



HOW EFFECTIVE IS CURRENCY DEPRECIATION FOR REDUCING TRADE BALANCE DEFICITS? A STUDY OF FIVE OECD COUNTRIES

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Abstract

This study attempts to show that developed countries rely on currency depreciation to improve their international competitiveness. Trade restrictions in form of tariffs and quotas are more popular among developing countries where their industries are in the early stages of development. The results of this study support that developed countries rely on market forces to remedy their trade balance deficits. The only exception was that after decades of trade liberalization, recently the President of the United States introduced tariffs on imported goods from China. The justification ranged from protecting American jobs to counter-acting Chinese's exchange rate manipulation. As expected, the Chinese government retaliated by introducing tariffs on US produced goods. Direct intervention via explicit trade barriers causes political and economic dislocation. Trade wars can get out of control and harm third countries not directly involved as well as the combatants themselves. They are to be avoided.

Keywords: International trade, Tariffs, Quotas, Exchange rate, Trade balance, Developing economies, Developed economies, Imports, Marshall-Lerner condition



INTRODUCTION

The topic of global trade disruption has recently become popular, particularly after the imposition of tariffs by the US government on imports from China. In response to this development, the Chinese government retaliated by imposing tariffs on goods imported from the United States. A trade war ensued that side-lined steady progress towards trade liberalization and open global markets.

Economic theory does not support trade restrictions as it has negative impacts on the welfare of the imposing country as well as the recipient nation. Furthermore, importing countries reciprocate leading to resource misallocation through the blunting of comparative price signals with the inevitable global rise in prices and loss of consumers' welfare. The static and dynamic benefits of trade are forgone.

Generally, developed countries multilaterally reduced barriers to trade with certain exceptions associated with powerful special interests. Any resulting trade deficits are corrected through currency depreciations. Higher tariffs and other trade restrictions are mainly imposed by closed economies are in developing countries whose infant industries still require nurturing and support.

Depreciation of a local currency may improve trade balance deficits under certain conditions. Normally in the short run as currency depreciates, imports become more expensive, and if exports remain unchanged then the trade balance deteriorates. However, in the long run, provided that Marshall-Lerner (ML) condition holds, the trade balance improves. The ML condition argues that for depreciation to improve the trade balance, the sum of the elasticity of export and elasticity of imports must be greater than unity.

The purpose of this study is to examine the relationship between the net trade balance (NTB) and currency depreciation for a group of countries that have experienced persistent trade balance deficits. Section 1 presents design, data and analytical approach of the research. Theoretical discussions of depreciation and trade balance are offered in Section 2. Some graphical time series of five trade deficit countries are presented in Section 3. Statistical results are discussed in Section 3. Summary and concluding remarks are in Section 4.

DESIGN, DATA AND ANALYTICAL APPROACH

This research is mainly designed to examine the relationship between trade balance and exchange rate using data on five OECD countries. A simple model for trade balance, including exchange rate and world output is estimated by ordinary least square. Annual data 1990 – 2019 is used for estimation of trade balance equations. All the data are annual, collected from the OECD for trade balances and exchange rates and from WTO for world growth, web sites, given

in the references. The regression results of five countries show that trade balance and exchange rate move in the opposite direction.

THEORETICAL DISCUSSION

This section starts with literature review and proceeds by discussing a theoretical framework for the relationship between the net trade balance and depreciation. Brooks (1990) examined the validity of the ML condition using data on US and its major trading partners. The purpose of that research was to explore whether or not a coordinated bilateral depreciation can improve the trade balance. It is generally accepted that if the sum of the absolute value of the import and export demand price elasticities is greater than unity, the trade balance will improve following a depreciation.

Brooks (1990) attempted to estimate equations for export demand and imports using quarterly data on US and six trading partners including Italy, France, Japan, Germany, Canada, and UK. Using OLS and cointegration technique, the results show the ML condition is satisfied for US and 5 of its trading partners. Canada is the only exception that fails to meet the ML elasticity condition. The study concludes that depreciation of US dollar may improve its trade deficits with 5 trading partners.

In our research, a different approach is employed to determine the relationship between net trade in goods (exports minus imports) and the exchange rate. We examine five developed OECD countries including, France, United Kingdom, Portugal, Luxembourg, and Spain. These countries have experienced persistent trade deficits, have a floating exchange rate, and have not attempted to use trade barriers to improve their trade deficits. The model used for estimation is presented in equation 1.

$$NT_t = f(ER_t, WG_t) \quad (1)$$

In equation 1, NT, ER and WG are net trade in goods in millions of US\$, nominal exchange rate defined as domestic currency per US dollar, and the world growth of output. It is expected that a depreciation of the currency and an increase in world growth both have positive effects on NTB. Accordingly, coefficients of both ER and WG are expected to be positive. All variable except WG are in logarithms.

