

Response Letter to the Editor and the Referee Report on “Examining the Asymmetric Effects of Third Country Exchange Rate Volatility on Trade between the U.S. and the EU” (Manuscript Number: jrjm-1761508)

We totally agree with the suggestions of the editor, and the constructive comments and suggestions raised by the referee that help us rewriting a revised version of the paper. We trust that we have addressed in a satisfactory manner all the issues raised. The details of each of the changes made in the revised version of our paper are provided below. The revised portions were marked in red, and the point-by-point responses were listed as below. We believe that the revised manuscript meets the publication standards of JRFM.

Referees 2’s Comments

This paper aims to examine the symmetric and asymmetric effects of the third country exchange rate volatility on the trade flows between the U.S. and EU from January 2003 through March 2021. They find that separating increased volatility from declines and introducing nonlinear adjustment of the volatility shows a more significant outcome than symmetric analysis. Different industries carry distinctive behaviors regarding exchange rate risk, and the third country effect plays a vital role in trade between the U.S. and EU. It shows that increased Chinese yuan-U.S. dollar real exchange rate volatility induces U.S. exporters to boost export to the EU. Decreased third country exchange rate fluctuations will cause the U.S. to reduce imports from the EU.

1. The period of sample is from 2003 to 2021. This period includes several important events (financial crisis of 2008, pandemic crisis, 2020) that affected all economies worldwide. However, there are no dummies variables in the models of the paper.

Authors’ Reply:

Thank you very much for your concerns about the 2008 financial crisis. We added a dummy variable during 2008 in the models of our paper. We found that the estimated results with dummy and without dummy did not show a significant difference in exchange rate volatility. Please refer to Appendix 1 and 2 for the long-run coefficient estimates on the U.S. exports to and imports from the EU with dummy and third country effects in the nonlinear ARDL models.

2. In Table 2. Results of unit root tests. There is no explanation for the unit root test results.

Authors' Reply:

Thank you very much for your comments. We well noted and rewrote results of the unit root tests at lines 201 to 204 on page 7.

3. The authors could have in a separate subsection the diagnostic tests they use to examine the suitability of their models and analyze the test results.

Authors' Reply:

Thank you very much for your advice. Having the diagnostic tests in a separate subsection help the paper's understanding. We rearranged the diagnostic tests in subsections 3.2.5 and 3.2.7 on pages 16 and 20.

4. The authors should put more effort and thoroughly discuss point estimates, estimated effects, and the intuition behind the results backed up by the literature.

Authors' Reply:

Thank you very much for your advice. We emphasized our findings, rewrote our estimates, and cited literature to support our findings on pages 15 and 19.

5. What is the methodological innovation in their studies? How do they overcome the methodological issue in the previous research?

Authors' Reply:

This paper presents the quantitative impact of exchange rate fluctuations on exports and imports, which is relatively new and less used. For example, the largest industry code 84, with an import share of 16.28%. The estimated POS^{CN} coefficient is -0.0777, which implies that a 1% increase in the CNY/USD volatility hurts the exports of bilateral trade by 0.08%.

If aggregated data is used, it will not be able to see that different industries may respond differently to exchange rate fluctuations. So disaggregated data is used. In addition, most of the traditional studies use the linear ARDL model. This paper further considers that the increased and decreased exchange rate fluctuations have different impacts on different industries.

6. The authors do not justify the selection of the present model and variables.

Authors' Reply:

We used models by Bahmani-Oskooee et al. (2013) augmented with the volatility measure of a third country. Furthermore, the diagnostic tests showed that most statistics are insignificant, meaning most models are correctly specified. Besides, almost all F-statistic results showed co-integration between all variables.

7. The authors should further analyze the tests for the existence of asymmetries in the variables. In addition, to make clear the process, they follow to check for the existence of an asymmetric long-run relationship between variables (cointegration). What tests are used, and what do the results show?

Authors' Reply:

If n_5 is not equal to n_6 in eq. (8), implying that the ΔPOS could accept a different lag order than the ΔNEG . Then an asymmetry hypothesis is supported. If the coefficient of $\Delta POS_{t-i,j}$ is different with $\Delta NEG_{t-i,j}$, the short-run asymmetric effects of increased volatility versus decreased volatility will be supported. Our empirical analysis in table 7 and 8 shows that most n_5 is not equal to n_6 in eq. (8) and most coefficient of $\Delta POS_{t-i,j}$ is different with $\Delta NEG_{t-i,j}$, the asymmetry assumptions are supported. Furthermore, the strong evidence of asymmetric by the Wald test rejects the null hypothesis $\sum \hat{a}_{6i} = \sum \hat{a}_{7i}$ for the short-run, $\hat{\pi}_5 = \hat{\pi}_6$ for the long-run model in eq. (8) and $\sum \hat{b}_{6i} = \sum \hat{b}_{7i}$ for the short-run, $\hat{\rho}_5 = \hat{\rho}_6$ for the long-run model in eq. (9). Please see pages 16 and 21.

