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**THE EXCHANGE RATE PASS-THROUGH TO  
INFLATION, INFLATION PERSISTENCE, AND  
THRESHOLD INFLATION RATE OF WEST AFRICAN  
COMMONWEALTH COUNTRIES**



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**DOCTOR OF PHILOSOPHY  
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NOVEMBER 2019**

**THE EXCHANGE RATE PASS-THROUGH TO INFLATION, INFLATION  
PERSISTENCE, AND THRESHOLD INFLATION RATE OF WEST  
AFRICAN COMMONWEALTH COUNTRIES**



**Thesis Submitted to  
School of Economics, Finance and Banking,  
Universiti Utara Malaysia  
In Fulfillment of the Requirement for the Degree of Doctor of Philosophy**



**Kolej Perniagaan**  
(College of Business)  
**Universiti Utara Malaysia**

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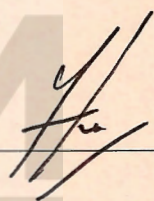
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(Programme of Study) : Doctor of Philosophy (Economics)

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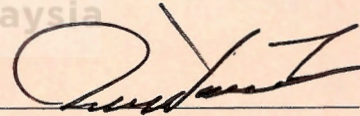
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## ABSTRACT

High inflation rate and currency devaluation prevailed to be among the everyday challenges of West African Commonwealth Countries (WACCs). Additionally, the majority of the WACCs are unable to curtail and maintain inflation rate at single digit, for registering meaningful economic growth and development. This study aims to analyze the exchange rate pass-through (*ERPT*) to inflation of WACCs during 1980 – 2016, examine the inflation persistence of WACCs, and establish a threshold-inflation rate by which it is inimical to the economic growth of WACCs during 1970 – 2016. Data were analyzed using Autoregressive Distributed Lag Model (ARDL), Autoregressive (AR) Model, and the Conventional Threshold Model of regime-switching. The ARDL results show that during the short-run, the existence of immediate and complete *ERPT* is discovered in Ghana, the Gambia and Sierra Leone, whereas no *ERPT* in Nigeria. The long-run results reveal the existence of complete and positive *ERPT* in all countries. The AR result shows that high persistence inflation is associated with the first-year lag inflation rate in all the countries in addition to the second year-lag inflation of the Gambia alone. Meanwhile, in Nigeria, the second-year lag inflation is associated with low inflation persistence. It is the third-year lag inflation rate that has an association with low inflation persistence in the Gambia. The results of the threshold model indicate that the lower threshold inflation rates of WACCs are single-digit in all the WACCs except Nigeria, which has double-digit, while the upper threshold inflation rates are double-digit in Nigeria and Ghana and single-digit in the Gambia and Sierra Leone. This study suggests import substitutions and export promotions programs to stabilize exchange rate. Targeted inflation rates are achievable if the inflation-targeting policy is strengthened.

**Keyword:** exchange rate, inflation, inflation persistence, threshold inflation rate, West African Commonwealth Countries

## ABSTRAK

Kadar inflasi dan penurunan nilai mata wang yang tinggi adalah antara cabaran harian Negara-negara Komanwel Afrika Barat (WACCs). Majoriti WACCs tidak mampu mengurangkan kadar inflasi apatah lagi mengekalkan kadar inflasi satu digit bagi mencatatkan pertumbuhan dan perkembangan ekonomi yang bermakna. Kajian ini bertujuan untuk menganalisis *Exchange Rate Pass-Through (ERPT)* inflasi WACCs bagi tempoh 1980 - 2016, meneliti keterusan inflasi WACCs, dan mengenalpasti kadar inflasi ambang yang boleh memudaratkan pertumbuhan ekonomi WACCs bagi tahun 1970 – 2016. Data dianalisis menggunakan Model Lat Tertabur Autoregresif (ARDL), Model *Autoregressive (AR)*, dan Model Ambang Konvensional Penukaran Rejim digunakan dalam analisis kajian ini. Keputusan ARDL menunjukkan bahawa dalam jangka pendek, kewujudan *ERPT* yang serta-merta dan lengkap ditemui di negara Ghana, Gambia dan Sierra Leone, sedangkan tiada *ERPT* di Nigeria. Hasil jangka panjang mendedahkan kewujudan *ERPT* yang lengkap dan positif di semua negara. Keputusan AR pula menunjukkan bahawa keterusan inflasi yang tinggi dikaitkan dengan kadar inflasi lag tahun pertama di semua negara sebagai tambahan kepada inflasi lag tahun kedua bagi negara Gambia sahaja. Sementara itu, di Nigeria, inflasi lag tahun kedua dikaitkan dengan ketegaran inflasi yang rendah. Kadar inflasi pada tahun ketiga mempunyai hubungan dengan keputusan inflasi yang rendah di Gambia. Keputusan model ambang menunjukkan bahawa kadar inflasi ambang bawah bagi semua WACCs adalah satu digit kecuali Nigeria yang mencatatkan dua angka, manakala negara kadar inflasi ambang atas adalah dua digit di Nigeria dan Ghana, dan satu digit di Gambia dan Sierra Leone. Kajian ini mencadangkan supaya penggantian import dan promosi eksport diberikan perhatian serius bagi menstabilkan kadar pertukaran. Kadar inflasi yang disasarkan akan dapat dicapai jika dasar penyasaran-inflasi diperkukuhkan.

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**Kata kunci:** kadar pertukaran, inflasi, ketegaran inflasi, kadar inflasi ambang, Negara-negara Komanwel Afrika Barat

## ACKNOWLEDGMENT

All praises and all forms of gratitude are due to Allah, the lord of the worlds, the most merciful, for making all my achievements possible, upon him, we depend for our sustenance and flourishing. May his peace and blessings be upon to our beloved prophet, the messenger of Allah Prophet Muhammad (S.A.W).

It is necessary to express my sincere appreciation to my supervisors; Dr. Mohamad Helmi Hidthiir and Prof. Dr. Sallahuddin Hassan for their guidance, support, and supervision during the entire period of my study. I learned from their vast knowledge that improved the quality of the work, and I will always appreciate them. May Almighty Allah reward them, appropriately.

My sincere appreciation and gratitude to my parents; late Alhaji Hamid Danlami and Hajiya Ummulkhairi Yakubu Wanka, Alhaji Aliyu Abdullahi and Hajiya Aishatu Abubakar for their parental support and guidance, also to all my brothers and sisters for their encouragement and support in one way or the other. I have to mention Dr. Abubakar Hamid Danlami, a brother and colleague for his comments and contribution that improves the quality of the work. I appreciate the management of Bayero University, Kano and School of Continuing Education for approving my study leave to UUM, may Allah's support continue to be with you always.

I'm also grateful to the Ph.D. examination committee, at both proposal and Viva stages, which consist of Assoc. Prof. Dr. Hussin Abdalluh, Assoc. Prof. Dr. Nor Aznin Abu Bakar, Assoc. Prof. Dr. Lim Hock-Eam, and the external examiner Assoc. Prof. Dr. Saifuzzaman Ibrahim. I also appreciate Prof. Dr. Nor Hayati Ahmad and Prof. Emeritus Dr. Salim A. Rasheed for being part of my tutors during the course-work period of the study. I also appreciate SEFB JIL committee for their effort and contribution during my study.

