canada. These trends are similar to the trade balance of the US with other members of the group of seven, including France, Germany, Italy and the UK. These four countries of the G-7 make up almost half of all trade for the US. In 1996, US totals trade with the G-7, as a percentage of GDP stood at 10%.

Brooks (1999) attempts to test the ML condition in the context of US bilateral trade with G7 countries. The purpose is to examine the effectiveness of a coordinated bilateral depreciation to improve the trade balance. This study attempts to estimate the condition that is necessary for a depreciation to be successful. The research focuses on the bilateral trade balance, not because of its economic importance, but rather due to the political nature of the bilateral trade balance. Often a trade deficit is taken as evidence of unfair trading practices on the part of the other country. It is often believed that the deficit is due to the foreign partner's import restrictions. In particular, the US has at different times pleaded with Japan to help reduce the US trade deficit. The estimates of bilateral elasticities will help to identify the quantity and volume effects of a tariff, or the impact of a coordinated dollar depreciation.

Our study takes a slightly different approach than Brooks (1999). The emphasis here is on the relationship between current account and the exchange rate. It was mentioned earlier that current account is a good representative of the trade balance. Furthermore, quarterly data on current account are more readily available than trade balance.

$$CA = f(Yw, E, Y) \qquad (1)$$

Where, $CA, Yw, E, and\ Y$ are current account balance, world income, exchange rate and domestic income respectively. ,

Equations 1 is estimated using quarterly data 2012 – 2018 for 5 open economies, including Australia, Germany, Japan, Korea and New Zealand. The exchange rate is defined as the price of foreign currency. China and US are not included in the regressions because the exchange rate is in terms of US dollar and Chain has a pegged exchange rate. All of the selected five countries have a floating exchange rate during the sample period. A positive sign of the coefficient of exchange rate indicates that depreciation of the exchange rate improves the balance of current account. The coefficients of world output and domestic output are expected to be positive and negative, respectively.

In Table 1 regression results of equation 1 is presented. All the coefficients of exchange rates are positive and significantly different from zero, indicating that exchange rate depreciation improves the current account balance.

These results are indirect indication of the effects of exchange rate changes on the trade balance. The effects of world output on current accounts of Germany and Japan, two high exporting countries, are positive and significant. The coefficients of domestic output obtained correct signs (negative) only in case of Japan and Korea and was significant in the latter case. Theoretically, when domestic output rises, imports rise causing a deterioration of the trade balance.

Table 1 Current Account % of GDP and Nominal Exchange Rates

	Constant	Exch. Rate	Y	Y*	R-squared	DW
Australia	-6.53	3.45	0.20	-0.91	0.16	0.52
		(2.22)	(0.26)	(-0.88)		
Japan	-1.84	0.036	-0.17	1.72	0.22	0.37
		(2.34)	(-0.62)	(1.50)		
Germany	2.48	5.69	0.20	1.12	0.55	0.89
		(2.76)	(0.96)	(2.71)		
New Zealand	-4.92	3.41	0.37	0.92	0.11	1.33
		(1.60)	(0.72)	(0.91)		
Korea	4.27	4.42	-0.02	0.52	0.11	0.55
		(2.45)	(-2.11)	(0.35)		

The regression results in above table are based on quarterly data 2010 – 2018. All of the data were collected from data.oecd.org.

TARIFFS AND TRADE BALANCE

Tariffs are taxes on imports. They are designed to reduce imports, encourage domestic production, and ultimately improve the trade balance deficits. Generally, tariffs are introduced at the early stages of economic development when domestic industries are not mature enough and it is difficult for them to compete internationally. Most economists agree that overall welfare effects of continuous tariffs are harmful for society. The loss of consumer benefit is greater the gains of domestic producers and government. It is argued that improvement of trade balance can be achieved by depreciation of local currency rather than introduction of trade restrictions. The introduction of tariffs causes retaliation by the affected foreign countries leading to overall decrease in global trade and perhaps, with little effect on domestic trade balance deficits.

Table 2 presents tariffs on products of advanced and developing countries. Advance economies are marked with*. It is obvious that developing countries rely more on trade restriction measures than developed economies. Tariffs and other trade barriers tend to protect domestic producers against foreign competition. Domestic producers avoid competing with foreign producers if trade barrier measures are continuously imposed. As a result, domestic industries need not pursue quality improvements and innovations, leaving limited choice to consumers. International competition without trade barriers forces domestic producers to compete with foreigners by offering better quality products at a competitive price. Overall, consumers benefit from removal of trade barriers.

