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DOES TRADE OPENNESS CONTRIBUTE TO ECONOMIC GROWTH AND DEVELOPMENT OF MOROCCO?

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Abstract

This paper examines the dynamic relationship between trade liberalization on economic growth and economic development in the Kingdom of Morocco. Using yearly data obtained from the Federal Reserve Bank of Saint Luis (FRED) for the period of 1960-2018 and employing Granger Causality and an Auto-Regressive Distributed Lag (ARDL) time series model, we analyze the effects of trade openness, economic growth, and economic development. Our results suggest that trade liberalization Granger causes economic growth. Moreover, ARDL results show that trade openness has a statistically significant yet negligibly small impact on economic growth both in the short-run and in the long run. The effect of trade liberalization on economic development is not statistically significant in the short-run and long run.

Keywords: *Trade Liberalization, Trade Policies, Economic Growth, Development, ARDL, Morocco.*

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1. INTRODUCTION

Trade openness and its impact on economic growth has been researched in the literature extensively during the past few decades. Trade openness can potentially increase economic growth by increasing efficient allocation of resources and improving total factor productivity through technology adoption and knowledge dissemination. Hence, trade is perceived as a means to improve the income and living standards in a given country (Andersen and Babula, 2006; Liu, 2016). Thus, countries around the globe adopted various policies to liberalize their trade. Beside unilateral trade and other nonreciprocal treaties such as the General System of Preferences (GSP), trade policies are mainly adopted through mutual international trade negotiations, either multilaterally under the umbrella of the World Trade Organization (WTO) or bilaterally through regional trade agreements. Trade liberalization policies are relatively easier to implement compared to other policies that require significant reforms and are politically sensitive.

The majority of research has been done on the impact of openness oneconomic growth, while the effect of openness on economic development has attracted little attention (Nourzad and Powell, 2003). In the 1970s, a differentiation between growth and development emerged. Economic development shows the overall welfare of the people including education, health, nutrition and so on (Nourzad and Powell, 2003). Some studies show that economic growth and economic development are not correlated while others indicate that growth and development are interdependent since policies that increase growth also foster development The dominant view is that while development is an condition of economic growth, growth itself not sufficient for development (Mazumdar, 1996).

This paper investigates the effects of trade openness on economic growth and economic development in the Kingdom of Morocco. Using yearly data obtained from the Federal Bank of St Louis for the period of 1950-2017 and employing an Auto Regressive Distributed Lag (ARDL) time series model, we analyze the dynamic relationship between trade openness, economic growth and some economic development indicators for the Kingdom of Morocco. To the best of our knowledge, this is the first study examining the effects of trade liberalization on economic growth and development of Morocco.

The organization of this paper is as follows. The next section reviews the literature. Section three introduces the methodology and data followed by section four that presents results and the last section concludes.

2. LITERATURE REVIEW

Trade and growth

Many studies have shown that trade openness has a positive impact on growth (Tahir, Mazhar and Afridi, 2019). The positive impact is attributed to the diffusion of technological inventions, capital flow, economies of scale, and rise in productivity (Anderson and Babua, 2009). One of the early studies that examined the effectiveness of trade openness was the work of Feder (1983). The study shows that trade openness boosts economic growth by not only raising output levels of capital and labor but also by redistributing resources from less productive companies to higher productive ones. Furthermore, within the framework of the endogenous growth model, Ahmed (2003) studies the correlation between trade liberalization and industrial performance in Bangladesh. He finds that there is cointegration between the industrial production and its determinants of investment-GDP and the average share of export in GDP, and secondary school enrolment. Ahmed (2003) concludes that long-run correlation between local investment, education, export, and industrial production in the Bangladeshi economy. Yanikkaya (2003) used a cross-country regression to a panel data of more than 100 developed and developing nations for the 1970-1997 period. He finds that trade openness contributes significantly to economic growth. Moreover, the findings show that trade effects on growth are largely similar between developed and developing countries. Wacziarg and Welch (2008) examine the correlation between trade liberation and growth in a large sample, which includes 141 countries over the 1950-1998 period. They conclude that nations with liberalized trade experienced an average 1.5-percentage points higher comparing to pre-liberalization period. Moreover, trade liberalization increases investment by 1.5-2.0 percentage points. They argue as well that liberalization of trade boosts growth in the liberalized nations through increasing the physical capital accumulation. Madsen (2009) relies on a long data set for 16 industrialized countries to examine the correlation between openness and economic growth. He finds that trade openness does not considerably affect growth. However, he shows that openness combined with foreign knowledge positively increases productivity.