8. Moderate English changes required.

Authors' Reply:

Thanks for the referee's concern. This revised version has been edited by MDPI Language Editing.

Appendix 1. Long-run Coefficient Estimates on the US Exports to the EU with Dummy and Third Country Effects

in the Nonlinear ARDL Model (8)

Code	(Export Share %)	$\ln IP_t^{EU}$	$\ln REX$	$D08$	$\ln V_t^{EU}$	POS^{CN}	NEG^{CN}	C
84	12.15	1.5489***	-0.1763	0.0148	0.0073	0.0011	-0.0002	14.8247***
88	11.59	2.6791***	-0.5738	-0.0487	0.0656	-0.0795*	-0.0935*	9.0323***
90	10.51	1.1464***	-0.6044***	0.0003	0.0164	-0.0281	-0.0414	15.7767***
30	8.80	0.1303	-0.3858	0.3761*	0.0974	-0.4234	-0.0707	20.5243***
85	8.35	1.6925***	-0.2056*	0.0301	-0.0202	0.0143	0.0098	12.9735***
27	7.13	5.5512**	-5.0997***	-0.1345	0.1761	-0.4166***	-0.4909***	-6.4550
87	6.22	2.7232***	-0.2586	0.3654***	-0.1100***	0.0433	0.0350	7.1458**
29	5.51	1.0004	-1.3928***	-0.2964**	0.0070	-0.0216	-0.0272	15.6448***
71	3.15	2.5084***	-2.1780***	-0.2214	-0.0241	-0.0195	-0.0502	7.1744**
39	3.13	1.4402***	-0.7199***	-0.1114*	-0.0213	0.0102	-0.0036	12.8308***
98	2.79	2.4353***	-1.2830***	-0.0626	0.0018	-0.2132**	-0.2270**	8.0108*
38	2.57	1.4235***	-0.7876***	0.2774***	-0.0181	0.0044	-0.0154	12.5460***

Note: ***, **, * denote significance at the 1%, 5%, 10% level, respectively.

Appendix 2. Long-run coefficient estimates on US imports from the EU with Dummy and third country effects

using the nonlinear ARDL model (9)

Code	Import Share %	$\ln IPI^{US}$	$\ln REX$	$D08$	$\ln V^{EU}$	POS^{CN}	NEG^{CN}	C
84	16.28	3.1616***	-0.6634***	-0.0780	0.0238	-0.0614**	-0.0719**	7.4671***
30	12.53	0.5941**	0.1349	-0.0619	0.0172	0.0166	-0.0181	18.5248***
87	11.58	3.7940***	0.3580	0.1054	0.1139*	-0.1119**	-0.1130**	5.3396
29	6.67	-0.3162	-0.0515	0.1705*	-0.0679	0.0721**	0.0701**	22.2023***
90	6.60	1.6544***	-0.4008***	-0.0417	0.0296*	-0.0284**	-0.0426***	13.5343***
85	6.03	1.7252***	-0.0309	0.1207	0.0180	-0.0339	-0.0453	13.1437***
98	4.19	0.5564	-0.2273	0.0561	0.1221**	-0.0009	-0.0380	18.2213***
27	3.89	4.4688***	-3.2745***	0.0413	-0.0029	-0.0026	-0.0223	-0.3420
88	2.90	2.4327***	-0.6339*	-0.2139*	-0.0111	-0.1132*	-0.1311**	8.5864***
22	2.88	1.4878***	-0.1397	0.0345	-0.0153	-0.0308*	-0.0441**	13.1998***
71	2.08	2.2499***	-0.9009***	0.0352	0.1004	-0.0352	-0.0486	10.0547***
39	1.73	2.0259***	-0.0778	-0.1807***	0.0135	-0.0579***	-0.0737***	10.3971***

Note: ***, **, * denote significance at the 1%, 5%, 10% level, respectively.



We certify that the following article

**Examining the Asymmetric Effects of Third Country Exchange Rate Volatility on Trade
between the U.S. and the EU**

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has undergone English language editing by MDPI. The text has been checked for correct use of grammar and common technical terms, and edited to a level suitable for reporting research in a scholarly journal.

MDPI uses experienced, native English speaking editors. Full details of the editing service can be found at

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