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Trade Restriction and Economic Growth: A Study of Developed and Developing Countries

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ABSTRACT

According to the World Bank, most research suggests that unilateral reduction in trade barriers can result in the greatest and the quickest gains in welfare. However, recently United States imposed tariffs on good imported from China and Chinese government retaliated by introducing trade barriers on imports from the United States. Generally, developed counties attempt to improve their trade deficits by allowing the exchange rate to depreciate, whereas developing countries rely more on trade restrictions. In this paper, five developed countries and five developing countries that experienced persistent trade deficits were selected. A VAR statistical technique was used to examine the effects of exchange rate changes of the net trade of two selected groups of countries. It is shown that in case of developed counties, the exchange rate and net trade moved in the same direction. However, the same results were not confirmed for the developing countries.

Key words: trade balance, tariffs, developing and developed countries, exchange rate, economic growth, consumer surplus.

INTRODUCTION

Trade restrictions in the form of tariffs and quotas are imposed to improve the competitiveness of domestic industries compared to imported products. Economists, in general are against imposition of trade restrictions on the ground that such measures protect domestic producers at the expense of domestic consumers. Overall, society's welfare is harmed by imposition of trade restrictions. For example, an introduction of tariffs is beneficial to domestic producers and government, but it reduces consumers' benefits. Moreover, the total loss of consumers' benefits is greater than gains of domestic producers and government. If this argument is valid, then the introduction of trade restrictions should adversely affect the static gains from international trade as well as the dynamic gains associated with improvements in technology and eventually economic growth.

Generally, developed countries with many infant industries attempt to employ trade restrictions to protect domestic producers against foreign competition to allow these industries to mature and gain economies of scale and scope. In developed countries, where most of the industries have matured, trade restrictions can be eased. The reduction in trade barriers has been facilitated through multilateral trade rounds associated with the GATT and later the WTO.

The purpose of this study is to examine the effects of trade restrictions on economic growth of developed and developing countries. The growth rate of a sample of developed and developing countries is compared during periods when trade restrictions are imposed in developing countries. A review of literature is presented in Section 1. A theoretical model is developed in Section 2. Empirical Results are discussed in Section 3. Summary and concluding remarks are offered in Section 4.

REVIEW OF LITERATURE

According to the World Bank, most research suggests that unilateral reduction in trade barriers can result in the greatest and the quickest gains in welfare. Some countries, such as Chile, China, and Costa Rica, have conducted domestic policy reforms including the liberalization of trade. Yet as the case of Haiti shows, liberalization when institutions and the economy are not mature enough to face risks and opportunities can be damaging (Rodriguez & Rodrik 2001). And while reforms may be beneficial in the long run, in the short run, there are both winners and losers. Low-income consumers, unskilled workers in protected industries, and previously, protected producers may lose in the transition period as the economy adjusts to reforms. Temporary safety nets can help cushion the blow and ensure trade-led growth is pro-poor. Specific assistance to meet costs of adaptation – for example, of switching to a different crop – may be appropriate.

Monadjemi and Lodewijks (2020) argue that overall, the welfare effects of trade liberalizations fall within the realm of second-best economics. There is still disagreement about the direction of causation in the association between openness to trade and East Asia's rapid growth. What role have trade liberalization packages played in the performance of outward-oriented economies? A number of these countries, such as Japan, Korea, Singapore, and Taiwan, have promoted exports, but in an environment where imports had not been fully liberalized. The success of the East Asian countries with export-led growth suggests that some selectively determined degree of government intervention played a key role. Imports and lower tariffs may stimulate productivity but import competition may have little impact on productivity growth if the domestic producers are technologically backward. The beneficial effects only occurred if benefits accrue only to domestic producers that are roughly comparable to their foreign counterparts. This, then, suggests a role for trade-adjustment packages and safety nets for those disadvantaged by trade liberalization.

Wacziarg and Welch (2008) find that trade liberalization has, on average, robust positive effects on growth and investment rates within countries. They illustrate these large sample findings with detailed case studies in a sub-sample of representative countries. Other studies indicate that financial liberalization is more problematic, and the sequencing of liberalization is important (Lodewijks 2007).

