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Exchange rate regimes and global cocoa trade: to float or to peg?

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Abstract: The effectiveness of different exchange rate systems continues to attract the attention of many scholars, however, most discussions on exchange rate regimes have focused on how the phenomenon affects economic growth, economic stability, financial crises, international tourism, and international trade in general. In this study, we explore the effect of exchange rate regimes that has so far escaped the attention of many scholars in the exchange rate literature, the effect of exchange rate regimes on global cocoa trade. STATA statistical tool was employed in analyzing panel data from 10 leading cocoa-producing countries from 1980 to 2016. With the justification of the Hausman test, the fixed effects estimation method was used. The main effect observed was that countries suffered a statistically significant negative effect on net exports if they pegged their currencies to the Euro, but countries with floating exchange rates regimes do not suffer that effect. Therefore, this study recommends that countries adopt a more flexible exchange rate system, particularly if they are exporters of agricultural raw materials and products. Most cocoa-producing countries grow cocoa as a cash crop, thus, rely heavily on the trade of cocoa beans and other product. Therefore, it would be counterintuitive to have all the profits from the trade of cocoa to be wiped out by the rigidity of an exchange rate regime.

Subjects: Economics; Macroeconomics; International Economics; Development Economics

Keywords: exchange rates; regime; peg; float; global; cocoa trade

Subjects: F14; F33

ABOUT THE AUTHORS

Bismark Addai is a Ph.D. student at Zhongnan University of Economics and Law. He is a versatile researcher and his research spans across monetary finance, applied economics, banking, insurance, financial reporting, and auditing.

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PUBLIC INTEREST STATEMENT

In this study, we explore the effect of exchange rate regimes on global cocoa trade. We employ a panel data from 10 leading cocoa-producing countries from 1980 to 2016. With the justification of the Hausman test, the fixed effects estimation method was used. The main effect observed was that countries suffered a statistically significant negative effect on net exports if they pegged their currencies to the Euro, but countries with floating exchange rates regimes do not suffer that effect. The policy implication is that countries adopt a more flexible exchange rate system, particularly if they are exporters of agricultural raw materials and products.

1. Introduction

From the mid-20th century, several scholars have discussed the efficacy of various exchange rate regimes in enhancing competitiveness in transnational trade and their effect on macroeconomic stability (Frankel, 1996; Mussa, 1986; Wickham, 1985). The debate on the effectiveness of different types of exchange rate system is still ongoing and continues to attract the attention of scholars because of the significance of exchange rate in macroeconomic stability and international trade (Bunjaku, 2015; Markiewicz, 2006; Murat, Fluturim, & Luljeta, 2013; Santana-Gallego & Pérez-Rodríguez, 2019). However, most discussions on exchange rate regimes have focused on how the phenomenon affects economic growth, economic stability, financial crises, international tourism, and international trade in general. In this paper, we explore the effect of exchange rate regimes that have so far escaped the attention of many scholars in the exchange rate literature, the effect of exchange rate regimes on global cocoa trade.

Cocoa, around the world, serves as an essential crop: a cash crop for growing countries and a key import for processing and consuming countries. Cocoa is perhaps best known today as the raw material for chocolate, which uses approximately 90% of the world's cocoa production. Most of the world's cocoa is grown in a narrow belt 10 degrees on either side of the Equator, simply because the trees grow very well in humid tropical weather with regular rain and a short dry season. The trees also need temperatures from 21 to 23 degree centigrade, with a reasonably constant rainfall of 1,000 to 2,500 mm per year, are needed without hot dry winds and drought. Current statistics show that Africa produces about 73% of the world's cocoa with Cote D'Ivoire, the world's largest producer, producing about 40% (Philippine Cacao, 2017). Ghana is ranked as the second-largest producer of cocoa beans in the world and also produces about 20% of the world's cocoa.

Cocoa is globally traded, and like many other commodities, this trade is heavily dependent on exchange rates. A country's exchange rate system governs its exchange rate—that is, how much its currency is worth relative to the currencies of other countries (Stone, Anderson, & Veyrune, 2008).