On the other hand, other studies argue that trade openness is not always positive. Jang (2011) studies how free trade agreements affect foreign direct investments among OECD countries. The study concludes that a trade treaty between two developed countries has a negative effect on the economy as the inward foreign direct investment can be decreased if these investments are a crucial contributor to their economic growth (Jang, 2011). Moreover, Menyah, Nazlioglu and Wolde-Rufael (2014) study the impact of financial development and

trade openness on economic growth in 21 Sub-Saharan African nations covering the period from 1965-2008. They found a limited causal correlation between financial development and trade openness. There is little evidence that trade liberalization leads to economic growth in sub-Saharan African countries. Furthermore, Tahir et al. (2019) find that trade openness affects economic sectors differently. Trade openness has a positive impact on agriculture and industry, while it influences negatively the third sector.

In the Middle East, Haouas, Al-Shourbagui, and Rachied (2014) studied the effect of trade openness on the economic growth in 13 MENA countries during 1990-2011 period. Their findings show that increasing the degree of liberalization of trade has a slightly insignificant positive impact on economic growth in those countries. Similarly, Ayad and Belmokaddem (2017) examine the correlation between trade openness and economic growth in 16 MENA nations for the period 1980-2014. They find that trade openness has little impact on economic growth. Moroever, they argue that despite the liberalization reforms in the global trade, the MENA countries get very little gain. Moreover, Rehman, Ali, and Nasir (2015) investigate the correlation between trade openness and economic growth in Saudi Arabia from 1971 to 2012. They find there is a unidirectional correlation between economic growth and trade openness, where the trade openness leads to economic growth.

Trade and Development

The relationship between trade openness and development has attracted the attention of scholars for a long time. Eusufzai (1996) conducted one of the pioneer study to establish the correlation between the two. He finds a positive relationship between trade openness and development. He assesses the impact of trade openness on several variables such as infant mortality rate, access to safe water, the human development index (HDI), and the income-distribution-adjusted HDI. Moreover, Frankel and Romer (1999) argue that nations with higher opportunities to trade have a higher income. They examine empirically the effect of international trade on standards of living, with a special focus on countries' geographic characteristics. They conclude that trade improves income. Trade raises income by encouraging human and physical capital and by augmenting output for certain levels of capital (Frankel and Romer, 1999).

Dollar and Kraay (2001) examine the variance among countries that involved in globalization and those that resisted it. They show that nations, which engage in the globalized world, are catching up wealthy countries, while non-globalizers stay poor. Using a 100 countries panel dataset, Dollar and Kraay (2001) assess the correlation between trade openness

and growth rate. The globalizers' growth rate rose, while developed countries' growth rate slowed down. Trade openness contributes to alleviating poverty in globalizing developing economies. Moreover, trade openness leads to faster growth and poverty alleviation in poor nations. Therefore, according to these findings, trade openness is a tool to alleviate poverty in developing countries by boosting people's income. Similarly, Nourzad and Powell (2003) examine the direct correlation between the level of development and trade openness. They find that trade openness positively affects both social development and economic growth. Furthermore, they found that economic growth has a positive impact on development. Their results showed that development decelerates growth (Nourzad and Powell, 2003). Relying on a panel data from 219 countries, Owen and Wu (2007) investigate the correlation between trade openness and health outcomes over 1960-1995 period. They find that openness is bound up with lower infant mortality rates and higher life expectancy, particularly in developing nations. Winters and Martuscelli (2014) find that generally trade liberalization increase income and reduces poverty. Sun, MacIsaac, Duclos, and Lilly (2019) examine the impact of trade liberalization on skill acquisition. The attempts to determine the effect on the demand and supply for skills. They find that trade with developing countries leads to pressure low-skilled workers while raising the demand for high-skilled jobs (Sun et al, 2019). Jawadi, El Gouddi, Ftiti, and Kacem's (2018) is one of few study that examine the impact of trade openness on development in the Middle East. They investigate the impact of trade openness on health in 12 MENA countries. Using a panel data for the period 1970-2015, the study assess if the trade has an impact on life expectancy and the infant mortality rate. They conclude that trade openness has indeed a positive impact on health in the MENA countries, as it decrease the infant mortality rate and improves life expectancy for both men and women.