THEORETICAL DISCUSSION

We now focus more narrowly on trade balance effects. Theoretically, in the long run, trade balance liberalization should stimulate economic growth. The effect of trade balance on growth is through

currency fluctuations. A trade balance deficit caused depreciation of the local currency may lead to an increase in exports, reduction of imports and an improvement in real output. These relationships are based on floating exchange rates that respond to the changes in the trade balance. In this study a vector auto regressive (VAR) model is estimated to examine effects of trade balance on economic growth. Since the seminal paper of Sims (1980), vector auto regressive models have become a popular tool in macroeconomic models. One of the major problems with OLS estimation is exogeneity of independent variables due to two-ways causation in most of the economic relations. If, this is the case, then estimated coefficients are not BLUE (best linear unbiased estimate) and "t" tests are no longer valid.

In a VAR model there is no assumption of exogeneity. Every variable is a function of its own lags and lagged values of other variables in the model. A simple univariate (i.e., only one dependent or endogenous variable) autoregressive (AR) model is presented below:

$$yt=a1yt-1+et$$

In this model the current value of variable y depends on its own first lag. Since the model contains only one lagged value, the model is called autoregressive of order one, short AR(1), but you can easily increase the order to p, by adding more lags, which results in an AR(p). The error term et is assumed to be normally distributed with mean zero and variance σ2. The VAR model of trade balance contains the following variables:

$$TB = f(y, y^*, e) \qquad (1)$$

In equations 1 TB, y, $y*, e$ are net trade balance, growth of domestic output, growth of foreign output, and nominal exchange rate. The exchange rate is price of foreign currency. A depreciation is represented by upward movements of the exchange rate,

Once a final VAR model its estimated coefficients have to be interpreted. Since all variables in a VAR model depend on each other, individual parameter values little information on the response of the system to a shock. In order to obtain more information about the model's dynamic behaviour, impulse response Functions (IRF) are derived. They represent the reaction of a response variable to a one-time shock in an impulse variable. The trajectory of the response variable can be plotted, which results in those wavy curves that can be found in many macro papers. For example, in the above model in equation 1, we are interested in how NT behaves after a shock to y*and e. The time horizon is set to 10 periods ahead, starting from period zero. The function also automatically calculates so-called bootstrap confidence bands. Bootstrapping is a common procedure in impulse response analysis.

It is expected that in developed counties, a shock of the exchange rate effects the trade balance positively. However, in developing countries that employ trade restrictions, a shock of the exchange rate should leave the trade balance unchanged. This hypothesis is tested for five developing countries with trade deficits and five developing countries that experienced trade deficits.

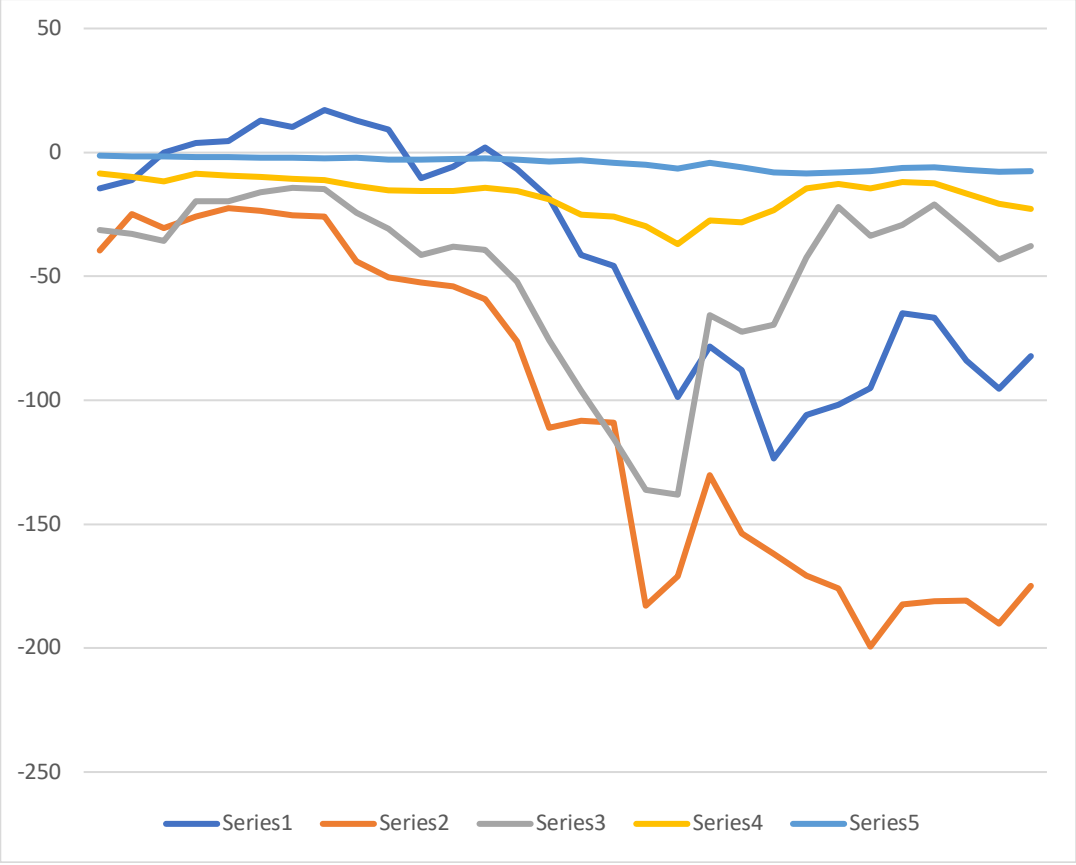
Below are trade balances of five developed and five developing countries. Selected countries are chosen on basis of having persistent deficits. Figures 1 to 5 represent IRFs for five selected developed countries. Each IRF show responses of the net trade balance to a shock of the exchange rate. A shock is introduced by changing the exchange rate by 2 standard deviation above or below. The responses of the trade balances are during the following 10 years.