Special appreciation and gratitude to my family; first my beloved wife Aishatu Nazeefa Aliyu, Muhammad Ibrahim Danlami, Ummulkhairi Ibrahim Danlami and Hamid Ibrahim Danlami may Almighty Allah support, protect and bless you all.

Special gratitude to my colleagues, friends, relatives, tutors, students, brothers and sister, whose names cannot be mentioned here. I'm also gratitude to Mahmud Ahmad Tijjani whom I learned a lot from. Finally, I appreciate the effort of the family of late Alhaji Hamid Danlami among them are Jibril, Amina, Hauwa'u, Ibrahim, Zainab, Hassan, Hussain, Mustapha, Abubakar and the rest, for their encouragement and support towards accomplishing this work, may Almighty Allah bless you all.

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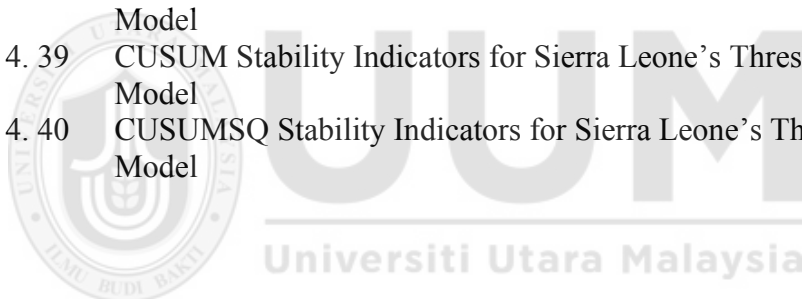
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## LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterion
AR	Autoregressive Model
ARDL	Autoregressive Distributed Lag Model
CPI	Consumer Price Index
CUSUM	Cumulative Sum of Recursive Residuals
CUSUMSQ	Cumulative Sum of Recursive Residuals Squares
DSGE	Dynamic Stochastic General Equilibrium
ECT	Error Correction Term
ERPT	Exchange Rate Pass-Through
GDP	Gross Domestic Products
GMM	Generalized Method of Moment
HQC	Hannan-Quinn Information Criterion
IMF	International Monetary Fund
IRF	Impulse Response Function
IT	Inflation Targeting
LSTP	Logistic Smooth Transition Pass-Through
OLS	Ordinary Least Squares
SAP	Structural Adjustment Program
SIC	Schwarz's Information Criterion
USD	United State Dollars
VAR	Vector Autoregressive Model
VD	Variance Decomposition
VECM	Vector Error Correction Model
VIF	Variance Inflation Factor
WACCs	West African Commonwealth Countries
WACs	West African Countries
WAFCS	West African French-speaking Countries
WDIs	World Development Indicators

# CHAPTER ONE

## INTRODUCTION

This chapter presents the general introduction of the research. Background of the study is highlighted in Section 1.2, and statement of the problem is discussed in Section 1.3. Research question and research objectives are discussed in Section 1.4 and Section 1.5, respectively. Meanwhile, the significance of the study is discussed in Section 1.6. The scope of the study is discussed in Section 1.7. Finally, an organization of the study is highlighted in Section 1.8.

### 1.1 Background of the Study

Nigeria, Ghana, Gambia, and Sierra Leone are known as West African Commonwealth Countries (WACCs). They are located in West Africa and colonized by Great Britain. The countries are developing economies and are always trying to make and implement policies that will elevate their economies to the path of sustainable growth and development. Achieving long-term economic growth is one of the macroeconomic objectives of every country, which is only possible if the prices of goods and services are relatively stable. Sustainable price stability not only attempts to provide but also to promote long-term economic growth. The primary concern of every country is to have price stability and to maintain it, which is foremost to both short-run and long-run growth and development (Nguyen, 2014; Bawa & Abdullahi, 2012; Odusanya & Atanda, 2010). The main reason behind this assertion is the variation of inflation rate, which has been proven to have adverse social and economic implications on any economy. High inflation rate has been

## REFERENCES

- Ackley, G., (1959). Administered prices and the inflationary process. *The American Economic Review*, 49(2), 419 – 430.
- Adebiyi, M. A., (2009). Inflation targeting: Can we establish a stable and predictable relationship between inflation and monetary instruments in Nigeria and Ghana? *Applied Econometric and Macroeconometric Modeling in Nigeria*, 7, 211 – 239.
- Adelowokan, O. A., (2012). Exchange rate pass-through in Nigeria: A dynamic evidence. *European Journal of Humanities and Social Sciences*. 16(1), 785 – 801.
- Adenuga, I. A., Bello, H. T., & Ejumedia, P. E., (2012). Is inflation a purely monetary phenomenon? Empirical investigation from Nigeria (1970 –2009). *European Scientific Journal*, 8(17), 236 – 248.
- Adeyemi, O. A., & Samuel, E., (2013). Exchange rate pass-through to consumer prices in Nigeria. *Journal of Business Management and Applied Economics*, 2(4), 1 – 10.
- Adu, G., & Marbuah, G., (2011). Determinants of inflation in Ghana: An empirical investigation. *South African Journal of Economics*, 79(3), 251 – 269.
- Ahmad, S., & Civelli, A., (2016). Globalization and inflation: A threshold investigation. *Journal of Macroeconomics*, 48, 283 – 304.
- Ahmad, Y., & Staveley-O'Carrol, O. M., (2017). Exploring international differences in inflation dynamics. *Journal of International Monetary and Finance*, 79, 115 – 135.
- Ahmed, S., & Mortaza, M. G., (2005). *Inflation and economic growth in Bangladesh: 1981-2005*. Bangladesh Bank Working Paper series wp0604 (id 3033).

- Ahn, S. C., & Schmidt, P., (1995). Efficient estimation of models for dynamic panel data. *Journal of Econometrics*, 68(1), 5 – 27.
- Akaike, H., (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, 19(6), 716 – 723.
- Akinboade, O. A., Siebrits, F. K., & Niedermeier, E. W., (2004). *The determinants of inflation in South Africa: An Econometric Analysis*. AERC Research Paper 143, Nairobi: African Economic Research Consortium.
- Akinbobola, T. O., (2012). The dynamic of money supply, exchange rate, and inflation in Nigeria. *Journal of Applied Finance and Banking*, 2(4), 117 – 141.
- Alexová, M., (2012). ‘What determines inflation?’ *International Journal of Monetary Economics and Finance*, 5(4), 345 – 369.
- Aliyu, S. U. R., Yakub, M. A. U., Sanni, G. K., & Duke, O., (2009). *Exchange rate pass-through in Nigeria: Evidence from a vector error correction model*. MPRA Paper No. 25053. Retrieved <http://mpra.ub.uni-muenchen.de/25053/> on 30.11.2016
- Altissimo, F., Mojon, B., & Zaffaroni, P., (2009). Can aggregation explain the persistence of inflation? *Journal of Monetary Economics*, 56(2), 231 – 241.
- Amano, R., (2007). Inflation persistence and monetary policy: A simple result. *Economic Letters*, 94(1), 26 – 31.
- Amoah, L., & Aziakpono, M. J., (2018). Exchange rate pass-through to consumer prices in Ghana: Is there asymmetry? *International Journal of Emerging Markets*, 13(1), 162 – 184.
- Amuedo-Dorantes, C., & Pozo, S., (2004). Workers' remittances and the real exchange rate: A paradox of gifts. *World Development*, 32(8), 1407 – 1417.