3. METHODOLOGY and DATA

We used trade openness, GDP growth and Human Capital index data starting from 1950 to 2017. All data are obtained from the Federal Reserve at Saint Luis. The functional form of the relationship between GDP and related variables can be expressed as follows:

$$Y = f(OPEN) \quad (1)$$

$$HCI = f(OPEN) \quad (2)$$

Where Y represents the real GDP of Morocco and OPEN represents the trade openness. Conventionally, this relationship is specified as a single-equation expressed in linear logarithmic form linking the GDP and trade openness variables as follows:

$$lnY_t = \alpha_0 + \alpha_1 lnOPEN_t + \varepsilon_t \quad (3)$$

$$lnHCI_t = \alpha_0 + \alpha_1 lnOPEN_t + \varepsilon_t \quad (4)$$

Where ln represents the logarithmic form of the variables, subscript t represents time. α_0 is the intercept and α_1 is the coefficient of variable OPEN in level equation, which is the variable of interest. Theoretically, trade openness is expected to have a positive impact on economic development. Hence, we expect the sing of the coefficient α_1 to be positive and statistically significant (α_1>0). Finally, ε is the error term assumed to be white noise with zero mean, constant variance.

Since the data are time-series, it requires the transformation in equations (4) and (5) Various methods can be used to estimate the time series model in equation (4) and (5) such as Error Correction Model (ECM) and Vector Autoregressive (VAR). However, Autoregressive Distributed Lag (ARDL) has several advantages over others. First, ARDL approach does not require variables to be integrated of the same order. It can be employed whether the variables are I(0) and/or I(1). Secondly, ARDL performs better if the sample size is small, which is the case for our study. Third, ARDL approach differentiates between the short-run and the long-run effects and estimate both in one-step. Finally, Paseran et al. (2001) indicates that there is no need for a unit-root test because the critical values of the F test that they tabulate has integrating properties of all variables in a given model. Hence, this study employs ARDL model.

The generalized form of ARDL model:

$$\Delta lnY_t = \beta_0 + \beta_1 lnY_{t-1} + \beta_2 lnOPEN_{t-1} + \sum_{j=1}^{n} \beta_3 \Delta lnY_{t-j} + \sum_{j=0}^{n} \beta_4 \Delta lnOPEN_{t-j} + \varepsilon_t \quad (4)$$

$$\Delta lnHCI_t = \beta_0 + \beta_1 lnY_{t-1} + \beta_2 lnOPEN_{t-1} + \sum_{j=1}^{n} \beta_3 \Delta lnY_{t-j} + \sum_{j=0}^{n} \beta_4 \Delta lnOPEN_{t-j} + \varepsilon_t \quad (5)$$

Where Δ is the first difference operation. The coefficients of first-differenced variables (β_3 and β_4) indicate the short-run effects while the coefficient of level variables (β_0-β_2) reflects the long-run effects. The estimation of equation (4) and (5) gives both the short-run and the long-run effects in one step.

4. RESULTS

The results of estimations are presented in the following tables 1-5 followed by diagnostic tests. Granger causality results show a unidirectional causality from trade openness to real GDP.

Table 1. Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LNOPEN does not Granger Cause LNGDP	59	3.29585	0.0446
LNGDP does not Granger Cause LNOPEN		2.78964	0.0703

When examining the short-run relationship between trade openness and economic growth, the short-term is expressed as β_4 in equation (4) and referred to as DLN(OPEN) in Table 2 below. The short-run coefficient in Table 1 is 0.006 and corresponds to a p-value that is smaller than 0.05 suggesting that, in the short-run, the impact of openness on economic growth is statistically significant. However, the magnitude of the effect is quite smaller such that GDP increases by 0.06 percent per 10 percent increase in openness.

Table 2. Coefficient estimation for short-run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.020381	0.081738	-0.249348	0.8040
RGDP(-1)	0.005721	0.006825	0.838157	0.4055
OPEN(-1)	2.02E-05	0.000334	0.060464	0.9520
D(OPEN)	0.006205	0.000950	6.530231	0.0000

Table 3. Coefficient estimation for long-run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OPEN	0.093527	0.057439	2.061404	0.0413

As for the long-run relationship between tourism and economic growth, the long-run coefficient is expressed as β_2 in equation (4) and referred to in Table 3 as OPEN. The long-run coefficient in Table 4 is 0.0935 and corresponds to a p-value that is lower than 0.05. This suggests that, in the long-run, the impact of openness on economic growth is statistically significant. In other words, a 10% increase in number of openness would cause about a 0.1 % increase in GDP.