The shocks are represented by solid lines. The dotted lines are confidence intervals. A shock is significantly greater than zero if both confidence interval bands are above the zero line. In all five cases, with the exception of UK, a depreciation causes an improvement of the current account. The UK case depreciation of the currency is represented by a downward movement of the currency: the exchange rate is a pound per US dollar.

EMPIRICAL RESULTS

All of the data in this section were collected from the OECD sites. The details of sources are given in the references. In Figure 1a, net trade deficits of five developed counties in millions of US dollars are presented. Except France in early 1990s, all of the five countries experienced trade deficits

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



In Figure 1a series 1 to 5 are net trades for France, UK, Spain, Portugal, and Luxemburg, respectively. This figure was duplicated from Monadjemi and Lodewijks (2020).

Response to Cholesky One S.D. (d.f. adjusted) Innovations ± 2 S.E.

Figure 1 Response of UK Nettrade to the Exchange Rate

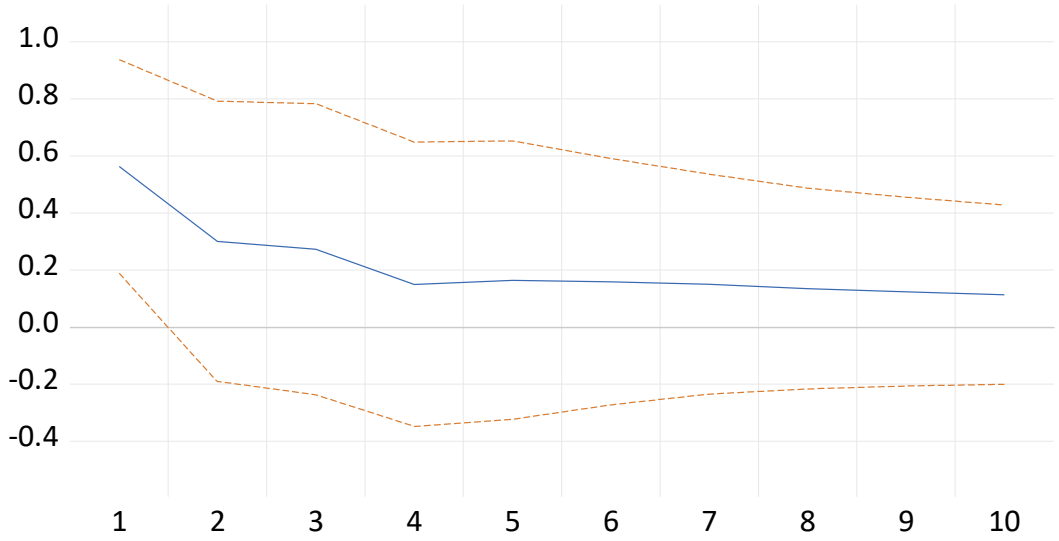