- An, L., & Wang, J., (2012). Exchange rate pass-through: Evidence-based on vector autoregression with sign restrictions. *Open Economies Review*, 23(2), 359 – 380.
- Anderson, T. W., & Hsiao, C., (1982). Formulation and estimation of dynamic models using panel data. *Journal of Econometrics*, 18(1), 47 – 82.
- Antonakakis, N., Cunado, J., Filis, G., & Gracia, F. P., (2017). Oil dependence, quality of political institutions and economic growth: A panel VAR approach. *Resource Policy*, 53, 147 – 163.
- Antonakakis, N., Cunado, J., Gil-Alana, L. A., & Gupta, R., (2016). Is inflation persistence different in reality? *Economic Letter*, 148, 55 – 58.
- Anwar S., Islam I., (2013). *Should developing countries target low, single-digit inflation to promote growth and employment?* In: Islam I., Kucera D. (eds) *Beyond Macroeconomic Stability. Advances in Labour Studies*. London: Palgrave Macmillan.
- Asongu, S. A., (2013). Fighting consumer price inflation in Africa. *Journal of Financial Economic Policy*, 5(1), 39 – 60.
- Atkeson, A., & Burstein, A., (2008). Pricing-to-market, trade costs, and international relative prices. *American Economic Review*, 98(5), 1998 – 2031.
- Attinasi, M. G. & Metelli, L., (2017). Is fiscal consolidation self-defeating? A panel VAR analysis for the Euro area countries. *Journal of International Monetary and Finance*, 74, 147 – 164.
- Aydin, C., Esen, O. & Bayak, M., (2016). *Inflation and economic growth: A dynamic panel threshold analysis for Turkish Republics in transition process*, 5<sup>th</sup> international conference on leadership, technology, innovation, and business management. *Procedia - Social and Behavioral Sciences*, 229, 196 – 205.

- Babalola, O. O., Danladi, J. D., Akomolafe, K. J., & Ajiboye, O. P., (2015). Inflation, interest rates, and economic growth in Nigeria. *European Journal of Business and Management*, 7(30), 91 – 102.
- Babatunde, M. A., & Shuaibu, M. I., (2011). Money supply, inflation and economic growth in Nigeria. *Asian-African Journal of Economics and Econometrics*, 4(1), 147 – 163.
- Bada, A. S., Olufemi, A. I., Tata, I. A., Peters, I., Bawa, S., Onwubiko, A. J., & Onyowo, U. C., (2016). Exchange rate pass-through to inflation in Nigeria. *CBN Journal of Applied Statistics*, 7(1), 49 – 70.
- Baglan, D., & Yoldas, E., (2014). Non-linearity in the inflation-growth relationship in developing economies: Evidence from a semiparametric panel model. *Economics Letters*, 125(1), 93 – 96.
- Bai, J., & Perron, P., (1998). Estimating and testing linear models with multiple structural changes. *Econometrica*, 66(1), 47–78.
- Bai, J., & Perron, P., (2003). Computation and analysis of multiple structural change models. *Journal of Applied Econometrics*, 18(1), 1–22.
- Baltagi, B. H., (2005). *Econometric analysis of panel data, 3<sup>rd</sup> Edition*, England: John Wiley & Sons, Ltd.
- Banerjee, A., Dolado, J., Galbraith, J. W., & Hendry, D. F., (1993). *Co-integration, error correction, and the econometric analysis of non-stationary data*. Oxford: Oxford University Press.
- Bangura, M., Caulker, E., & Pessima, S., (2012). Exchange rate pass-through to inflation in Sierra Leone: A structural vector autoregressive approach. *Journal of Monetary and Economic Integration*, 12(1), 93 – 123.

- Bashir, F., Nawaz, H., Yasin, K., Khursheed, U., Khan, J., & Quresh, M. J., (2011). Determinants of inflation in Pakistan: An econometric analysis using Johansen co-integration approach. *Australian Journal of Business and Management Research*, 1(5), 71 – 82.
- Baumohl, E., & Lyocsa, S., (2009). Stationarity of time series and the problem of spurious regression. Munich Personal RePEc Archive (MPRA), MPRA Paper No. 27926, Retrieved [www.mpra.ub.uni-muenchen.de/27926](http://www.mpra.ub.uni-muenchen.de/27926).
- Bawa, S., & Abdullahi, I. S., (2012). Threshold effect of inflation on economic growth in Nigeria. *CBN Journal of Applied Statistics*, 3(1), 43 – 63.
- Biorn, E., (2017). *Econometrics of panel data: Methods and applications*, Oxford: Oxford University Press.
- Blackburne, E. F., & Frank, M. W., (2007). Estimation of nonstationary heterogeneous panels. *Stata Journal*, 7(2), 197 – 208.
- Box, G. E. P. & Jenkins, G. M., (1970). *Time series analysis forecasting and control*, San Francisco: Holden-Day Publishers.
- Breusch, T. S., (1978). Testing for autocorrelation in dynamic linear models. *Australian Economic Papers*, 17(31), 334 – 355.
- Breusch, T. S., & Pagan, A. R., (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica: Journal of the Econometric Society*, 47(5), 1287 – 1294.
- Bronfenbrenner, M., & Holzman, F. D., (1963). Survey of inflation theory. *The American Economic Review*, 53(4), 593 – 661.
- Brown, R. L., Durbin, J., & Evans, J. M., (1975). Techniques for testing the constancy of regression relationships over time. *Journal of the Royal Statistical Society. Series B*. 37(2), 149 – 192.

- Buyandelger, O. E., (2015). Exchange rate pass-through effect and monetary policy in Mongolia: Small open economy DSGE model. *Procedia – Economic and Finance*, 26, 1185 – 1192.
- Byamugisha, F. F., (1999). *How land registration affects financial development and economic growth in Thailand*. The World Bank Policy Research Working Paper no 2241/1999.
- Cagan, P., (1956). "The Monetary Dynamics of Hyperinflation." In Friedman, M. (ed.). *Studies in the Quantity Theory of Money*. Chicago: University of Chicago Press.
- Campa, J. M., & Goldberg, L. S., (2005). Exchange rate pass-through into import prices. *The Review of Economics and Statistics*, 87(4), 679 – 690.
- Canova, F., & Ciccarelli, M., (2013). *Panel-vector autoregressive models: A survey*. European Central Bank (ECB) Working Papers no. 1507, 1 – 53.
- Cheikh, N. B. & Louhichi, W., (2016). Revisiting the role of inflation environment in exchange rate pass-through: A panel threshold approach. *Economic Modeling*, 52, 233 – 238.
- Cheng, M., & Tan, H., (2002). Inflation in Malaysia. *International Journal of Social Economics*, 29(5), 411 – 425.
- Chiarella, C., He, X. Z., & Nikitopoulos, C. S., (2014). *Derivative security pricing, techniques, methods and applications*, Vol. 21, Heidelberg: Springer.
- Chou, W. L., & Lee, D. S.-Y., (2003). Cointegration analysis of audit pricing model: A panel unit root test approach. *Journal of Business Finance & Accounting*, 30(7-8), 1141– 1164.