This paper contributes to the understanding of the relationship between exchange rate regimes and global cocoa trade by investigating whether exchange rate regimes affect global cocoa or not. In this study, we employ a 37-year panel data set on 10 leading cocoa trading countries in the world to estimate how exchange rate regimes specifically affect cocoa trade. The next section contains previous literature on exchange rate regimes and trade, while section three covers the methodology used in this study. Section four presents the analyses of the data, and the final section concludes the study and also provides policy recommendations.

2. Literature review

Economic thought and theories have long drawn strong relations between exchange rates and international trade as well as between agriculture and exchange rates. The following is the review of the existing body of knowledge on the subject under consideration focusing on the sub-themes: Exchange rates, Agriculture and International Trade; Exchange rate regimes.

The theory of international trade was first elaborated by the classical economists (Smith 1762). This theory proposition was a response to the mercantilist inception of contradiction with the liberal doctrine that emphasized the significance of individuals and reckoned the nation just as the summation of its residents. The Hecksher-Ohlin model is an improvement in the international trade model (Ohlin, 1933). Samuelson (1971) modified the classical international trade model to the model that uses neoclassical production functions with three factors of production, countries and two goods. The most recent models of international trade are those that use the concept of intra-industrial trade. For all these theories, there is the notion that international trade cannot be done without money.

The relationships between the dynamics of exchange rates and the international trade are explained using the following theories: the J curve theory, the absorption theory, the elasticity theory, the monetarist theory, the neoclassical theory, and the Mundell-Fleming theory (Fleming

1962; Mundell, 1963). In the context of the Mundell–Fleming theory, the pegged and floating exchange rate regimes produce diametrically opposing results regarding the effectiveness of monetary and fiscal policies. Under a floating regime, monetary policy is very effective while under the pegged regime, fiscal policy is very effective.

The effect of exchange rates on trade has been widely acknowledged by economists. In the last decade, the interest and sensitivity of agricultural producers to the significance of exchange rates in pricing has been high. Falling farm prices have been strongly attributed to the firming of the dollar. It is against this backdrop that a review of literature on the place of exchange rates in pricing is undertaken.

Globalisation, technology and international trade dynamics have put the spotlight on the role of exchange rate in pricing and valuation of equipment and farm produce. The role of exchange rates has been downplayed in agricultural economics until recently. Schuh (1974) pioneered studies that examined the nexus between exchange rates and agricultural trade. He posited that decreasing agricultural exports was attributable to a comparatively strengthening dollar which gave other countries the lower pricing advantage.

Schuh brought to light the nexus between agriculture products, exchange rates and factor markets. Schuh argued that the influence of exchange rates permeates every sphere of agriculture, unlike other variables that affected agriculture in parochial ways. Grennes (1975) made inroads to Schuh's work, hypothesising a possible shift in the distribution of income among countries, as well as between producers and consumers in the United States due to exchange rate dynamics. He claimed that the need for a policy for exchange rates is neutralised by the offsetting of the effects of subsidies on agricultural exports and the effects of overvaluation which is directly correlated with such subsidies.

On his part, Schuh (1975) found that while subsidies peaked in the 1963–1964 fiscal year, overvaluation of the dollar didn't hit its peak until 1971. His logical conclusion was that there is a little or no correlation between the scale of the subsidies and the extent of overvaluation. In 1984, Schuh again attributed changes in trade balances to changes in the dollar exchange rate. It is worth mentioning that the emergence of well-integrated international capital markets was a direct consequence of the advent of flexible exchange rates. The chain has been changes in monetary policy triggering changes in capital flows across borders, which ends with changes in the dollar's value. The impact of these changes in the dollar's value on trade balances could not be overemphasised. Thus, changes in monetary and fiscal policies take a very great toll on export-led agriculture.

Orden (2000) asserted that the macroeconomic thought in Schuh's work was overstretched. A process to review policy on price support was initiated when the dollar began to depreciate. This propelled U.S. exports, reduced gluts, and contributed to the easing of acreage supply controls, which boded well for agriculture. Some fluctuations in prices of agricultural goods are explained by changes in exchange rates and the accompanying changes in impactful monetary shocks. Global market competitiveness, local agricultural policies and commercial relations are influenced by macroeconomic conditions. The foregoing, according to Orden (2000), makes a strong argument for the significance of exchange rates to agriculture.