Table 2 Tariff Rate Developing and Advance Economies

|	2012	2013	2014	2015	2016	2017	2018
China		9.9	9.6	9.9	9.9	9.8	9.8
EU*		5.5	5.2	5.1	5.1	5.2	5.3
India		13.5	13.5	13.4	13.4	13.8	17.1
Japan*		4.9	4.2	4.0	4.0	4.0	4.4
Australia*		2.7	2.7	2.5	2.5	2.5	2.5
US*		3.4	3.5	3.5	3.5	3.4	3.5
Canada*		4.2	4.2	4.2	4.1	4.0	4.0
Argentina		13.4	13.6	13.6	13.7	13.7	13.7
Brazil		13.5	13.5	13.5	13.5	13.4	13.4
Korea Re.		13.3	13.3	13.9	13.9	13.7	13.9
Venezuela		13.3	12.9	12.9	12.7	13.8	13.8
Egypt		NA	11.9	11.9	12.3	12.2	12.3

Data are average tariffs collected from the WTO website. Tariff rates are percentage averages during the year. This table was collected from Monadjemi and Lodewijks 2020. It is clear that developing countries rely more on trade restriction measures than developed economies.

TARIFFS OR EXCHANGE RATE DEPRECIATION

The main purpose of this research is to recommend which strategy, trade restrictions or currency depreciation is preferable for improving the trade balance. Again, we are abstracting from overall economic theory that indicates that there are other underlying forces at work that generate trade deficits and it is these factors that are far more important than trade restrictions. Trade balances of five economies that show their current accounts were inversely related to their exchange rates (Table 2) are presented in Figure 4.

There are four counties, France, Australia, US and UK, with persistent current account deficits 2010 – 2018. All of these four countries operate within the floating exchange rate system. All four of them have low tariff rates and with the exception of the United States, they have not attempted to introduce higher tariff rates to improve trade balance deficits. The United States introduced tariffs on imported goods from China in 2018. Against this decision, the Chinese government retaliated by introducing tariffs on US produced goods.

Figure 4 Current Account Balance
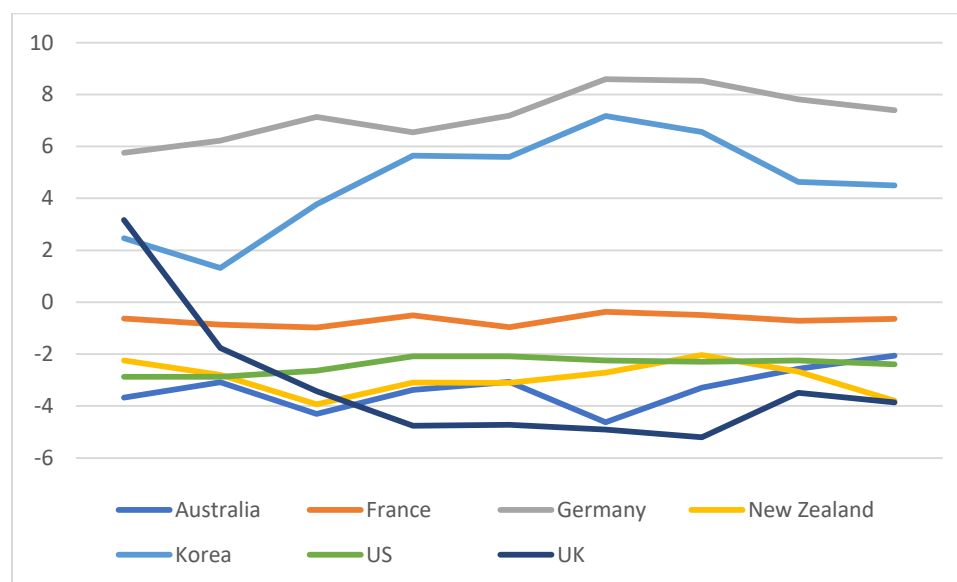
Amadeo (2020) points out that the U.S. trade deficit with China in 2019 was \$345.6 billion. That's 18% less than 2018's \$419.5 billion deficit. The trade deficit declined mainly because both exports and imports both declined but imports fell significantly more. The US trade balance

with China was -315.1 billion dollars which reached the highest in 6 years to -419.2 billion in 2018 before falling to -345.6 billion in 2019. The biggest categories of U.S. imports from China were computers, cell phones, apparel, and toys and sporting goods. A lot of these imports are from U.S. manufacturers that send raw materials to China for low-cost assembly. Once shipped back to the United States, they are considered imports.

CAUSES AND EFFECTS

China produces many consumer goods cheaper than other countries, and buyers, including those in the United States, are attracted to cheaper prices. Most economists argue that China's competitive prices are as a result of two factors:

1. A lower living standard which leads to workers accepting lower wages.
2. A fixed exchange rate pegged to US dollar

China pegs the value of its currency, the yuan, to the dollar. When the US dollar loses value, China purchases dollars to support it. China must buy so many U.S. Treasury notes that, up until June 2019, it was the largest lender to the U.S. government. As of November 2019, the U.S. debt to China was $1.09 trillion. That's 16% of the total public debt owned by foreign countries. Many Americans are concerned with the China's political leverage over U.S. fiscal policy and ask about what would happen if China started selling its Treasury holdings. Also, there are grave adverse consequences if China reduces its purchase of Treasury notes. By buying Treasury notes, China keeps U.S. interest rates low. If China were to stop buying Treasury notes, US interest rates would rise leading to a recession.