- Choudhri, E. U., & Hakura, D. S., (2015). The exchange rate pass-through to import and export prices: The role of nominal rigidities and currency choice. *Journal of International Money and Finance*, 51, 1 – 25.
- Cogley, T., Primiceri, G. E., & Sargent, T. J., (2010). Inflation-gap persistence in US. *American Economic Journal: Macroeconomic*, 2(1), 43 – 69.
- Coleman, S., (2010). Inflation persistence in the Franc zone: Evidence from disaggregated prices. *Journal of Macroeconomics*, 32(1), 426 – 442.
- Comunale, M., & Simola, H., (2018). The pass-through to consumer prices in CIS economies: The role of exchange rates, commodities and other common factors. *Research in International Business and Finance*, 44, 186 – 217.
- Dammak, T. B., & Helali, K., (2017). Threshold effects on the relationship between inflation rate and economic growth in Tunisia. *International Economic Journal*, 31(2), 310 – 325.
- Danmola, R. A., (2013). The impact of exchange rate volatility on the macroeconomic variables in Nigeria, *European Scientific Journal*. 9(7) 152 – 165.
- Darrat, A. F., (1985). Inflation in Saudi Arabia: An econometric investigation. *Journal of Economic Studies*, 12(4) 41 – 51.
- de-Mendonça, H. F., & Tiberto, B. P., (2017). Effect of credibility and exchange rate pass-through on inflation: An assessment for developing countries. *International Review of Economic & Finance*, 50, 196 – 244.
- Devereux, M. B., Dong, W., & Tomlin, B., (2017). Importers and exporters in exchange rate pass-through and currency invoicing. *Journal of International Economics*, 105, 187 – 204.

- Dickey, D. A., & Fuller, W. A., (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 74(366), 427–431.
- Dickey, D. A., & Fuller, W. A., (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica: Journal of the Econometric Society*, 49(4), 1057 – 1072.
- Doguwa, S. I., (2012). Inflation and economic growth in Nigeria: Detecting the threshold level. *CBN journal of Applied Statistics*, 3(2), 99 – 124.
- Duesenberry, J., (1950). The mechanics of inflation. *The Review of Economics and Statistics*, 32(2), 144 – 149.
- Durevall, D., & Sjo, B., (2012). *The dynamics of inflation in Ethiopia and Kenya*. African Development Bank Group (AfDB) Brief, No. 151, 2012.
- Ebiringa, O. T., & Anyaogu, N. B., (2014). Exchange rate, inflation and interest rates relationships: An autoregressive distributed lag analysis. *Journal of Economics and Development Studies*, 2(2), 263 – 279.
- Edwards, S., & Santaella, J., (1993). Devaluation controversies in the developing countries: lessons from the Bretton Woods era. In *A retrospective on the Bretton Woods system: Lessons for international monetary reform* (pp. 405-460). University of Chicago Press. Retrieved from <https://www.nber.org/chapters/c6875.pdf> on 20/12/2016
- Eggoh, J. C., & Khan, M., (2014). On the nonlinear relationship between inflation and economic growth. *Research in Economics*, 68(2), 133 – 143.
- Egwaikhide, F. O., Chete, L. N., & Falokun, G. O., (1994). *Exchange rate depreciation, budget deficit and inflation – The Nigerian experience*, AERC Research Paper 26, Nairobi: African Economic Research Consortium.

- Elahi, N., Salimi, F., & Masoomzadeh, E., (2016). Investigating asymmetric effects of monetary shocks on the exchange rate and trade balance, with an emphasis on inflation targeting. *Procedia Economics and Finance*, 36, 165 – 176.
- Fabayo, J. A., & Ajilore, O. T., (2006). Inflation: How much is too much for economic growth in Nigeria. *Indian Economic Review*, 41(2), 129 – 147.
- Fakhri, H., (2011). Relationship between inflation and economic growth in Azerbaijani economy: Is there any threshold effect? *Asian Journal of Business and Management Sciences*, 1(1), 1 – 11.
- Faruqee, H., (2006). Exchange rate pass-through in the euro area. *IMF Staff Papers*, 53(1), 63 – 88.
- Feenstra, R. C., (2015). *Advanced international trade: Theory and evidence*. Princeton: Princeton University Press.
- Fielding, D., (2008). *Inflation volatility and economic development: Evidence from Nigeria*; University of Otago, Economics Discussion Paper No. 0807; Retrieved from <http://www.otago.ac.nz/economics/research/otago077111.pdf> on 31/01/2017.
- Friedlander, B., & Porat, B., (1984). The modified Yule-Walker method of ARMA spectral estimation. *IEEE Transactions on Aerospace and Electronic Systems*, 20(2), 158 – 173.
- Frimpong, J. M., & Oteng-Abayie, E. F., (2010). When is inflation harmful? Estimating the threshold effect for Ghana. *American Journal of Economics and Business Administration*, 2(3), 232 – 239.
- Frisch, H., (1983). *Theories of inflation*, Cambridge: Cambridge University Press.
- Fuhrer, J. C., (2011). *Inflation persistence*. In Friedman, B. M. & Woodford, M. (Ed.): *Handbook of Monetary Economics Vol. 3A*. London: Elsevier.

- Gagnon, J. E., & Ihrig, J., (2004). Monetary policy and exchange rate pass-through. *International Journal of Finance & Economics*, 9(4), 315 – 338.
- Galariotus, E. C., Makrichoriti, P., & Spyrou, S., (2016). Sovereign CDS spread determinants and spill-over effects during financial crises: A panel VAR approach. *Journal of Financial Stability*, 26, 62 – 77.
- Galbács, P., (2015). *The Theory of New Classical Macroeconomics*. New York: Springer.
- Garber, P. M., (1993). *The collapse of the Bretton Woods fixed exchange rate system*. In Borodo, M. D. & Eichengreen, B. E. (Ed.): A Retrospective on the Bretton Woods system: Lessons for international monetary reform. University of Chicago Press, Retrieved from <http://www.nber.org/chapters/c6876.pdf> on 20/12/2016.
- Garrett, D. F., (2017). Dynamic mechanism design: Dynamic arrivals and changing values. *Games and Economic Behavior*, 104, 595 – 612.
- Giannellis, N., & Koukouritakis, M., (2013). Exchange rate misalignment and inflation rate persistence: Evidence from Latin American countries. *International Review of Economics & Finance*, 25, 202 – 218.
- Gnansounou, E., Bayem, H., Bednyagin, D., & Dong, J., (2007). Strategies for regional integration of electricity supply in West Africa. *Energy Policy*, 35(8), 4142 – 4153.
- Godfrey, L. G., (1978). Testing against general autoregressive and moving average error models when the regressors include lagged dependent variables. *Econometrica: Journal of the Econometric Society*, 46(6), 1293 – 1301.

- Gonçalves, S. L., & Machado, A. F., (2015). Poverty dynamics in Brazilian metropolitan areas: An analysis based on Hulme and Shepherd's categorization (2002–2011). *Economia*, 16(3), 376 – 394.
- Granger, C. W., & Newbold, P., (1974). Spurious regressions in econometrics. *Journal of Econometrics*, 2(2), 111 – 120.
- Greene, W. H., (2003). *Econometric analysis*, 5th. Ed. New Jersey: Upper Saddle River.
- Gujarati, D. N. & Porter, D. C., (2009). *Basic Econometrics*, Boston: McGraw-Hill.
- Guru-Gharana, K. K., (2012). Econometric investigation of relationships among export, FDI and growth in India: An application of Toda-Yamamoto-Dolado-Lutkepohl Granger causality test. *The Journal of Developing Areas*, 46(2) 231 – 247.
- Gylfason, T., (1999). Exports, inflation and growth. *World Development*, 27(6), 1031 – 1057.
- Gylfason, T., & Herbertsson, T. T., (2001). Does inflation matter for growth? *Japan and the World Economy*, 13(4), 405 – 428.
- Haberler, G., (1960). *Inflation its causes and cures*, Washington: American Enterprises Association.
- Hagger, A. J., (1977). *Inflation theory and policy*, London: The Macmillan Press Limited.
- Hamilton, A., (2001). *Exploding inflation*, zeal intelligence. Retrieved from [www.zealiic.com/2001/explode.htm](http://www.zealiic.com/2001/explode.htm) on 28/12/2016.
- Hannan, E. J., & Quinn, B. G., (1979). The determination of the order of an autoregression. *Journal of the Royal Statistical Society. Series B (Methodological)*, 41(2), 190 – 195.