Historical studies on exchange rate regimes show that countries have used the following exchange rate regimes: fixed exchange rates regime, floating exchange rate regime, and the fixed or floating exchange rate regime (Frenkel & Rapetti, 2010). It is worth mentioning that within these regimes are intermediate and sub regimes such as free float, managed (dirty) float, band, crawling peg, crawling band, and the currency basket peg. The optimal exchange rate and monetary systems have been an issue of discussion since the beginning of the 1970s with the breakdown of Bretton Woods's system (Murat et al., 2013). Murat et al. (2013) point to a large body of theoretical and empirical research that attempts to identify which exchange rate regime is more appropriate for developed and least developed market economies. Their disposition is in line with assertions made earlier by other scholars like Ghosh, Gulde, Ostry, and Wolf (1997), Frankel (1996), Moosa (2006), Mundell (1961), and McKinnon

(1963). All these scholars pointed out however that, the determination of the system of exchange rate for countries in transition has been substantially different compared to the developed ones.

Earlier researches seem to point to economic size and openness as the fundamental determinants of a country's exchange rates regime as shown in Mundell (1963) and McKinnon (1963). The thrust of these enquiries is that fixed-rate regimes are more likely to be found in open and small economies than comparatively closed and large economies. Recent studies have also re-echoed the foregoing thought and underscored the need to consider size of an economy and trade concentration in terms of geography (Hagen & Zhou, 2005; Markiewicz, 2006). Other studies have found variables such as performance of the macroeconomy, integration of global financial markets, development of the financial sector, and issues of political economics to be fundamental (Murat et al., 2013).

Melvin (1985) proposed that countries that are subject to "real shocks" (for example, raw material exporters) would benefit more from flexible exchange rate which might be necessary to fulfill the external condition of competitiveness maintained, but Murat et al. (2013) argued to the contrary that countries prone to "nominal shocks" (for instance, unstable monetary conditions) would benefit more from fixed exchange rates that allow credibility.

2.1. Summary of the exchange rate regimes in the selected countries

This paper seeks to analyze the impact of exchange rate regimes on global cocoa trade. A closer look is given to the 10 cocoa producers and exporters in the world. These are some of the largest producers and exporters of cocoa beans in the world as published by Mattyasovszky (2018). The countries considered in this research are Brazil, Cameroon, Cote D'Ivoire, Dominican Republic, Ghana, Indonesia, Nigeria, Sierra Leone, Togo, and Venezuela. These countries are split between those with fixed exchange rates; Cote D'Ivoire, Cameroon, Togo, Venezuela, and those with flexible exchange rate regimes; Brazil, Dominican Republic, Ghana, Indonesia, Sierra Leone, and Nigeria.

2.1.1. Brazil

According to information available on the FAO and IMF websites, Brazil had a currency pegged to the US dollar between 1978 and 1991. They have since 1991 floated their exchange rates. The change in regime is one of the reasons why Brazil is of special interest in this research.

2.1.2. Cameroon

Like many other Francophone African countries, the Republic of Cameroon has an exchange rate pegged to the French francs. After the introduction of the Euro in 1999, all these countries switched their peg to the Euro.

2.1.3. Cote D'Ivoire

Similar to the system in Cameroon, the Republic of Cote D'Ivoire also switched its peg from the French francs to the Euro in 1999.

2.1.4. Dominican Republic

Similar to Brazil and many other South American countries, the Dominican Republic also had its currency pegged to the US dollar between 1978 and 1984. After 1984, they switched to a floating exchange rate regime.

2.1.5. Ghana

Ghana is one of the few countries in this research which has never made an exchange rate regime switch. The Republic of Ghana has had a floating exchange rate regime since they attained independence in 1957.

2.1.6. Indonesia

The third-largest producer of cocoa in the world, Indonesia, has also always had a floating exchange rate regime. They have never switched between exchange rate regimes in their entire history.

2.1.7. Nigeria

The largest country in West Africa, in terms of population, Nigeria has also had a float exchange regime since they gained independence in 1960.

2.1.8. Sierra Leone

One of the smallest producers of cocoa in the West African region, Sierra Leone has always had a floating exchange rate regime.

2.1.9. Togo

A francophone West African country, just like many others, Togo had a currency pegged to the franc and switched over to peg it to the Euro in 1999.

2.1.10. Venezuela

This is a unique country in this research since it is the only country with a currency pegged to the dollar. This currency has been pegged to the dollar for the entire study period, 1980–2016.

