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Does the Number of Hajj Pilgrims Boost Economic Growth in Saudi Arabia?

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Abstract:

This paper uses the multivariate Johansen cointegration approach and Granger causality tests to study the causal relationship between the number of pilgrims and the non-oil GDP growth in Saudi Arabia over the period 1980–2016 by integrating the real effective exchange rate index as an additional variable. Our findings indicate that there is only one long-run relationship between the three variables when the non-oil GDP growth is the dependent variable. There is a unidirectional long-run causality from the number of pilgrims to non-oil GDP growth. Besides, we find no short-run causal relationships between the three variables. Therefore, an important policy implication resulting from this study is that pilgrims can be a led growth factor to economic growth in Saudi Arabia in the long run. The pilgrimage event can, therefore, be an excellent opportunity for Saudi Arabia to boost its economic activity as stated by its 2030 vision.

Keywords: Number of Pilgrims, Non-oil GDP Growth, Johansen Cointegration, Granger Causality, Saudi Arabia.

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1. Introduction:

The Hajj event takes place within the city of Makkah, which the Muslim world considers it has holy. Makkah and Medina exhibit a variety of historical and archeological sites, whereby, upon proper maintenance, they will have significant effect on Saudi Arabia's economic activities, particularly within the tourism industry (Mnasri and Farhat, 2016). The Hajj pilgrimage is a popular event that is celebrated globally. Millions of Muslims from various parts of the world participate in the holy event each year. This is especially because, among the Muslims community, the event is considered as a religious obligation. It is part of Islam's five pillars, with Hajj actually being the fifth pillar (Fazel, 2016). The event is an annual celebration and it is further viewed as an approach of demonstrating solidarity while respecting God (Welman et al., 2005). On the other hand, as from early 2000, the Hajj annual event has been viewed as a destination for tourism, especially in Medina and Makkah. In accordance with the Islamic faith, it is advisable for any Muslim who has funds and is physically fit, to at least participate once in the Hajj pilgrimage during their lifetime. The pilgrimage event normally occurs in the final month as per Islamic calendar. The event dates back several years ago from the period of prophet Ibrahim, and it generally concerns prophet Muhammad life during 7th century period. At the event, various activities considered as rituals take place (Berkey, 2003).

The Muslim community perceives the Hajj event to be of huge value as one's participation is of great benefit. The attendance of the event is in large masses, thus bringing about business opportunities, while also promoting tourism sector in Saudi Arabia (Allen, 2009). Therefore, despite the Hajj being an event that seeks to demonstrate Muslim strong belief, Saudi Arabia will have the task of making preparations so as to meet the demands for this population, thus they can impact towards the economic growth of the country (Al-Rasheed, 2010; Kouchi, Nezhad, and Kiani, 2016). This is particularly demonstrated whereby, there is a need for security, and

therefore, there is a need to increase the security personnel's, which thus leads to employment opportunities for the people of Saudi Arabia. The success in the celebration of a huge event such as Hajj pilgrimage will exhibit numerous impacts before and after the occurrence of the event. The impacts can be either negative or positive, and its effect can touch on economic and social factors within Saudi Arabia (Nizami, 2017). Its impacts will not be only on Saudi people alone, but also on both Muslims and Non-Muslims (Vasil'ev, 2000).

Saudi Arabia is looking towards achieving the most appropriate approaches of managing the Hajj pilgrimage with the view of promoting the maximum of economic gains from the event. This can be achieved through the inclusion of advanced methods to promote more relevance of the event, thus assisting in the realization of the event significance to the Hajj community. As a result, Saudi Arabia allocates in its budget a significant amount towards the enhancement and facilitation of the global event. Additionally, the research focuses on investigating whether the increase in the participants of Hajj pilgrimage event in Saudi Arabia is economically sustainable. This is by exploring the event's impact towards the local community of Madinah and Makkah cities. Therefore, the formulation of the study is to establish on how the increased number of participants in the Hajj event can contribute to economic growth of Saudi Arabia. Therefore, our study will aim at explaining the causal relationship between the annual number of pilgrims and economic growth in Saudi Arabia.