- Hansen, B., (1999). Testing for linearity. *Journal of Economic Surveys*, 13(5), 551 – 576.
- Hansen, B. E., (1999). Threshold effects in non-dynamic panels: Estimation, testing, and inference. *Journal of Econometrics*, 93(2), 345 – 368.
- Hansen, B. E., (2000). Sample splitting and threshold estimation. *Econometrica*, 68(3), 575 – 603.
- Hansen, B. E., (2000). Testing for structural change in conditional models. *Journal of Econometrics*, 97(1), 93 – 115.
- Hansen, B. E., (2011). Threshold autoregression in economics. *Statistics and its Interface*, 4(2), 123 – 127.
- Hassan, S., & Othman, Z., (2018). Forecasting on the long-term sustainability of the employees provident fund in Malaysia via the Box-Jenkins' ARIMA model. *Business & Economic Horizons*, 14(1), 43 – 53.
- Hassan, S., Abu-Bakar, N. A., & Abdullah, H., (2014). Analysis of FDI inflows into China from ASEAN-5 Countries: A panel cointegration approach. *Journal of Economic Cooperation & Development*, 35(3), 1 – 28.
- Hazlitt, H., (1960). *What you should know about inflation*; 2<sup>nd</sup> Edition, New Jersey: D. Van Nostrand Company Inc.
- Heath, A., Roberts, I., & Bulman, T., (2004). *Inflation in Australia: measurement and modelling*. The Future of Inflation Targeting: Proceedings of a Conference Held at the H.C. Coombs Centre for Financial Studies, Kirribilli, Australia. On 9-10 August, 167 – 207.
- Helali, K., & Kalai, M., (2015). Exchange rate pass-through to domestic prices in Tunisia: A short-and long-run analysis. *International Journal of Monetary Economics and Finance*, 8(3), 282 – 301.

- Hick, J. R., (1946). *Value and capital: An inquiry into some fundamental principles of economic theory*. Oxford: Clarendon Press.
- Hojjat, T. A., & Barnhorst, B. C., (2013). 'Inflation persistence and growth in seven emerging Islamic economies', *International Journal of Business and Emerging Markets*, 5(2), 148 – 164.
- Hossain, M. T., & Islam, N., (2013). An economic analysis of the determinants of inflation in Bangladesh. *The International Journal of Social Sciences*, 11(1), 29 – 36.
- Hussain, S., & Malik, S., (2011). Inflation and economic growth: Evidence from Pakistan. *International Journal of Economics and Finance*, 3(5), 262 – 276.
- Imimole, B., & Enoma, A., (2011). Exchange rate depreciation and inflation in Nigeria (1986–2008). *Business and Economics Journal*, 28, 1 – 12.
- Iqbal, N. & Nawaz, S., (2009). Investment, inflation and economic growth nexus. *The Pakistan Development Review*, 48(4) 863 – 874.
- Ishaq, T., & Mohsin, H. M., (2015). Deficits and inflation: Are monetary and financial institutions worthy to consider or not? *Borsa Istanbul Review*, 15(3), 180 – 191.
- Iwayemi, A., (2008). Investment in electricity generation and transmission in Nigeria: Issues and options. 1<sup>st</sup> Quarter, 2008. *International Association for Energy Economics News Letter*, 13(1), 37 – 42.
- Iyaji, D., Success, M. J., & Success, E. B., (2012). An assessment of effectiveness of monetary policy in combating inflation pressure on the Nigeria economy. *Erudite Journal of Business Administration and Management*, 1(1), 7 – 16.

- Jalil, A., Tariq, R., & Bibi, N., (2013). Fiscal deficit and inflation: New evidence from Pakistan using a bound testing approach. *Economic Modeling*, 37, 120 – 126.
- Jhingan, M. L., (2011). *Monetary Economics*, 7<sup>th</sup> Ed. Delhi: Vrinda Publications (P) Ltd.
- Jiang, J., & Kim, D., (2013). Exchange rate pass-through to inflation in China. *Economic Modelling*, 33, 900 – 912.
- Jobarteh, M., (2016). *Evolution of exchange rate pass-through: Evidence from the Gambia*. MPR Paper No. 74664, [https://mpra.ub.uni-muenchen.de/74664/1/MPRA\\_paper\\_74664.pdf](https://mpra.ub.uni-muenchen.de/74664/1/MPRA_paper_74664.pdf)
- Junttila, J., & Korhonen, M., (2012). The role of inflation regime in the exchange rate pass-through to import prices. *International Review of Economics & Finance*, 24, 88 – 96.
- Kanellopoulos, N. C., & Kuotroulis, A. G., (2016). Non-linearities in euro area inflation persistence. *Economic Modeling*, 59, 116 – 123.
- Kar, S., (2010). ‘UCM: A measure of core inflation. *International Journal of Monetary Economics and Finance*, 3(3), 248 – 269.
- Karagoz, M., Demirel, B., & Bozdog, G., (2016). Pass-through effect from exchange rates to the price in the framework of inflation targeting policy: A comparison of Asia-Pacific, South America and Turkish Economies. *Procedia – Economic and Finance*, 38, 438 – 455.
- Karekezi, S., (2002). Poverty and energy in Africa—a brief review. *Energy Policy*, 30(11-12), 915 – 919.
- Keynes, J. M., (1936). *The general theory of employment, interest and money*, New York: Macmillan.

- Khair, T. M., (2011). *Determinants of inflation in Malaysia (1981 – 2010)*, MBA Research Thesis submitted to College of Business, University Utara Malaysia.
- Khan, M. S., & Senhadji, A. S., (2000). *Threshold effects in the relationship between inflation and growth*, IMF Working Paper, WP/00/110, Retrieved from [www.imf.org](http://www.imf.org) on 28/12/2016.
- Kiliç, R., (2016). Regime-dependent exchange-rate pass-through to import prices. *International Review of Economics & Finance*, 41, 295 – 308.
- Kirimi, W. N., (2014). *The determinants of inflation in Kenya (1970 – 2013)*, an MSc dissertation submitted to the Department of Economics, University of Nairobi, Kenya.
- Koutsoyiannis, A., (1977). *Theory of Econometrics 2nd Ed.*, London: Macmillan Press.
- Kozamernik, D., & Zumer, T., (2011). 'Monetary policy and the disinflation on the way to the euro in Slovenia', *International Journal of Monetary Economics and Finance*, 4(1), 21 – 48.
- Kremer, S., Bick, A., & Nautz, D., (2013). Inflation and growth: New evidence from a dynamic panel threshold analysis. *Empirical Economics*, 44(2), 861 – 878.
- Kumapayi, A. A., Nana J. U., & Ohwofasa, B. O., (2012). Impact of inflation on monetary policy and economic developments in Nigeria 1980 – 2010: Evidence from empirical data. *Asian Journal of Empirical Research*, 2(2) 28 – 39.
- Kumar, H., & Kattookaran, T., (2016). Secular stagnation: An introduction. *Indian Journal of Commerce and Management Studies*, 7(3), 42 – 47.
- Lada, K., & Wójcik, P., (2007). *VEC Model-the influence of export on economic growth*. [http://coin.wne.uw.edu.pl/krosiak/index\\_pliki/4\\_vecm/handout4.pdf](http://coin.wne.uw.edu.pl/krosiak/index_pliki/4_vecm/handout4.pdf). On 22.07.2018.