3. Research methodology

3.1. Data and variables

The data for this study were panel data, also known as longitudinal or cross-sectional time series data, which we employed in observing exchange rate regimes and the behavior of cocoa-producing countries across a period of 37 years (1980–2016). The study period was limited to the year 2016 because the data on the variables of interest were only available up to the year 2016. Annual data were collected on the following variables: exchange rates, total cocoa exports of the country, total cocoa imports of the country, the gross domestic products, the real exchange rates for each country, and the prevailing exchange rate regime for the country. The panel data format allowed a degree of control for variables that could not be measured across countries; that is, it accounts for individual heterogeneity as explained by Baltagi (2005). The exchange rate data, cocoa import, and the export data for all 10 countries in the sample were obtained from the Food and Agriculture Organization (FAO) statistics database (www.fao.org). The GDP data were obtained from the world bank database, specifically, the world bank county indicators (www.worldbank.org). Table 1 provides a summary of the variables used in this study, how the variables were measured, and the sources of data.

Table 1. Variables and measurement

Variable	Measurement	Source
<i>Net Exports</i>	The net (export less imports) quantity of cocoa beans exported annually (in tonnes)	FAO
<i>GDP</i>	gross domestic product (millions of dollars)	World Bank
<i>Real Exchange</i>	real exchange rates	FAO
<i>Openness</i>	Openness to trade measured by exports plus imports all scaled by GDP	FAO
<i>Exchange regime</i>	1 if a country has a pegged exchange rates regime, 0 for floating.	FAO
<i>Pegged to Euro</i>	1 if the country's currency is pegged to the Euro, 0 for otherwise.	FAO

3.2. The empirical model

To analyze the effects of the exchange rates regime on the net export of cocoa trade of the selected countries, we employ a standard model as used in earlier researchers including Berlin, Kimmel, Have, and Sammel (1999). The general simplified model is given as:

$$NE = f(ERR, C) \tag{1}$$

where net export, NE is given as a function of exchange rate regime (ERR) and other variables, C , which represents control variables in this model. In this study, we used the fixed effect estimation method (FE) with the justification of the Hausman Test. The Hausman test results illustrated in Table 4, show that $Prob > \chi^2 = 0.0000$, indicating that the null hypothesis “random effect model is appropriate” can conveniently be rejected and the fixed effect model is suitable. The FE model is specified below.

$$\ln NE_{it} = \alpha + \beta_1 \ln RER_{it} + \beta_2 \ln GDP_{it} + \beta_3 \ln OPN_{it} + \beta_4 ERR_i + \beta_5 PEU + \varepsilon_{it} \tag{2}$$

where NE_{it} is Net exports of cocoa for country i at time t . RER_{it} is the real exchange rate, GDP_{it} is the gross domestic product of a country, and OPN_{it} is Openness to trade. ERR_{it} is a dummy for exchange rate regime; 0 = float 1 = pegged. PEU_{it} is a dummy for whether a currency is pegged to the Euro; 1 = Yes, 0 = No; ε_{it} is the error term while α is the unknown intercept for each entity.

When using FE, we presume that something within the individual group and/or time may bias or impact the explanatory variables, and we need to control for that. This is the rationale behind the assumption that there could be a correlation between the entity’s error term and predictor variables. The FE model removes the effect of those time-invariant characteristics so that we can estimate the net effect of the predictors on the explained variable (Oscar, 2010). So, in this case, we expect the results of our FE model to show the net effect of exchange rate regimes. According to Greene (2007), the crucial distinction between fixed and random effects (RE) models is to ascertain if the unobserved single and stand-alone effect includes elements that are correlated with the independent variables in the model or not, and if these effects are stochastic or not. To find out exactly which of the two; fixed effect or random effect, models fits the equation better, a Hausman test was conducted and the result is presented in Table 4.

4. Data analyses and results

The summary statistics of the variables were compiled in a table to show the measurement, means and standard deviations of the variables in our FE model. These statistics are shown in Table 2. The table shows the means and standard deviations which measures the variabilities in the variables used in explaining cocoa trade in the selected countries.