Figure 2 Response of France Nettrade to Euro Exchange Rate

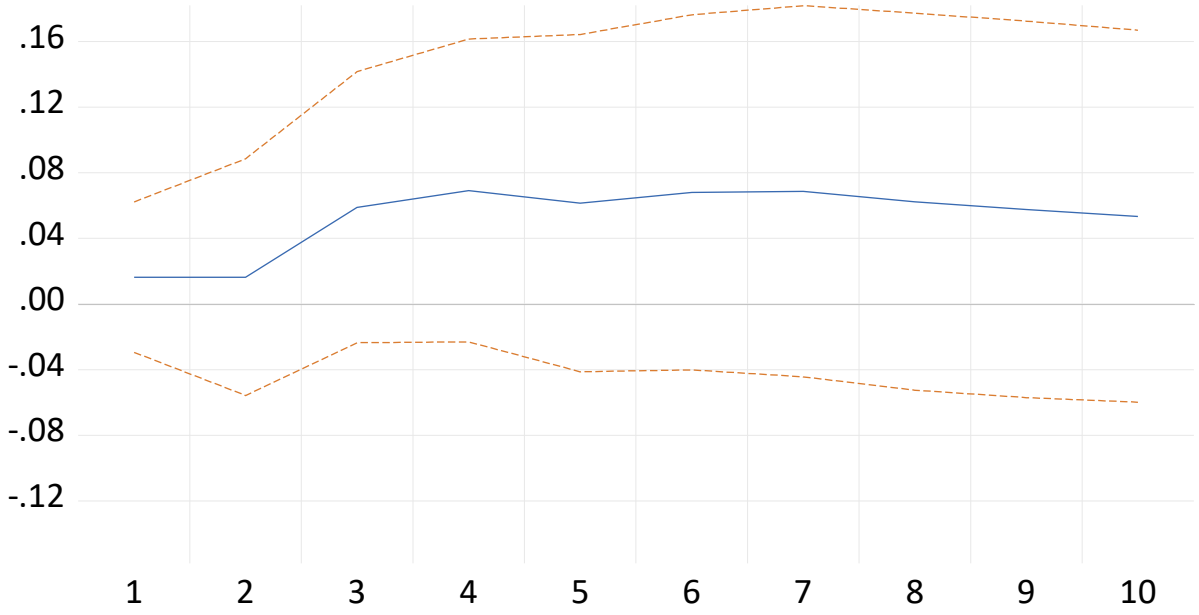


Figure 3 Response of Spain Nettrade to Euro Exchange Rate

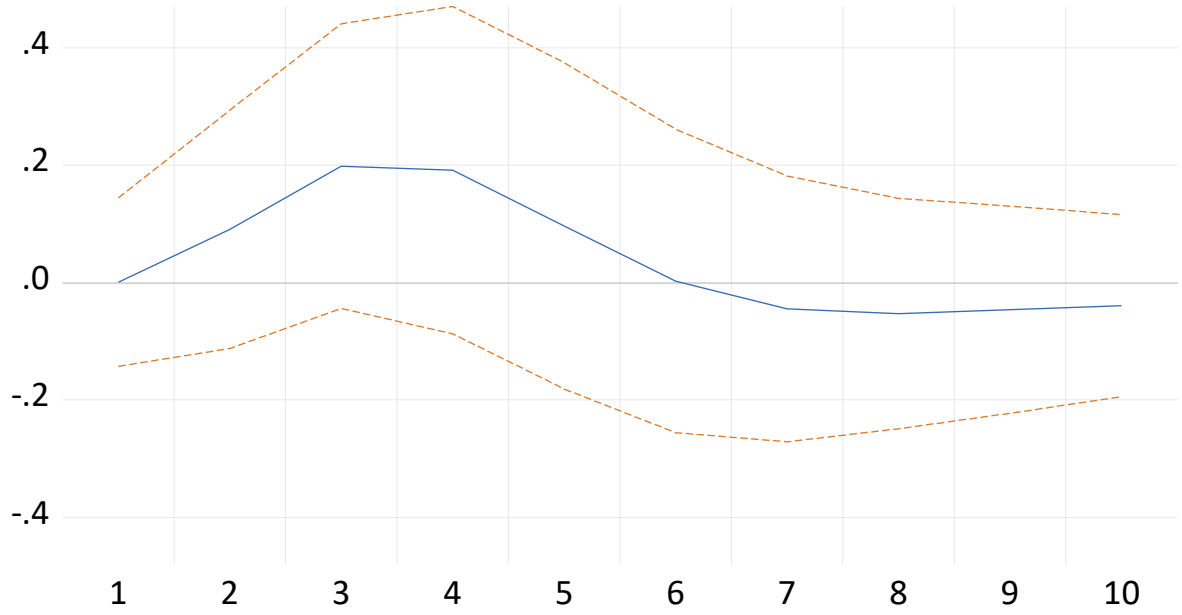


Figure 4 Response of Portugal Nettrade to Euro Exchange Rate

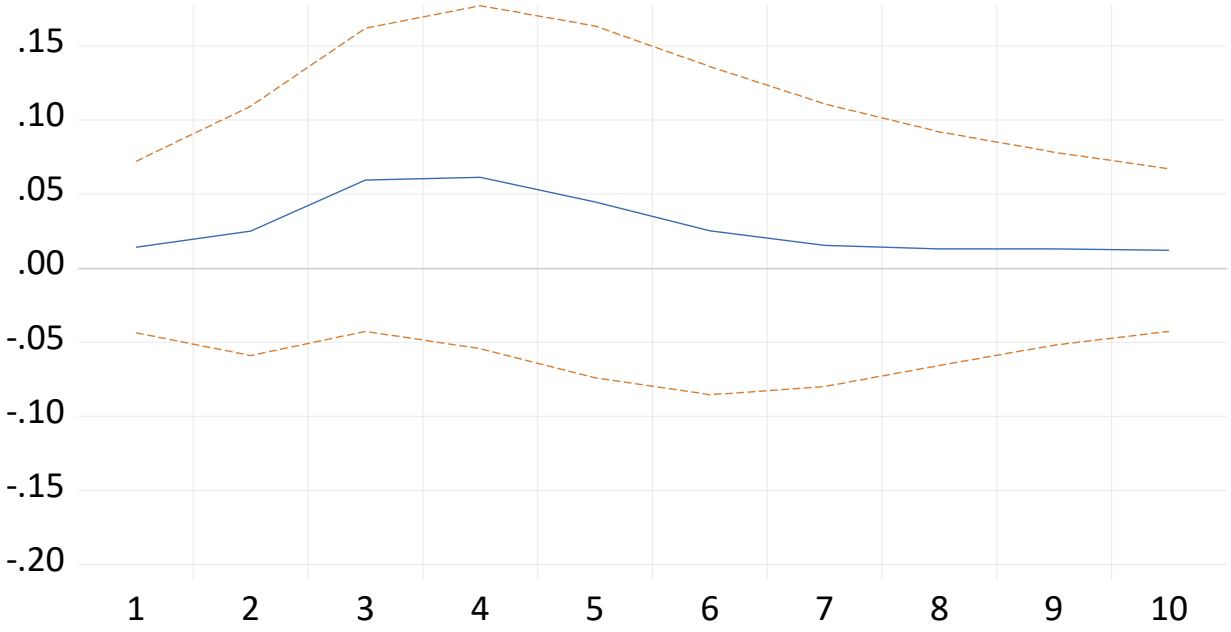


Figure 5 Response of Luxemburg Nettrade to Euro Exchange Rate