- Lafleche, T., (1996). *The impact of exchange rate movements on consumer price*. Bank of Canada Review, Winter, 1996-1997, 21 – 32.
- Lagoa, S., (2014). Inflation dynamics in open economies: Empirical evidence for G7 countries on the role of import prices and the cost channel. *Research in Economics*, 68(4), 354 – 371.
- Laurenceson, J., Chai, C.H.J., (2003). *Financial reform and economic development in China*. Cheltenham: Edward Elgar.
- Leigh, D., & Rossi, M., (2002). *Exchange rate pass-through in Turkey*. IMF Working Paper, WP/02/204, Retrieved from [www.imf.org](http://www.imf.org) on 28/12/2016.
- Levin, A. T., & Piger, J., (2004). *Is inflation persistence intrinsic in industrial economies?* European Central Bank Working Paper Series No. 334.
- Lim, C. H. & Papi, L., (1997). *An econometric analysis of the determinants of inflation in Turkey*, IMF Working Paper, WP/97/170, Retrieved from [www.imf.org](http://www.imf.org) on 28/12/2016.
- Lim, Y. C. & Sek, S. K., (2015). An examination of the determinants of inflation. *Journal of Economics, Business and Management*, 3(7), 678 – 682.
- Lolić, I., & Sorić, P., (2014). Non-linear effects in the Croatian inflation-generating process, *International Journal of Monetary Economics and Finance*, 7(3), 175 – 191.
- Lozano, I., & Rodríguez, K., (2011). Assessing the macroeconomic effects of fiscal policy in Colombia. *Journal of Financial Economic Policy*, 3(3), 206 – 228.
- Lucas Jr, R. E., (1972). Expectations and the Neutrality of Money. *Journal of Economic Theory*, 4(2), 103 – 124.
- Luenberger, D. G., (1979). *Introduction to dynamic systems, theory, models and applications*. New York: John Wiley & Sons.

- Maddala, G. S., & Kim, I. M., (1998). *Unit roots, cointegration, and structural change*, Cambridge: Cambridge University Press.
- Madsen, H., (2008). *Text in statistical science: Time series analysis*, London: Chapman & Hall/CRC, Taylor & Francis Group.
- Maku, A. O. & Adelowokan, O. A., (2013). Dynamics of inflation in Nigeria: An autoregressive approach. *European Journal of Humanities and Social Sciences*, 22(1), 1174 – 1184.
- Mallik, G., & Chowdhury, A., (2002). Inflation, government expenditure and real income in the long run. *Journal of Economic Studies*, 29(3), 240 – 250.
- Mawajje, J. & Lwanga, M. M., (2016). Inflation dynamics and agricultural supply shocks in Uganda. *African Journal of Economic and Management Studies*, 7(4), 547 – 567.
- Maxwell, J. A., (2005). *Qualitative research design: An interactive approach (2<sup>nd</sup> ed.)*, Thousand Oaks, CA: Sage Publication.
- Mbutor, M. O., (2014). Inflation in Nigeria: How much is the function of money? *Journal of Economics and International Finance*, 6(1), 21 – 27.
- McCallum, B. T., (1989). *Monetary economics theory and policy*, New York: Macmillan Publishing Company.
- McCallum, B. T., (1990). Inflation: theory and evidence. *Handbook of monetary economics*, 2, 963 – 1012.
- McCarthy, J., (2007). Pass-through of exchange rates and import prices to domestic inflation in some industrialized economies. *Eastern Economic Journal*, 33(4), 511 – 537.
- Melberg, H. O., (1992). *Inflation: An overview of theories and solutions*. Retrieved from [www.oocities.org/hmelberg/paper/921201.htm](http://www.oocities.org/hmelberg/paper/921201.htm) on 28/12/2016.

- Menon, J., (1996). *Exchange rates and prices: The case of Australian manufactured imports*, New York: Springer.
- Mirdala, R., (2014). Exchange rate pass-through to consumer prices in European transitions economies. *Procedia – Economic and Finance*, 12, 428 – 436.
- Mordi, C. N. O., Adebisi, M. A., Adenuga, A. O., Hogan, E. B., Abeng, M. O., Nwosu, C. P., Adeboye, A. A., Adamgbe, E. T., & Evbuomwan, O. O., (2012). *Monetary sector model for Nigeria*. Abuja: Research Department, Central Bank of Nigeria.
- Mordi, C. N. O., Essien, E. A., Adenuga, A. O., Omanukwe, P. N., Ononugbo, M. C., Oguntade A. A., Abeng, M. O. & Ajao, O. A., (2007). *The dynamics of inflation in Nigeria*. Main Report, Occasional Paper No. 32. CBN Abuja, Nigeria.
- Moser, G. G., (1995). The main determinants of inflation in Nigeria. *Palgrave Macmillan Journal*, 42(2), 270 – 289.
- Mubarik, Y. A., (2005). Inflation and growth: An estimate of the threshold level of inflation in Pakistan. *SBP-Research Bulletin*, 1(1), 35 – 44.
- Muktadir-Al-Mukit, D., & Shafiullah, A. Z. M., (2014). Export, import and inflation: A Study on Bangladesh. *Amity Global Business Review*, 9, 46 – 55.
- Munir, Q., Mansur, K., & Furuoka, F., (2009). Inflation and economic growth in Malaysia: A threshold regression approach. *ASEAN Economic Bulletin*, 26(2), 180 – 193.
- Musa, Y., Usman, U. & Zoramawa, A. B., (2014). Relationship between money supply and government revenues in Nigeria. *CBN Journal of Applied Statistics*, 5(2), 117 – 136.