From Table 2, it could be seen that the exchange rate regime has the least variation around its mean, followed by the pegged to euro variable. Trade openness and real exchange rate

Table 2. Summary statistics					
Variables	Notation	Mean	SD	Min	Max
Net Exports	NE	163,719.50	241,205.60	-237,408.00	1,285,988.00
Gross Domestic Product	GDP	149,361.40	353,974.20	4445.00	2,616,000.00
Real Exchange Rate	REE	135.66	145.59	47.34	267.00
Openness to Trade	OPN	188.30	284.95	89.50	257.00
Exchange rate regime	ERR	0.28	0.45	0.00	1.00
Pegged to Euro	PEU	0.69	0.46	0.00	1.00

moderately vary around their means, while GDP has the highest variation around its mean. The ranking of the standard deviations of the variables indicates that the exchange rate regime variable has the highest degree of reliability in terms of the contributions of the various variables in explaining the variations in the dependent variable, net exports of cocoa.

The Fixed effect model and the Random effect model were both run for the model we developed. The results are compared in Table 3.

Table 3. Fixed effect model versus random effect model

Variables	RE	FE
	<i>Ln Net export</i>	<i>Ln Net export</i>
Ln GDP	0.816*** (0.0228)	0.844*** (0.0224)
Ln Real Exchange	0.180*** (0.0317)	0.196*** (0.0306)
Ln Openness	1.062*** (0.0212)	1.081*** (0.0208)
Exchange regime	0.105 (0.0712)	0.0900 (0.0694)
Pegged to Euro	-0.373*** (0.0471)	-0.402*** (0.0454)
Constant	-2.405*** (0.406)	-2.743*** (0.348)
Observations	341	341
R-squared	0.892	0.921
Number of stateno	10	10

Standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1

The output for both models shows that exchange rate regimes do not have a significant effect on Net exports, but the results show that pegging a country's currency to the Euro has a negative effect on net exports. From the results, it is also glaring that openness to trade has a significant positive effect on net exports, so do Gross domestic products and real exchange rates.

Table 4. Hausman output

Variables	Coefficients			
	(b)	(B)	(b-B)	sqrt (diag(V _b -V _B
	Fixed	Random	Difference	S.E
LnGDP	0.84422	0.8131898	0.0310322	0.0055349
LnRER	0.195653	0.1805704	0.0150825	0.0038057
LnOPN	1.081368	1.0625010	0.0188673	0.0047801
ERR	0.0899983	0.0773153	0.0126830	0.0122474
PEU	-0.4923632	-0.4474063	-0.0449569	0.0145602

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

Chi2 (5) = (b-B)' [(V_b-V_B)⁻¹] (b-B)

= 33.97

Prob>chi2 = 0.0000

A Hausman test was run, and the results of the test are presented in Table 4. The test shows a chi-square value of 33.97 and a Prob>Chi2 of 0.000. This indicates that the differences in coefficients are systematic, and we should choose the FE (“within”) model over the RE (“between”) model. Hence, we employ the FE as the main panel estimation method in this study.

After the Hausman test gave the best approach to use, we run a robust version of the model. The standard errors (SE) for the FE models were corrected, and we did not record a significant difference in the coefficients per se, but the SE for all the coefficients changed. The results of the robust versions of the FE models are presented in Table 5.

Table 5. The fixed effect model with robust and clustering corrections

Variables	FE	FE cluster	FE robust
	<i>Ln Net export</i>	<i>Ln Net export</i>	<i>Ln Net export</i>
<i>Ln GDP</i>	0.844*** (0.0224)	0.844*** (0.0788)	0.844*** (0.0788)
<i>Ln Real Exchange</i>	0.196*** (0.0306)	0.196*** (0.0354)	0.196*** (0.0354)
<i>Ln Openness</i>	1.081*** (0.0208)	1.081*** (0.0985)	1.081*** (0.0985)
<i>Exchange regime</i>	0.0900 (0.0694)	0.0900*** (0.0237)	0.0900*** (0.0237)
<i>Pegged to Euro</i>	-0.492*** (0.0840)	-0.492*** (0.103)	-0.492*** (0.103)
Constant	-2.714*** (0.346)	-2.714* (1.202)	-2.714* (1.202)
Observations	341	341	341
R-squared	0.921	0.921	0.921

Standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1

The coefficient for the exchange rate regime also became significant. From the robust model, we observe that exchange rate regimes do have a positive effect on the net exports of cocoa in the 10 cocoa-producing countries we selected. We also saw that pegging a country’s currency to the Euro has a significant negative effect on its net exports of cocoa. The cluster version of the model was also run, but the results were not significantly different from the robust correction mostly because the data size is not so big to show a significant clustering problem. The conclusions from the clustered method are just the same as the robust method.