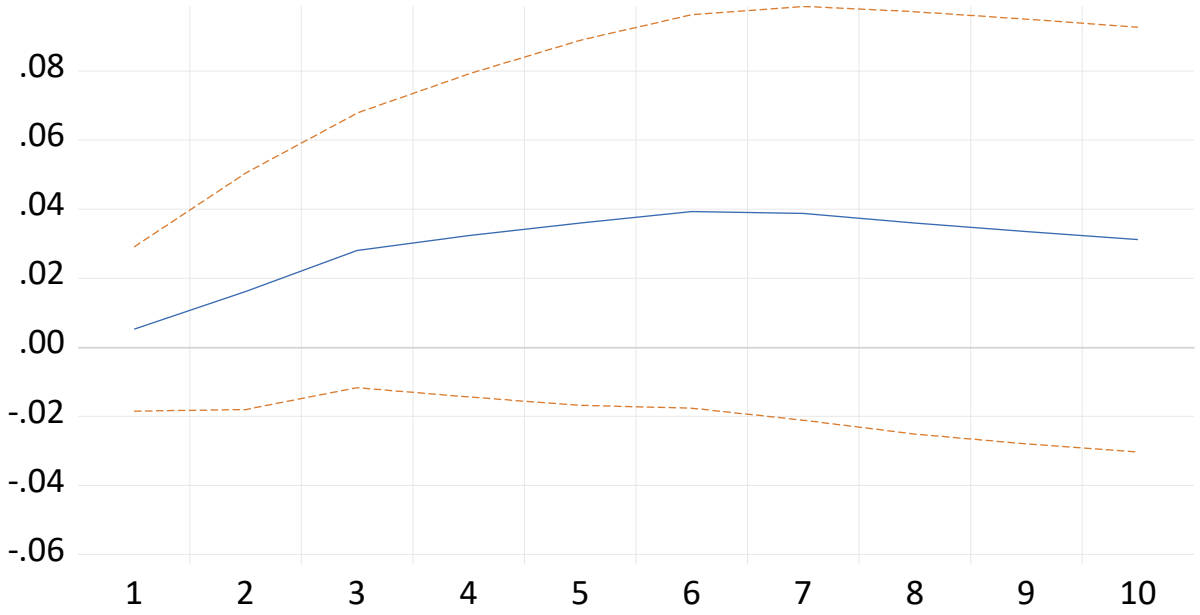


Figure 6 Response of Poland Nettrade to the Exchange Rate

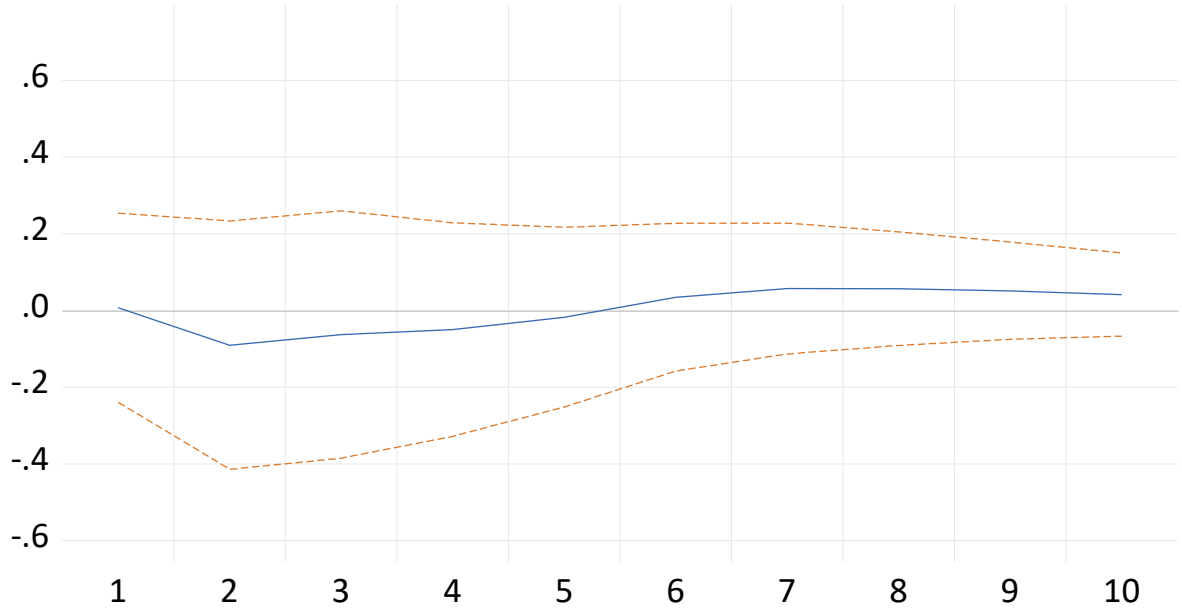


Figure 7 Response of Greece Nettrade to Euro Exchange Rate

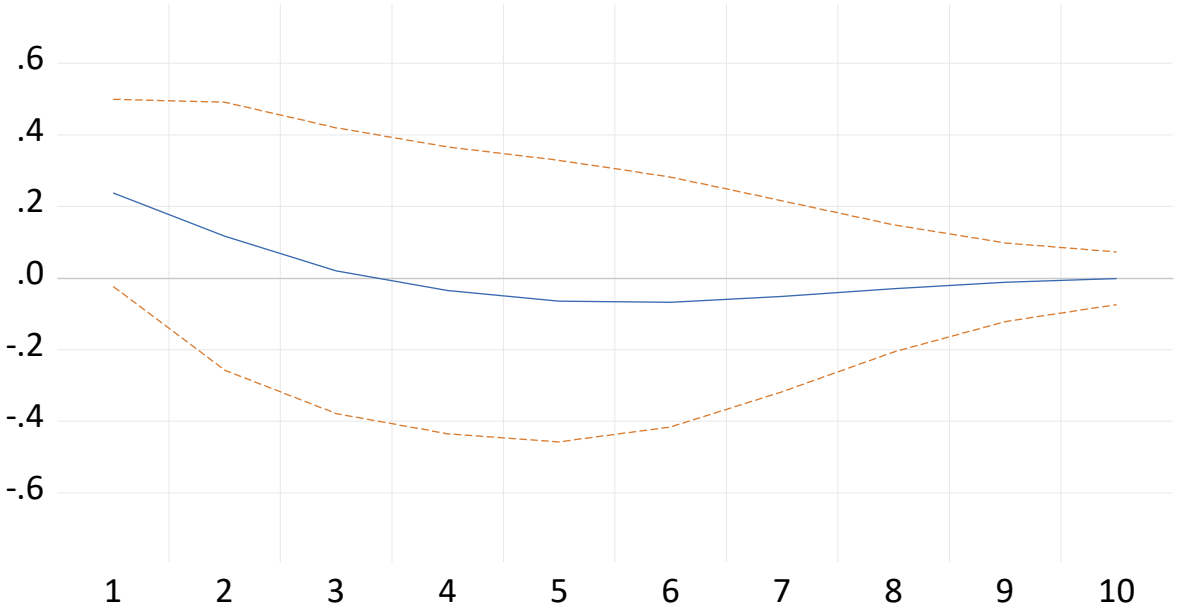


Figure 8 Response of Cost Erica Nettrade to the Exchnge Rate

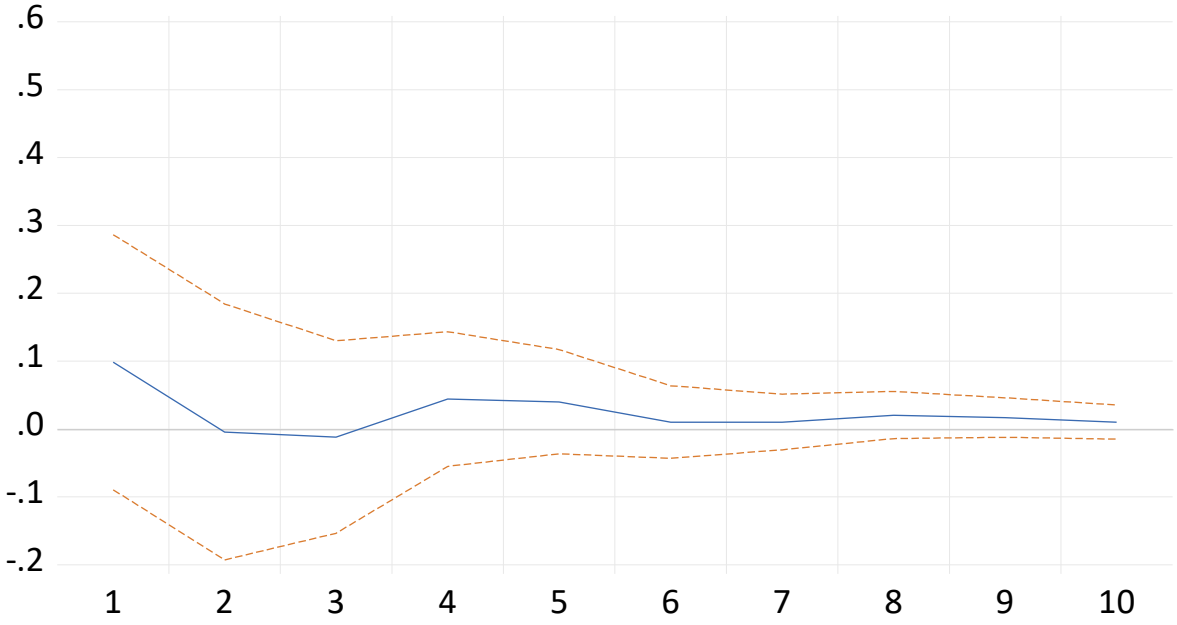
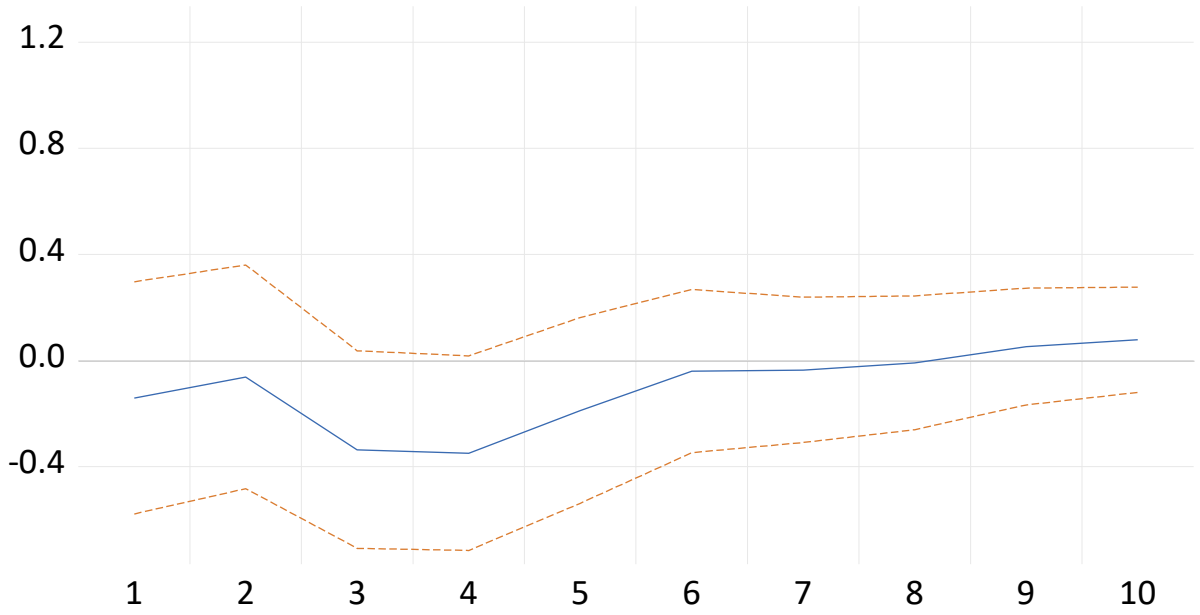