- Muth, J. F., (1961). Rational expectations and the theory of price movements. *Econometrica: Journal of the Econometric Society*, 29(3), 315 – 335.
- Narayan, P. K., & Narayan, S., (2005). Estimating income and price elasticities of imports for Fiji in a cointegration framework. *Economic Modeling*, 22(3), 423 – 438.
- Ndidi, D. E., (2013). Determinants of inflation in Nigeria (1970 – 2010). *The Business and Management Review*, 3(2), 106 – 114.
- Ndoricimpa, A., (2017). Threshold effects of inflation on economic growth: Is Africa different? *International Economic Journal*, 31(4), 599 – 620.
- Nguyen, A. D. M., Dridi, J., Unsal, F. D. & Williams, O. H., (2015). *On the drivers of inflation in sub-Saharan Africa*. IMF Working Papers, WP/15/189.
- Nguyen, A. D., Dridi, J., Unsal, F. D., & Williams, O. H., (2017). On the drivers of inflation in Sub-Saharan Africa. *International Economics*, 151, 71 – 84.
- Nguyen, V. B., (2014). Effects of fiscal deficit and money M2 supply on inflation: Evidence from selected economies of Asia. *Journal of Economics, Finance and Administrative Science* 20, 49 – 53.
- Noriega, A. E. & Ramos-Francia, M., (2009). The dynamics of persistence in US inflation. *Economic Letters*, 105(2), 168 – 172.
- Ocran, M. K., (2010). Exchange rate pass-through to domestic prices: The case of South Africa. *Prague Economic Papers*, 4, 291 – 306.
- Ocran, M. K., (2011). Fiscal policy and economic growth in South Africa. *Journal of Economic Studies*, 38(5), 604 – 618.
- Odusanya, I. A. & Atanda, A. A., (2010). *An analysis of inflation and its determinants in Nigeria*, Munich Personal RePEc Archive (MPRA), MPRA

Paper No. 35837, Retrieved from [www.mpra.ub.uni-muenchen.de/35837](http://www.mpra.ub.uni-muenchen.de/35837) on 28/12/2016.

- Ogundipe, A. A., & Samuel, E., (2013). Exchange rate pass-through to consumer prices in Nigeria. *Journal of Business Management and Applied Economics*, 2(4), 1 – 10.
- Ojede, A., (2015). Is inflation in developing countries driven by low productivity or monetary growth? *Economic Letters*, 133, 96 – 99.
- Okhiria, O. & Saliu, T. S., (2008). *Exchange rate variation and inflation in Nigeria (1970 – 2007)*, Masters' Degree Project in Economics and Finance, School of Technology and Society, University of Skovede.
- Olubusoye, O. E. & Oyaromade, R., (2008). *Modeling the inflation process in Nigeria*. African Economic Research Consortium, Nairobi, Kenya. AERC Research Paper, 182, 1 – 30.
- Olulu-Briggs, O. V. & Ogbulu, O. M., (2015). Money supply and asset prices in Nigeria (2008 – 2013): An Empirical Review. *Research Journal of Finance and Accounting*, 6(10), 45 – 56.
- Omisakin, O. A., (2009). Exchange rate pass-through to domestic price and output in Nigeria. *International Business Management*, 3(3), 38 – 42.
- Omotor, D. G., (2008). Exchange rate reform and its inflationary consequences: The case of Nigeria. *Ekonoski Pregled*, 59(11), 688 – 716.
- Oriakhi, D. E. & Osaze, I. D., (2013). Oil price volatility and its consequences on the growth of the Nigerian economy: An examination (1970-2010). *Asian Economic and Financial Review*, 3(5), 683 – 702.

- Oriavwote, V. E. & Eshenake, S. J., (2012). Real exchange rate and inflation: An empirical assessment of the Nigerian experience. *Mediterranean Journal of Social Sciences*, 3(3), 145 – 153.
- Oyinlola, M. A., & Babatunde, M. A., (2009). A bound testing analysis of exchange rate pass-through to aggregate import prices in Nigeria: 1980-2006. *Journal of Economic Development*, 34(2), 97 – 109.
- Oyinlola, M. A., & Egwaikhide, F. O., (2011). Exchange rate pass-through to domestic prices in Nigeria: A dynamic investigation. *The Social Sciences*, 6(2), 87 – 95.
- Pan, M. S., Fok, R. C. W., & Liu, Y. A., (2007). Dynamic linkages between exchange rates and stock prices: Evidence from East Asian markets. *International Review of Economics & Finance*, 16(4), 503 – 520.
- Paothong, A., & Ladde, G. S., (2013). Adaptive expectations and dynamic models for network goods. *Economic Analysis and Policy*, 43(3), 353 – 373.
- Pesaran, M. H., & Shin, Y., (1998). An autoregressive distributed-lag modeling approach to cointegration analysis. *Econometric Society Monographs*, 31, 371 – 413.
- Pesaran, M. H., Shin, Y., & Smith, R. J., (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289 – 326.
- Pesaran, M. H., Shin, Y., & Smith, R. P., (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association*, 94(446), 621 – 634.

- Phillips, A. W., (1958). The relationship between unemployment and the rate of change of money wage rates in the United Kingdom, 1861 – 1957. *Economica, New Series*, 25(100) 283 – 299.
- Phillips, P. C., & Perron, P., (1988). Testing for a unit root in time series regression. *Biometrika*, 75(2), 335 – 346.
- Phiri, A., (2012). Threshold effects and inflation persistence in South Africa. *Journal of Financial Economic Policy*, 4(3) 247 – 269.
- Pivetta, F. & Reis, R., (2007). The persistence of inflation in United States. *Journal of Economic Dynamics & Control*, 31(4), 1326 – 1358.
- Pontines, V., & Rajan, R. S., (2011). Foreign exchange market intervention and reserve accumulation in emerging Asia: Is there evidence of fear of appreciation? *Economics Letters*, 111(3), 252 – 255.
- Potter, S., (1999). Nonlinear time series modelling: An introduction. *Journal of Economic Surveys*, 13(5), 505 – 528.
- Razafimahefa, I. F., (2012). *Exchange rate pass-through in sub-Saharan African economies and its determinants*. Working paper no. wp/12/141, International Monetary Fund.
- Risso, W. A. & Sanchez-Carrera E. J., (2009). Inflation and Mexican economic growth: Long run relation and threshold effects. *Journal of Financial Economic Policy*, 1(3), 246 – 263.
- Rodrigues, M., (2013). Short run and long run in trade models: A note. *Economia*, 14(2), 2 – 10.
- Rodriguez-lopez, J. A., (2011). Prices and exchange rates: A theory of disconnect. *Review of Economic Studies*, 78(3), 1135 – 1177.

- Rogers, C., (2008). *Keynes, Keynesians and contemporary monetary theory and policy: An assessment*, 4th International Conference on Keynes's Influence on Modern Economics - The Keynesian Revolution Reassessed, at Sophia University, Tokyo, 19 – 20 March.
- Sabade, S., (2013). Is money supply the cause of inflation in India? An alternative postulate to understand inflation. *Procedia – Social and Behavioral Science*, 133, 379 – 382.
- Saiki, A., (2015). The endogeneity of exchange rate pass-through: Some European evidence. *Open Economies Review*, 26(5), 893 – 909.
- Salami, D., & Kelikume, I., (2010). An estimation of inflation threshold for Nigeria (1970-2008). *International Review of Business Research Papers*, 6(5), 375 – 385.
- Samuel, H. & Nurina, S., (2015). *Analysis of the effect of inflation, interest rates and exchange rates on Gross Domestic Product (GDP) in Indonesia*. Proceeding of International Conference on Global Business, Economics, Finance and Social Sciences (GB15\_Thai Conference) Bangkok, Thailand, 20 – 22.
- Sarel, M., (1996). Nonlinear effects of inflation on economic growth. *IMF Staff Papers*, 43(1), 199 – 215.
- Sargent, T. J., & Wallace, N., (1973). Rational expectations and the dynamics of hyperinflation. *International Economic Review*, 14(2), 328 – 350.
- Sargent, T. J., & Wallace, N., (1975). "Rational" expectations, the optimal monetary instrument, and the optimal money supply rule. *Journal of Political Economy*, 83(2), 241 – 254.
- Sargent, T. J., & Wallace, N., (1976). Rational expectations and the theory of economic policy. *Journal of Monetary Economics*, 2(2), 169 – 183.