U.S. producers that can't compete with cheap Chinese goods must reduce their costs or close down. Many businesses attempt to reduce their costs by outsourcing jobs to other countries such as China or India. It has been noted that U.S. manufacturing, as measured by the number of jobs, fell 35% between 1998 and 2010, before rebounding by about 12% to the end of November 2019. Overall, manufacturing jobs in the United States have declined by about 27% since 1998.

The US imposed a 25% tariff on steel imports and a 10% tariff on aluminium that went into effect on July 6, 2018, increasing prices of $34 billion worth of Chinese imports. China retaliated and cancelled all import contracts for soybean.

Introduction of tariffs have increased the costs of imported steel in US, most of which are imported from China. The tariffs were introduced a month after US imposed tariffs and quotas on imported solar panels and washing machines. China has become a global leader in solar panel production. The tariffs cause excessive volatility in the stock market when they were

announced. It is argued that US administration's protectionist measures are intended, in part, to force China to remove requirements that U.S. companies transfer technology to Chinese firms.

CONCLUDING REMARKS

The purpose of this study is to examine how countries attempt to improve trade balance deficits, currency depreciation or trade restrictions. It was shown that advanced economies trade restrictions are much lower than developing economies. Furthermore, regression results of a group of five open economies showed that current account balances are significantly influenced by changes in the exchange rate. These results indicate that for developed economies to improve trade balance deficits, exchange rate changes are more appropriate than trade restrictions. United States is the only advanced economy that diverted from this trend and imposed tariffs against goods imported from China. The long- term effects of this counter-productive policy may be far reaching for the global economy. It is expected that MR condition to hold for developed economies and hence these counties should avoid imposing trade restriction for improvement of their trade deficits.

Future studies in this area should examine the validity of Marshall-Lerner condition by estimation elasticities of exports and imports for countries with flexible exchange rates. Statistical techniques such as cointegration and error correction are suitable for evaluation of Marshall-Lerner condition.

REFERENCES

Amadeo, K. (2020), "US Trade Deficit with China and why it's So High" in: https://www.thebalance.com/u-s-china-trade-deficit-causes-effects-and-solutions-3306277

Brooks, T. J., "Currency Depreciation and the Trade Balance: An Elasticity Approach and Test of the Marshall-Lerner Condition for Bilateral Trade Between the US and the G-7", A Dissertation Submitted for the Doctor of Philosophy, University of Wisconsin Milwaukee, May 1999.

Imbs, J. and Me'jean, I, (2010) https://www.frbsf.org/economic-research/files/Imbs.pdf

Marquez, J., (2002), "Estimating Trade Elasticities", Springer London Editor

Monadjemi, M. and Lodewijks, J., (2020) "Globalization in Trade or Trade Restrictions? A Study of Post-War and Recent Trends", Applied Economics and Finance, 7 (2), March, pp. 24 - 29.

APPENDIX

In equation 1 TB, X, M and e (price of Foreign currency) are trade balance, exports, imports and real exchange rate respectively. eM is the value of imports in domestic currency.

Differentiating 1 totally and dividing both sides by de yields:

$$TB = X - eM \tag{1}$$

$$dTB/de = \frac{\partial X}{\partial e} - \frac{\partial M}{\partial e} e - M \tag{2}$$

Multiplying both sides of 3.8 by 1/X gives:

dTB/de 1/X = $\frac{\partial X}{\partial e}$ 1/X - $\frac{\partial M}{\partial e}$ e/X − M/X   (3)

At the equilibrium TB = X − eM = 0   or e = X/M

Multiplying both sides of 3 by e yields:

dTB/de e/X = $\frac{\partial X}{\partial e}$ e/X - $\frac{\partial M}{\partial e}$ e/ M − 1   (4)

In 4 e/X is positive. For depreciation to improve TB, dTB/de must be positive.

$\frac{\partial X}{\partial e}$ e/X and $\frac{\partial M}{\partial e}$ e/ M are elasticities of exports and imports respectively, μ_x and μ_M. It follows that

dTB/de e/X = $\frac{\partial X}{\partial e}$ e/X - $\frac{\partial M}{\partial e}$ e/ M − 1> 0   (5)

$\lfloor \mu_x + \mu_M \rfloor$ > 1   (6)

In 6 μ_x is positive because $\frac{\partial M}{\partial e}$ is negative.