5. Research implications and conclusion

A lot of the earlier research on the topic of floating as against pegged exchange rate regimes, including Calvo (1999), Hanke and Schuler (1998) and Hausmann (2000), have different views on the subject. As a result, the so-called two-corner perspective on exchange rate regimes has become increasingly popular (Edwards et al., 2003). As Edwards et al. cited, supporters of fixed regimes, currency boards, and dollarization, have argued that these exchange rate systems provide credibility, transparency, very low inflation, and monetary and financial stability (Calvo, 1999, Hanke and Schuler 1998; Hausmann, 2000). On the other hand, according to models in the Mundell–Fleming tradition, including some modern versions, such as Chang and Velasco (2000), a limitation of super-fixed regimes is that negative external shocks tend to be amplified (Edward et al., 2003).

The results discussed in this paper speak to the Mundell–Fleming argument, seeing that having a pegged exchanged rate regime to the Euro has a significant negative effect on the net exports of cocoa for countries such as Cote D’Ivoire, Cameroon and Togo. Countries with floating exchange rates regimes do not suffer these effects. The policy implications would then be, to advise countries to adopt a more flexible exchange rate system particularly if they are exporters of agricultural raw materials and products. Most cocoa-producing countries grow cocoa as a cash crop, thus, rely heavily on the trade of cocoa beans and other product. Therefore, it would be counterintuitive to have all the profits from the trade of cocoa to be wiped out by the rigidity of an exchange rate regime. This study could be expanded further by adding a couple more countries and estimating the exact impact of exchange range regimes on broader sectors of global trade, and how these regimes affect global prices of commodities.

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References

- Baltagi, B. H. (2005). *Econometric analysis of panel data* (3rd ed.). New York: England, JW & Sons.
- Berlin, J. A., Kimmel, S. E., Have, T. R. T., & Sammel, M. D. (1999). An empirical comparison of several clustered data approaches under confounding due to cluster effects in the analysis of complications of coronary angioplasty. *Biometrics*, 55(2), 470–476. doi:10.1111/j.0006-341X.1999.00470.x
- Bunjaku, F. (2015). Exchange Rate Regimes – A periodical overview and a critical analysis of exchange rate regimes in Kosovo. *Academic Journal of Business, Administration, Law and Social Sciences*, 1(1), 40–46.
- Calvo, G. A. (1999). *Fixed versus flexible exchange rates: Preliminaries of a turn-of- millenium rematch*. University of Maryland.
- Chang, R., & Velasco, A. (2000). Exchange-rate policy for developing countries. *The American Economic Review*, 90(2), 71–75. doi:10.1257/aer.90.2.71
- Edwards, Sebastian, & Igal Magendzo, I. (2003). “dollarization and economic performance: what do we really know?”. *International Journal Of Finance And Economics*, 8(4), 351–363.
- FAO. Retrieved from www.fao.org/statistics/databases
- Frankel, J. (1996). Recent exchange rate experience and proposals for reform. *American Economic Review*, 86(2), 153–158.
- Frenkel, R., & Rapetti, M. (2010, April). *Concise history of exchange rate regimes in Latin America*. Center for Economic and Policy Research. Amherst, USA.
- Ghosh, A. R., Gulde, A. M., Ostry, J. D., & Wolf, H. C. (1997). *Does the nominal exchange rate regime matter?*. National Bureau of Economic Research. (No. w5874). Cambridge (MA): USA
- Greene, William H. (2007). *Fixed and Random Effects Models for Count Data*. NYU Working Paper No. EC-07-16. Available at SSRN: <https://ssrn.com/abstract=1281928>
- Grennes, T. (1975). The exchange rate and US agriculture: Comment. *American Journal of Agricultural Economics*, 57(1), 134–135. doi:10.2307/1238856
- Hagen, J.-V., & Zhou, J. (2005). The choice of exchange rate regime: An empirical analysis for transition economies. *The Economics of Transition and Institutional Change*, 13(4), 679–703. doi:10.1111/j.0967-0750.2005.00237.x
- Hanke, Steve H. and Schuler, Kurt, *Currency Boards and Free Banking* (1998). K. Dowd and R. H. Timberlake, Jr. (eds.), *Money and the Nation State*, Transition Publishers, 1998. Available at SSRN: <https://ssrn.com/abstract=2204726>
- Hausmann, R. (2000). Latin America: No fireworks, no crisis?. In *Global financial crises* (pp. 27–47). Boston, MA: Springer US.
- Marcus, Fleming, J. (1962). Domestic financial policies under fixed and floating exchange rates. *Imf Staff Papers*, 9, 369–379.
- Markiewicz, A. (2006). Choice of exchange rate regimes in transition economies: An empirical analysis. *Journal of Comparative Economics*, 34(3), 484–498. doi:10.1016/j.jce.2006.06.004
- Mattyasovszky, M. (2018, September 28). Top 10 cocoa producing countries. Retrieved from <https://www.worldatlas.com/articles/top-10-cocoa-producing-countries.html>
- McKinnon, R. I. (1963). Optimum currency areas. *The American Economic Review*, 53(4), 717–725.
- Melvin, M. (1985). The choice of an exchange rate system and macroeconomic stability. *Journal of Money, Credit and Banking*, 17(4), 467–478. doi:10.2307/1992442
- Moosa, I. (2006). *Exchange rate regimes: Fixed, flexible or something in between?*. New York, NY: Springer.
- Mundell, R. (1963). Capital mobility and stabilization policy under fixed and flexible exchange rates. *Canadian Journal of Economics and Political Sciences*, 29, 475–485. doi:10.2307/139336
- Mundell, R. A. (1961). A theory of optimum currency areas. *The American Economic Review*, 51(4), 657–665.
- Murat, S., Fluturim, S., & Luljeta, S. (2013). An empirical analysis of the exchange rate regime in the Republic of Macedonia. *International Journal of Academic Research in Economics and Management Sciences*, 2(6), 135–149.
- Mussa, M. (1986). Nominal exchange rate regimes and the behaviour of real exchange rates. *Carnegie Rochester Conference Series on Public Policy*. 25., 117–214, USA: University of Chicago.