- Savoie-Chabot, L., & Khan, M., (2015). *Exchange rate pass-through to consumer prices: Theory and recent evidence* (No. 2015-9). Bank of Canada Discussion Paper.
- Schalck, C., (2014). Fiscal behaviours in EMU countries: A dynamic approach. *Economic Analysis and Policy*, 44(3), 345 – 354.
- Schwarz, G., (1978). Estimating the dimension of a model. *The Annals of Statistics*, 6(2), 461 – 464.
- Sek, S. K., Teo, X. Q. & Wong, Y. N., (2015). A comparative study on the effects of oil price changes on inflation. 4<sup>th</sup> world conference on business, economics and management, WCBEM. *Procedia Economics and Finance*, 26, 630 – 636.
- Sekaran, U., (2003). *Research methods for business: A skill-building approach*, 4th ed. Illinois: John Wiley & Sons. Inc.
- Shambaugh, J., (2008). A new look at pass-through. *Journal of International Money and Finance*, 27(4), 560 – 591.
- Shamsul-Alam, A. K. M. & Kamath, S. J., (1986). Models and forecasts of inflation in developing economy. *Journal of Economic Studies*, 13(4), 3 – 29.
- Shang, H. L., (2017). Functional time series forecasting with dynamic updating: An application to intraday particulate matter concentration. *Econometrics and Statistics*, 1, 184 – 200.
- Simpassa, A., Gurara, D., Shimeles, A., Vencatachellum, D. & Ncube, M., (2011). *Inflation dynamics in selected East African countries: Ethiopia, Kenya, Tanzania and Uganda*. African Development Bank (AfDB) Brief, 2011.
- Sims, C. A., (1980). Macroeconomics and reality. *Econometrica: Journal of the Econometric Society*, 48(1), 1 – 48.

- Sola, O. & Peter, A., (2013). Money supply and inflation in Nigeria: Implications for national development. *Scientific Research (Modern Economy)*, 4(3), 161 – 170.
- Tabachnick, B. G., & Fidell, L. S., (2013). *Using multivariate statistics*, 6th ed. New Jersey: Pearson Education Inc.
- Takhatamanova, Y., (2008). *Understanding changes in exchange rate pass-through*, Federal Reserve Bank of San Francisco Working Paper Series 2008-13 Retrieved from [www.frbsf.org/publications/economicpaper/2008/wp08-13bk.pdf](http://www.frbsf.org/publications/economicpaper/2008/wp08-13bk.pdf) on 28/12/2016.
- Tandrayen-Ragoobur, V., & Chicooree, A., (2013). Exchange rate pass-through to domestic prices: Evidence from Mauritius. *Journal of Economic Research*, 18(1), 1 – 33.
- Tarawalie, A. B., Sissoho, M., Conte, M. & Ahoritor, C. R., (2012). *Exchange rate, inflation and macroeconomic performance in the West African Monetary Zone (WAMZ)*, West African Monetary Institution (WAMI) Occasional Paper No. 2. <http://www.wami-imao.org/sites/default/files/OccasionalPapers/WAMI%20OCCASIONAL%20PAPER%20SERIES%20NO.%202.pdf> on 01/02/2017.
- Taylor, J. B., (2000). Low inflation, pass-through, and the pricing power of firms. *European Economic Review*, 44(7), 1389 – 1408.
- Thakur, G. S. M., Bhattacharyya, R. & Mondal S. S., (2016). Artificial neural network-based model for forecasting of inflation in India. *Fuzzy Information and Engineering*, 8(1), 87 – 100.
- Thanh, S. D., (2015). Threshold effects of inflation on growth in the ASEAN-5 countries: A panel smooth transition regression approach. *Journal of Economics, Finance and Administrative Science*, 20(38), 41 – 48.

- Toda, H. Y., & Yamamoto, T., (1995). Statistical inference in vector autoregressions with possibly integrated processes. *Journal of Econometrics*, 66(1-2), 225 – 250.
- Tong, H., & Lim, K. S., (1980). Threshold regression, limit cycles and cyclic data (with discussion). *Journal of Royal Statistical Society*, 42(1), 245 – 292.
- Tsay, R. S., (1989). Testing and modeling threshold autoregressive processes. *Journal of the American Statistical Association*, 84(405), 231 – 240.
- Tung, L. T., & Thanh, P. T., (2015). Threshold in the relationship between inflation and economic growth: Empirical evidence in Vietnam. *Asian Social Science*, 11(10), 105 – 112.
- Turkson, J., & Wohlgemuth, N., (2001). Power sector reform and distributed generation in sub-Saharan Africa. *Energy Policy*, 29(2), 135 – 145.
- Ulke, V. & Ergun, U., (2011). Econometric analysis of import and inflation relationship in Turkey between 1995 – 2010. *Journal of Economic and Social Studies*, 1(2), 69 – 86.
- Umar, M., & Dahalan, J., (2015). Evidence on real exchange rate-inflation causality: An application of Toda-Yamamoto dynamic granger causality test. *International Business Management*, 9(5), 666 – 675.
- Usman, O. & Musa, M. S., (2018). Revisiting exchange rate pass-through to consumer price inflation in Nigeria: A cointegrated vector autoregressive approach. *Academic Journal of Economic Studies*, 4(1), 60 – 67.
- Vinayagathan, T., (2013). Inflation and economic growth: A dynamic panel threshold analysis for Asian economies. *Journal of Asian Economics*, 26, 31 – 41.

- Walker, G. T., (1931). On periodicity in series of related terms. *Proceedings of the Royal Society London, A*, 131(818), 518 – 532.
- Weinhold, D., (1999). A dynamic fixed effects model for heterogeneous panel data. *London School of Economics*. Mimeo.
- Wilson, A., David, U. Inyiama, O., & Beatrice, E., (2014). Oil price volatility and economic development: Stylized evidence in Nigeria. *Journal of Economics and International Finance*, 6(6), 125 – 133.
- Wimanda, R. E., (2014). Threshold effects of exchange rate depreciation and money growth on inflation: Evidence from Indonesia. *Journal of Economic Studies*, 41(2) 196 – 215.
- Wold, H., (1939). A study in analysis of stationary time series. *Journal of Royal Statistical Society*, 102(2), 295 – 298.
- World Bank, (2016). World Development Indicator, *World Bank Open Data*. <http://data.worldbank.org/> accessed 19<sup>th</sup> Dec. 2016.
- Yanamandra, V., (2015). Exchange rate changes and inflation in India: What is the extent of exchange rate pass-through to imports?. *Economic Analysis and Policy*, 47, 57 – 68.
- Yule, G. U., (1927). On a method of investigating periodicities in disturbed series, with special reference to Wolfer's sunspot numbers. *Philosophical Transactions of the Royal Society of London Series A*, 226, 267 - 298.
- Zhang, C., (2011). Inflation persistence, inflation expectations, and monetary policy in China. *Economic Modeling*, 28(1), 622 – 629.
- Zhang, C., & Clovis, J., (2010). China inflation dynamics: Persistence and policy regimes. *Journal of Policy Modeling*, 32(3), 373 – 388.

Zubair, A., Okorie, G., & Sanusi, A. R., (2013). Exchange rate pass-through to domestic prices in Nigeria: An empirical investigation. *Economic and Financial Review*, 51(1), 1 – 28.