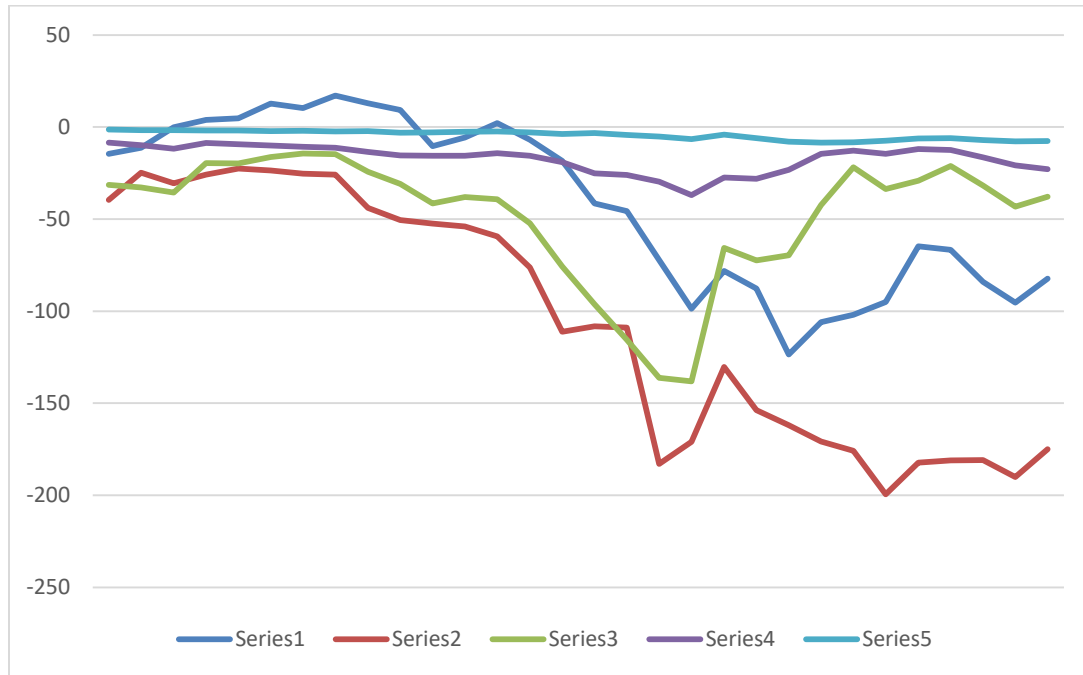
The empirical method of the study is based on Ordinary Least Square (OLS) using annual data 1990 – 2019.

SOME GRAPHICAL PRESENTATION

Before presentation of the estimation results, it is interesting to observe trends of NTBs in these 5 selected countries during the sample period. As indicated all of the five selected counties,

except France for a few early years, experienced net trade deficits. However, none of these countries relied on trade protection to improve their deficits. This suggestion is supported by estimating the relationship between net trade deficits and the exchange rates. The regression results are subsequently presented in Table 1.

Figure 1: Five countries Net Trade (Millions of US\$) 1990 – 2019



In Figure 1 series 1 to 5 are net trades for France, UK, Spain, Portugal, and Luxemburg, respectively.

Regression Results

Table 1 Regression Results

	Constant	Exchange Rate	World Growth	R^2	DW
France	99	128 (1.94)	5.89 (0.88)	0.18	0.15
Luxembourg	1.90	1.29 (1.62)	-0.03 (-0.33)	0.1	0.2
Portugal	30.40	29.1 (2.97)	-0.70 (-0.68)	0.25	0.60
Spain	5.37	3.38 (2.48)	-0.15 (-1.04)	0.20	0.86
UK	3.26	-2.34* (-1.04)	-0.9 (-0.43)	0.05	0.76

In case of UK, the exchange rate is defined as the number of US dollars per pound. Downward movements mean depreciation of the British currency. Figures in brackets are “t”

All the coefficients in Table 1 are positive (except for UK), indicating that depreciation of the currency and net trade move in the same direction. This means that for those five countries, currency fluctuations rather than trade restrictions were associated with improvement of trade balance.

In Table 2 average tariffs for developed and developing countries is presented. Developed economies are marked by *. The table clearly indicates that developing countries have higher average tariff than developed economies. Developing economies relied more on trade restrictions to protect themselves against foreign competition.

Table 2 Tariff Rate Developing and Advanced Economies

	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. Developed countries are marked with *.

US Tariffs on Chinese Goods

Although it was shown that developed countries have largely avoided trade restrictions after decades of trade liberalization, recently the President of the United States introduced tariffs on imported goods from China. The justification ranged from protecting American jobs to counteracting Chinese exchange rate manipulation. As expected, the Chinese government retaliated by introducing tariffs on US produced goods. The cost of this trade war falls mainly on consumers in both countries where they have to pay higher prices. Higher prices on imports leads to higher prices of import substitutes and eventually to higher inflation, although given the current state of global recessions, the inflation effects have been muted.

The World Economy (2029) maintains that the US President introduced a 25% tariff on steel imports and a 10% tariff on aluminium that was effective on July 6, 2018, affecting \$34

billion worth of Chinese imports. In response, China retaliated by cancelling all import contracts for soybeans. The Introduction of new tariffs have raised the costs of imported steel, which is mainly from China. The steel tariffs occurred a month after imposing tariffs and quotas on imported solar panels and washing machines. China has become a main global producer of solar panels. On December 13, 2019, the US announced a trade deal between the United States and China and there are hopes for a normalization of trade relations.