With the occurrence of Hajj pilgrimage as a global event, whose attendance is by almost all type of races globally, the event exhibits some issues that require to be investigated. First, as the event annually occurs, this implies that each year, there is a chance for the Saudi government to manage the event in such a way that it will improve its citizens living standards, as well as promote the nation's economic growth as a whole (Berkey, 2003, Slight, 2016). Additionally, a majority of the Saudi citizens have a chance

of making the event of significant socioeconomic importance. Moreover, the event also places the Saudi government at a task on an annual basis. As a result, the government will focus on ensuring that the population welfare is reached and guaranteed. One of the approaches is by the government making sure on the existence of well-established infrastructure to assist in the facilitation of the event (Welman et al., 2005, Kouchi et al., 2016). These preparations by the government will eventually be of great benefit to Saudi Arabia once the event is over, with the established infrastructure being of economic significance for the country. This is especially because, with the provision of infrastructure and accommodation facilities for the increased number of pilgrims, it will offer employment opportunities to the Saudi locals. Moreover, this will promote sustainability in respect their daily essential requirements, which will consequently lead to the growth of the country's GDP and hence poverty reduction. Besides, with the increase in the number of pilgrims, it will facilitate trading activities, thereby, increasing the income for the inhabitants (Al-Rasheed, 2010). The study will focus on determining whether an increase in the number of Hajj pilgrims can boost economic growth in Saudi Arabia.

The remainder of the paper is organized as follows. We present a literature review in the second section. Section 3 gives an overview on the data and the Johansen multivariate cointegration technique and Granger causality tests used to study the causal relationship between the number of pilgrims and non-oil GDP growth for Saudi Arabia. In section 4, we present the empirical findings and their discussion. Finally, we conclude the paper by some policy implications.

2. Literature review:

We focus here on critical analysis of the previous research, mainly, about the Hajj event. We further provide a detailed review concerning Hajj performance impact and its economic significance towards the Muslim community. Additionally, the review will consider the socioeconomic

factors of the event. According to the study by Janin and Besheer (2013), an increase in Hajj pilgrims can promote the country's economic activities. This is because, with the focus on sustainable event management, there is an involvement of the three factors of sustainability that are the economic, environmental and the sociological factors. Therefore, with the involvement of the relevant stakeholders, it greatly contributes towards the adoption of measures, which will be of economic gains for the country apart from satisfying the needs of the increased number of pilgrims (Nizam, 2016).

2.1. Hajj pilgrim's role in boosting economic growth in Saudi Arabia

Saudi Arabia government focuses on ensuring its citizens' participation on the pilgrimage at least after every five years. The objective of putting this in place is with the aim of controlling crowds during the event. Additionally, it exhibits policies towards the expansion of the shrines in order to realize an increased number of pilgrims annually. According to Jones (2010), the target to accommodate an increased number of pilgrims leads to the development of more housing as well as proper health care facilities as a means of satisfying the needs of the increased number of pilgrims. Clingingsmith et al. (2008) show that the increase in the number of Hajj pilgrims facilitates the development of better transport system and health facilities. Therefore, with the existence of better transport, it will ease the movement of people, goods, and services with the country, which will consequently lead to expand economic activities and hence affect economic growth in Saudi Arabia. In addition, with better healthcare facilities, apart from providing mitigation against health dangers to the expected mass gatherings, it will also greatly improve the state of health facilities within Saudi Arabia. The research by Ljioui and Emmerich (2013) observes that through the increase and improvement in healthcare services towards promoting a healthy well-being of the participants, Saudi Arabia residents will also benefit. This is because, with enhanced health care services, a country is more likely to experience economic growth since the

citizens can adequately rely on the services being offered, thus increasing the country's revenues (Kottasova, 2016).

A study by Sheikh and Gatrad (2008) also illustrates that with an increase in Hajj pilgrims, it will promote the government initiatives of infrastructure improvement with the focus on provision of additional accommodation facilities to meet the needs of the pilgrims during the event. This consequently leads to the availability of employment opportunities that will be offered to the Saudi locals (Haddad, 2016). This will further addresses the country's concern in which there is a high proportion of unemployed young people. These will also have a contribution in boosting the economic growth of Saudi Arabia due to the infrastructural developments facilitating trading activities (Kottasova, 2016). This is manifested whereby, because of the increase in the number of pilgrims, which undertake exchange of currencies, thus being of benefit to the government (Pfister and Tierney, 2009). Thus, in the event planning process, adequate security should be ensured as a means of guaranteeing the safety of the pilgrims. On the other hand, this also benefits the locals by providing them with employment opportunities as security personnel. Therefore, apart from the government gaining from currency exchanges, the Saudi locals gain in terms of security provision, which all contribute towards boosting the economic growth of Saudi Arabia (Crane and Weber, 2012).