Table 4. Coefficient estimation for short-run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003129	0.001667	1.876915	0.0658

HCI(-1)*	-0.001537	0.002000	-0.768668	0.4454
D(OPEN)	-1.97E-05	1.33E-05	-1.482980	0.1438
D(HCI(-1))	1.010232	0.052884	19.10274	0.0000

Table 5. Coefficient estimation for long-run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OPEN	-0.012793	0.022689	-0.563830	0.5752

Looking at the effects of openness on development in table 4 and 5, the short-run coefficient of D(OPEN) in table 4 corresponding β_4 in equation (5) is not statistically significant. Similarly, the long-run coefficient of OPEN in table 5 corresponding β_4 in equation (5) is not statistically significant. These results suggest that trade openness does not have any impact on economic development in Morocco.

To assess the validity of the assumptions our model, we tested the model for serial correlation issues, normality, constant variance, and stability of the model. To ensure that the model was checked for autocorrelation issue Breusch-Godfrey Serial Correlation LM Test is used. The null hypothesis is that there is no serial correlation in the data used. The test output shown in Table 6 below has corresponding p-values that are greater than 0.05. Thus, we fail to reject the null hypothesis. This implies that we accept the null hypothesis and the model is not serially correlated.

Table 6. Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.518900	Prob. F(2,50)	0.5983
Obs*R-squared	1.199703	Prob. Chi-Square(2)	0.5489

To check the model validity for a constant variance in the error terms, we used Breusch Pagan Godfrey test for heteroskedasticity. The null hypothesis suggests that there is no heteroskedasticity, which means there is no constant variance in our data. According to the results shown in Table 7, the corresponding p-values are greater than 0.05, which implies that we reject the null hypothesis. Thus, the results show that there is a constant variance in our data.

Table 7. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.698245	Prob. F(6,52)	0.1400

Obs*R-squared	9.666891	Prob. Chi-Square(6)	0.1394
Scaled explained SS	9.569990	Prob. Chi-Square(6)	0.1440

To test if the data are normally distributed, we tested the model using Jarque-Bera test. The null hypothesis is that the data are normally distributed. According to the test's output presented in Figure 1 below, the corresponding p-value is 0.18, which implies that we fail to reject the null hypothesis suggesting that the data used are normally distributed.

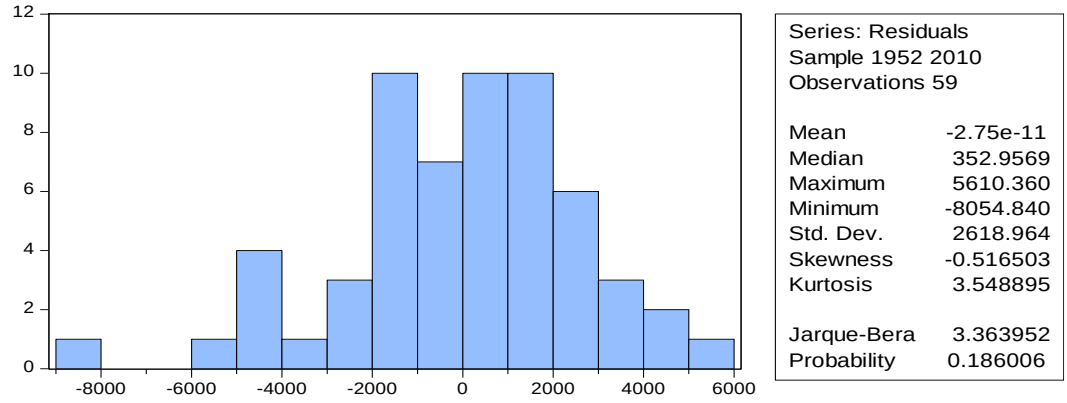

Figure 1. Normality test.

5. DISCUSSION and CONCLUDING REMARKS

In this paper, we attempted to examine the impact of trade openness on the economic growth and development in Morocco. Using trade openness index, GDP, and Human Capital Index data obtained from the Federal Reserve of Saint Luis and employing Granger Causality and ARDL methods, we find unidirectional causality running from trade openness to economic growth. We also find that trade openness has statistically positive impact on economic growth both in the short run and in the long run, but the magnitudes of the contribution are negligibly small. These findings are in line with the findings of Haouas et al. (2014) and Ayad and Belmokaddem (2017). Despite the liberalization reforms in the global trade, the MENA countries get very little gain from trade. On the other hand, effects of free trade on economic development is not statistically significant both in the short-run and long-run. This is not surprising as economic development can be achieved mainly through economic growth. Future studies can focus on effects of free trade on sectoral level economic growth as disaggregated data would provide more information at sectoral level. Moroever, different indicator of development can be used to test the effects of openness on economic development.