The effects of higher tariffs on the trade balances of US and China is presented in Table 3. The U.S. trade deficit with China in 2019 was \$345.6 billion. That was 18% less than 2018's \$418.9 billion deficit. The 2019 trade deficit resulted from U.S. exports to China of only \$106.6 billion were insufficient to offset imports from China of \$452.2 billion. It should be noted that trade imbalances with particular countries are normal occurrences and generally of little concern and may indeed reflect other more fundamental discrepancies between saving and investment and capital and financial account transactions.

It might also be stressed that while the largest items of U.S. imports from China were computers, cell phones, apparel, and toys and sporting goods, most of these imports are from U.S. manufacturers that send raw materials to China for cheap assembly. Once sent back to the United States, they are included in imports.

In table 3, US exports, import and trade balance with China in billions of US dollars is presented. The maximum deficit in 7 years was reached in 2018 when tariffs on Chinese goods were introduced.

Table 3 US Trades with China billions of US dollars

	Exports	Imports	Trade Balance
2012	110.5	425.6	-315.3
2013	121.7	440.4	-318.6
2014	123.7	468.4	-344.8
2015	115.8	483.2	-367.3
2016	115.5	462.5	-346.9
2017	129.9	505.6	-375.6
2018	120.3	539.5	-419.2
2019	106.6	452.2	-359.6

This table was collected from <https://www.thebalance.com/u-s-china-trade-deficit-causes-effects-and-solutions-3306277>, "Us Trade Deficit with China and why is so High"

In 2019, the trade balance deficit was reduced. In the same year imports from China and exports to China both declined. It is too early to conclude that reduced trade deficit in 2019 was as a result of the introduction of tariffs on Chinese's goods. A more continuous trend of trade deficit is required to conclude that the introduction of tariffs has been effective in reducing US

trade deficits with China. But the issue is at what cost has this been achieved. If overall economic output, income, and employment have fallen in both countries then it is a misplaced policy and that is not even considering the impacts on unrelated third countries.

Causes of US Trade Deficit

China produces many consumer goods cheaper than other countries, and buyers are attracted to low prices. China's competitive pricing is caused by two factors:

1. A lower standard of living, which permits companies in China to pay lower wages to workers. A common way to measure the standard of living is gross domestic product per capita. In 2019, China's GDP per capita was \$16,784. Lower wages in China allow producers to produce goods at lower prices that cannot be matched in the United States. US consumers prefer cheaper prices. and do not care about higher unemployment in US.
2. An exchange rate that is partially fixed to the dollar. China pegs its currency to the US dollar using a modified fixed exchange rate. When the dollar loses value, China buys dollars through US Treasury to keep the rate against Yuan fixed. This fixed exchange rate allows China to maintain lower prices when US prices are rising as a result of dollar depreciation.

U.S. companies that are not able to compete with cheaper Chinese goods must reduce their costs or go out of business. Many businesses have reduced their costs by outsourcing jobs to China or India. U.S. manufacturing, employment declined 35% from 1998 to 2010, before recovering by about 12% from 2010 through the end of November 2019. Overall, US manufacturing employment has declined by about 27% since 1998.

We might note that structural transformation, reflected by the changing sectoral shares of output and employment, is a common feature of economic development. Hence the decline in manufacturing is a common occurrence in affluent economies. Such a change may impose adjustment costs that justify structural assistance packages but usually are not actively interrupted or reversed by government policy.

Additional Complications

Amadeo (2020) argued that China holds a substantial stock of U.S. Treasury notes. Up to June 2019, it was the largest holder of U.S. government Treasury notes. As of November 2019, the U.S. debt to China was \$1.09 trillion. This represented 16% of the total public debt owned by foreign countries. Many are concerned that this development gives China political leverage over U.S. fiscal policy and worry about what would happen if China started selling its Treasury

holdings. It also would be even disruptive if the Chinese merely cut back on its Treasury purchases. Through purchasing Treasury notes, U.S. interest rates remain low. If China were to stop buying, US interest rates would rise. Rising interest rates may have a depressing effect on the US economy. Alternatively, this is not to China's best interests, as U.S. consumers would buy fewer Chinese produced goods.

CONCLUSIONS

In this study, it was shown that developing countries rely on trade restrictions to improve their international competitiveness. Developed economies mainly avoid trade restrictions and let the exchange rate correct their trade balance deficits. This was shown for five selected OECD countries that experienced persistent trade deficits during the past three decades. However, the empirical results of this study are limited to five selected countries with trade balance deficits. Future studies need to show that these results are not applicable to developing countries that rely on trade restrictions.

The findings of the study are that it is far desirable in all senses if developed countries allow exchange rate movements in the foreign exchange market to accommodate external trade imbalances. Direct intervention via explicit trade barriers causes political and economic dislocation. Trade wars can get out of control and harm third countries not directly involved as well as the combatants themselves. They are to be avoided.

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