- Ohlin, B. (1933). *Interregional and international trade*. Cambridge: Harvard University Press.
- Orden, D. (2000). Exchange rate effects on agricultural trade and trade relations. *Policy Harmonization and Adjustment in the North American Agricultural and Food Industry*, 6.
- Oscar, T. (2010). Getting Started in Fixed/Random Effects Models using R. Princeton University.
- Philippine Cacao. (2017). Philippine Cacao industry roadmap 2017–2022. Retrieved from http://bpi.da.gov.ph/bpi/images/PDF_file/Cacao%20Industry%20Roadmap%20-%20Signed%20%20March%2010,%202017.pdf
- Samuelson, P. (1971). Ohlin was right. *Swedish Journal of Economics*, 73(4), 365–384. doi:10.2307/3439219
- Santana-Gallego, M., & Pérez-Rodríguez, J. V. (2019). International trade, exchange rate regimes, and financial crises. *North American Journal of Economics and Finance*, (47), 85–95. doi:10.1016/j.najef.2018.11.009
- Schuh, G. E. (1975). The exchange rate and US agriculture: Reply. *American Journal of Agricultural Economics*, 57(4), 696–700. doi:10.2307/1238889
- Schuh, G.E. (1974). “the exchange rate and u.s. Agriculture.” *American Journal Of Agricultural Economics*, 56,(1) (1974).
- Smith, Adam [1762]. Early draft of part of the wealth of nations. In *The Glasgow edition of the works and correspondence of Adam Smith*, Vol. 5, eds. Ronald L. Meek, D. D. Raphael, and Peter Stein. Oxford: Oxford University Press, 562–581.
- Stone, M., Anderson, H., & Veyrune, R. (2008). Back to basics-exchange rate regimes: Fix or Float? *Finance and Development-English Edition*, 45(1), 42–43.
- Wickham, P. (1985). The Choice of exchange rate regime in developing countries. *IMF Staff Papers*, 32(2), 248–288. doi:10.2307/3866841
- World Bank Country indicator. <https://data.worldbank.org/indicator>



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