References

Ahmed, N. (2003). Trade Liberalization and Endogenous Growth of Manufacturing Industries in Bangladesh: An Empirical Investigation. Applied Economics, 35 (3), 305-314.

Andersen, L, & Babula, R. (2006). The Link Between Openness and Long-run Economic Growth. Journal of International Commerce and Economics.

Ayad, H, & Belmokaddem, M. (2017). Financial Development, Trade Openness and Economic Growth in MENA Countries: TYDL Panel Causality Approach. Theoretical and Applied Economics, 14 (1), 209-222.

Dollar, D, & Kraay, A. (2001). Trade, Growth, and Poverty. World bank, Development Research Group, Macroeconomics and Growth.

Eusufzai, Z. (1996). Openness, Economic Growth, and Development. Economic Development and Cultural Change, 44 (2), pp. 333-338.

Feder, G. (1983). On Export and Economic Growth. Journal of Development Economics, 12 (2), 59-73.

Frankel, J, & Romer, D. (1999). Does Trade Cause Growth? American Economic Review, 89 (3), pp. 379-399.

Haouas, A, Al-Shourbagui, M, Rachied, Y. (2014). The Impact of Trade Openness on Economic Growth: Empirical Evidence from the MENA Countries. Development and Economic Policy Journal, 16 (2), 7-36.

Jang, J, Y. (2011). The Impact of Bilateral Free Trade Agreements on Bilateral Foreign Direct Investment Among Developed Countries. The World Economy, 34 (9), pp. 1628-1651.

Jawadi, F, El Goudi, S, Ftiti, Z, & Kacem, A. (2018). Assessing the Effect of Trade Openness on Health in the MENA Region: a Panel Data Analysis. Open Economies Review, 29, 469-479.

Liu, X. (2016). Trade Agreements and Economic Growth. Southern Economic Journal, 82 (4), pp1374-1401.

Madsen, J. (2009). Trade Barriers, Openness, and Economic Growth. Southern Economic Journal, 76 (2), 397-418.

Mazumdar, K. (1996). An Analysis of Causal Flow Between Social Development and Economic Growth. American Journal of Economics and Sociology, 55 (3), pp. 361-383.

Menyah, K, Nazlioglu, S, Wolde-Rufael, Y. (2014). Financial Development, Trade Openness and Economic Growth in African Countries: New Insights from a Panel Causality Approach. Economic Modelling, 37, pp. 386-394.

Nourzad, F, & Powell, J. (2003). Openness, Growth, and Development: Evidence from a Panel of Developing Countries. Scientific Journal of Administrative Development, 1 (1), pp. 72-94.

Owen, A, & Wu, S. (2007). Is trade Good for Your Health? Review of International Economics, 15 (4), 660-682.

Rehman, Z, M, Ali, N, Nasir, N. (2015). Linkage Between Financial Development, Trade Openness, and Economic Growth: Evidence from Saudi Arabia. Journal of Applied Finance & Banking, 5 (6), 127-141.

Sun, Z, S, MacIsaac, S, Duclos, B, & Lilly, B, M. (2019). The Effects of Trade Liberalization on Skill Acquisition: A Systematic Review. Journal of International Trade Law and Policy, 18 2), pp. 74-95.

Tahir, M, Mazhar, T, & Afridi, M. (2019). Trade Openness and Sectoral Growth in Developing Countries: Some New Insights. Journal of Chinese Economic and Foreign Trade Studies, 12 (2), 90-103.

United Nations Development Program, Human Development Report, the 1990-2015 issues.

Wacziarg, R, & Welch, K. (2008). Trade Liberalization and Growth: New Evidence. World Bank Economic Review, 22 (2), 187-231.

Winters, A, & Martuscelli, A. (2014). Trade Liberalization and Poverty: What Have We Learned in a Decade? Annual Review of Resource Economics, 6, 493-512.

Yanikkaya, H. (2003). Trade Openness and Economic Growth: a Cross-country Empirical Investigation. Journal of Development Economics, 72, 57-89.