The study by Allen (2012) also demonstrates that the increase in the number of Hajj pilgrims will promote employment opportunities. This is manifested whereby; more officers will need to be located at every Saudi Arabia entry points with the task of preventing airborne transmissions. In addition, more health attendants will be employed and be situated at the venues with the objective of catering the possibilities of any eventualities. As well as more employment opportunities being experienced, the Saudi government will need to acquire proper health facilities, which all contribute boosting the economic growth of the country (Ljioui and Emmerich,

2013). Moreover, further expansion of a holy mosque in Makkah has been experienced. In addition, there has been a contribution by the government to expand prophet Mohamed mosque located in Madinah. Additionally, there has been an establishment of open pathways that direct pilgrims and focus towards crowd prevention. These approaches positively influence the Saudi environment since they lead to a reduction in the levels of pollution, hence promoting environmental sustainability, which has a contribution towards the economic growth of Saudi Arabia (Bhushana, 2013).

2.2. Hajj pilgrim's contribution in soothing Saudi Arabia's oil pain and economic growth for vision 2030:

With the collapse in global oil prices as from the year 2014, the financial situation of Saudi Arabia has been significantly hit with its revenue falling by 23% in the year 2016. The low oil prices being mainly because of its lack of demand, thus affecting the process of supply (Izraeli, 2012). The pilgrimage event is, therefore, an excellent opportunity for Saudi Arabia towards identifying approaches to boosting the country's revenues. According to the study by McKinsey Global Institute, tourism worth in Saudi Arabia during the year 2015 was approximately $22 billion, which accounts for a 3.5% of GDP, in comparison to oil, which has a share of 40%. The government objective is, therefore, towards attracting 30 million pilgrims annually by the year 2030 (Kottasova, 2016). The report thus illustrates that, currently, about 883,000 work in the tourism sector, representing 8% of the country's jobs. Moreover, with the focus to increase the number of Hajj pilgrims, Saudi Arabia plans to ease visa restrictions as a means of allowing pilgrims a longer stay in the country, and thus engage in other travels at the end of Hajj (Jordan, 2011). This will promote tourism particularly in areas such as diving at the Red Sea, visits to the ancient monuments, as well as the Arabian Desert. Additionally, the country has established measures with the view of increasing the number of pilgrims to promote tourism. Vision 2030 aims at promoting entertainment initiative, through the establishment

of a new commission of entertainment and culture. Cultural activities will gain official support comprises of museum exhibitions, festivals, and circus performances (Salman, 2017).

This is notable whereby; councils of ministers in the country gave their approval towards the establishment of Saudi Association for Tourist Guides, Saudi Association for Tourist Accommodation facilities, and the Saudi Association for Travel and Tourism. In addition, the study by Taylor (2011), illustrates that tourist attraction sites within the country are established naturally. In this case, therefore, through good maintenance, it can provide the country with an enormous source of revenue, with the well-recognized tourist destinations being Makkah and Madinah. Millions of people visit these cities, though the Muslims are the only ones allowed to visit the cities. The attraction attributed to Makkah city is because it is considered where the prophet developed an insight concerning the Quran (Berkey, 2003). As a result, the city commands a significant honor, respect, and love, especially from the Muslim community. McMillan (2011) further observes that Saudi Arabia has manifested rapid growth within the tourism sector as a non-oil industry. Therefore, through its well implementation, it will positively influences economic growth in the country; hence minimizes the oil-pain that the country is experiencing. As also noted in the study by Kotler and Keller (2012), the expansion of the tourism industry greatly contributes in promoting some economic activities in Saudi Arabia. This is especially because of the widest internet connection within Saudi society.

During the preparation of the Hajj event, a research gap exists concerning the approaches that should be adopted to ensure that the available resources caters for all the pilgrims who attend the event. This consequently manifests challenges due to the inability to control the pilgrims, thus, resulting in environmental pollution. For the country to realize positive economic growth, all its resources should be well utilized with less negative outcomes being experienced in the process of attempting to realize economic gains

with the rise of pilgrims in the country. Further research should focus on the implementation of appropriate measures to minimize challenges that Saudi Arabia experiences while attempting to adopt tourism industry as the main source of revenue (Jordan, 2011).