Figure 9 Response of Croatia nettrade to the Exchnge Rate



COMPARISON OF DEVELOPED AND DEVELOPING COUNTRIES STATISTICAL RESULTS

In Figures 1 to 9 IRFs of developed and developing countries in response to one standard deviation change in the exchange rate, are plotted. The result for Hong Kong is not reported because its exchange rate is fixed. In all five cases in figures 1 to five, for developed countries a depreciation of the currency improves the trade balance. In UK case, the exchange rate is measured by the number of US dollar per pound, as such, a depreciation is shown by the fall of the exchange rate. On the contrary, in case of four developing countries, a depreciation of the currency caused deterioration of the trade balance. These results indicate that in developing counties exchange rate has not been used as a mechanism for improving trade balance deficits.

SUMMARY AND CONCLUDING REMARKS

Many developed countries have a flexible exchange rate system where the value of the currency is determined by market forces. Generally, these countries rely on exchange rate fluctuations to improve their trade imbalances. However, in 2018, United States acted contrary to the accepted policy by imposing tariffs on imports from China. China retaliated by introducing tariffs on goods and services imported from the United States. More recently, China has imposed trade restrictions on a wide range of Australian exports; not for trade balance purposes but in retaliation for political statements made about the origins of COVID 19, political freedom in Hong Kong and other actions seen as contrary to Chinese interests.

Economists have unanimously argued against introduction of trade restrictions. In this paper, a group of five developed countries and four developing countries were selected to compare their trade policies. Using VAR statistical technique, it was shown that in the group developed countries, exchange rate changes were used to improve trade deficits. This policy behaviour was not observed for the developing countries. There is an extensive literature that suggests that trade imbalances can be more efficiently adjusted through exchange rate variations than by trade restrictions. As

developing countries mature, we can expect a reduction in trade barriers and more globalized trade. However, recent events where trade restrictions have resulted from trade wars or as retaliation for political statements is not a healthy development. It adds a further negative dimension to the concerns about backward movements towards more restricted trade in the light of the disruption of international supply chains as a result of closed international borders associated with the COVID 19 pandemic.

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Data sources:

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