3. Data and Methodology:

3.1. Data:

The data used in this study cover the period 1980 to 2016. Theyare employed to investigate the various dynamic causal relationships between the variables of annual number of pilgrims (NP), real effective exchange rate (RECR), and non-oil GDP annual growth (NOEG) in Saudi Arabia. The variable of real exchange effective rate index (2010 = 100) is considered here to deal with potential over-looked variable problems (Belloumi, 2010; Oh, 2005). As Saudi Arabia has an oil-based economy, non-oil GDP annual growth at constant prices (2010=100) is used to better represent economic activities growth in the country. Data concerning non-oil economic growth are obtained from the Saudi Arabia Monetary Agency (SAMA). The data of real effective exchange rate are taken from the world development indicators of the World Bank (WDI, 2016). The series of annual number of pilgrims are collected from different reports of the Saudi General Authority for Statistics and the Saudi Ministry of Hajj and Umra. Descriptive statistics of the various series are presented in table 1.

Table 1. Descriptive statistics of the series

	NP	NOEG	RECR
Mean	2001606	4.1567	136.381
Median	1943000	3.530	121.621
Maximum	3161573	9.910	245.567
Minimum	1380000	-5.200	93.623

.Std. Dev	403475.6	3.453	47.934
Skewness	0.979	-0.237	1.493
Kurtosis	3.850	2.873	3.719
Observations	37	37	37

3.2. Methodology:

We use the Johansen multivariate cointegration methodology to investigate the causal relationships between non-oil GDP annual growth and the annual number of pilgrims. This approach, originally developed by Johansen and Juselius (1990) and Johansen (1991), is undertaken in four steps. Firstly, we investigate the order of integration of the various series under consideration using the unit root tests such that the augmented dickey fuller (ADF) test (Dickey and Fuller, 1981) and the Phillips-Perron (PP) test (Phillips and Perron, 1988). In addition, we use the break point unit root tests of Perron (1989) in order to see if the series present structural change. Secondly, when we find that all the series are integrated of the same order, we use the Johansen cointegration tests (trace test and the maximum eigenvalue test) to check for the existence of the long run relationships between the variables. The Johansen cointegration tests are applied after estimating the following vector autoregressive (VAR) model:

$$\mathbf{Yt = \alpha + \mu 1\ Yt\text{-}1 + \mu 2\ Yt\text{-}2 + \ldots + \mu k\ Yt\text{-}k + \beta\ It + \varepsilon t} \quad \mathbf{(1)}$$

where Yt is the vector of the three variables NOEG, NP and RECR; Yt-1, Yt-2 , …, Yt-K are the lagged vectors; α is an intercept, It represents the vector of the dummy variables for the breakpoints and εt is an error term independently and identically distributed with zero mean and constant variance; k is the order of the VAR model. The order of the model is chosen based on the minimum of Schwartz information criterion (SC), Akaike information criterion (AIC), final prediction error (FPE), Hannan-Quinn information criterion (HQ), and sequential modified LR test statistic (LR).

Thirdly, if there is at least one long run relationship between the variables, we estimate the vector error correction (VEC) model given by eq. 2.

$$D(Yt) = \alpha + \mu 1\ D(Yt\text{-}1) + \mu 2\ D(Yt\text{-}2) + \ldots + \mu k\ D(Yt\text{-}k) + \beta\ It + \Delta\ ECTt\text{-}1 + \varepsilon t \quad (2)$$

where D is a difference operator, and ECT is the error correction term.

In the VEC model, the coefficient of the error correction term indicates the speed of adjustment toward the long run relationship. If the coefficient of the error correction term (ECT) is negative and statistically significant, we confirm the existence of the cointegration relationship. If not, we reject the existence of the long run relationship. Finally, when the variables are cointegrated, we check the short run causal relationships using the Granger causality tests (Granger, 1969) on the VEC model. Short run Granger causality is investigated under the null hypothesis where all the coefficients of the lagged variables are equal to zero. The Granger causality tests, firstly proposed by Granger in 1969, are implemented using a standard $\chi 2$ Wald test. When the null hypothesis is rejected, we say that the independent variable Granger causes the dependent variable in the short run.

If the variables are not cointegrated but they are integrated of order 1 (I(1)), we apply the Granger causality tests on the vector autoregressive (VAR) model for the first differences of the variables (Belloumi, 2009).

4. Results and discussion:

Conventional unit root tests are performed on both levels and first differences of the three variables. The results for both the conventional ADF and PP tests are reported in Table 2. It is shown that the null hypothesis of non-stationarity is not rejected at the 5% level for the levels of the three variables. However, the null hypothesis of non-stationarity is rejected at the 5% level for the first differences of the three variables. We conclude that

three variables NOEG, NP and RECR are integrated of the same order one. However, the results of ADF and PP unit root tests are not unbiased if there is a trend stationary with an exogenous structural break in the variables (Perron, 1989). In order to take into account into account the presence of structural change in the variables, we use breakpoint unit root test developed by Perron. The results of this test are presented in Table 3. We find the same results as the conventional unit root tests. All the variables are integrated of order one.

Table 2. Results of conventional unit root tests

Variable	ADF test statistics		PP test statistics	
	Levels	First differences	Levels	First differences
Non-oil GDP annual growth	(0.06) -1.87	(0.00) -6.14	(0.06) -1.89	(0.00) -6.15
Number of pilgrims	(0.20) -2.21	(0.00) -7.01	(0.22) -2.16	(0.00) -7.32
Real effective exchange rate index	(0.11) -2.56	(0.00) -2.95	(0.16) -2.35	(0.00) -2.93

Note: The value between brackets represent probabilities. The lag lengths for the ADF tests are chosen based on SC using a range of lags from 0 to 9.

Table 3. Results of Perron breakpoint unit root tests

Variable	Break	Lag length	Intercept	INCPT BREAK	TREND	TREND BREAK	BREAK DUM	ADF test statistic	Order of integration
NOEG	2012	0	-0.39 (0.61)	-	0.11 (0.01)	-0.98 (0.01)	-	-3.29 [-4.52]	I(1)
NP	2009	0	905822 (0.00)	841526 (0.00)	15468 (0.01)	-172846 (0.00)	-690253 (0.04)	-4.07 [-5.17]	I(1)
RECR	2006	9	107.42 (0.00)	-	-2.96 (0.00)	4.04 (0.00)	-	-3.94 [-4.52]	I(1)

Notes: Numbers in (.) and [.] are respectively probabilities and 5% critical values.

Since all unit root tests show that the variables are integrated of the same order one, the multivariate Johansen cointegration tests are suitable to check the presence of long run relationships between the variables. In addition, three dummy variables representing the breaks in 2006, 2009 and 2012 are integrated in the VAR model given by eq. (1) to take into account the structural change of the variables. At the end, only the significant variables are considered. The tests of coitegration are undertaken for a lag length equal to one, which is chosen based on SC and AIC. The results of lag length are presented in Table 4. We carry out the Johansen cointegation test for the case 3 assumption where the level data has a linear trend but the cointegrating equations have only intercepts. We notice that the null hypothesis of no cointegration relationships is rejected against the alternative of one cointegrating relationship at the 5% level. Results of

both trace and maximum eigenvalue tests are shown in Table 5. Both tests show that there is at least one long-run relationship between non-oil GDP growth, number of pilgrims and the real effective exchange rate index at the 5% level of significance.

Table 4. Results of VAR lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-660.24	NA	2.44e+14	41.64	41.91	41.73
1	-599.82	*101.96	*9.87e+12	38.42	*39.11	*38.65
2	-594.80	7.51	1.30e+13	38.67	39.77	39.03
3	-589.19	7.36	1.70e+13	38.88	40.39	39.38
4	-578.11	12.46	1.65e+13	38.75	40.68	39.39
5	-562.94	14.22	1.33e+13	*38.37	40.70	39.14

* Indicates lag order selected by each criterion.

Table 5. Results of Johansen cointegration tests

Hypothesized No. of CE(s)	Eigenvalue	Trace test			Max-eigenvalue test		
		Statistics	5% Critical Value	Prob.**	statistics	5% Critical Value	Prob.**
None *	0.491	45.43	29.79	0.00	23.65	21.13	0.02
At most 1 *	0.424	21.78	15.49	0.00	19.34	14.26	0.01
At most 2	0.067	2.44	3.84	0.11	2.44	3.84	0.11

* denotes rejection of the hypothesis at the 0.05 level;

**MacKinnon-Haug-Michelis (1999) p-values; Trace and Max-eigenvalue tests indicate two cointegrating equations at the 0.05 level.

The existence of cointegrating relationships between non-oil GDP growth, real effective exchange rate index and number of pilgrims indicates that there are Granger causality relations between the variables in at least one direction. The directions of causality between the variables are determined using the Granger causality tests on VEC model specified in eq. 2. The VEC model distinguishes between a long- and a short-term relationship among the variables and identifies sources of causation that is not detected by the usual Granger causality test. The dynamic Granger causality is captured from the VEC model derived from the long-run cointegrating relationship (Granger, 1988).

The results of $\chi 2$ Wald statistics of the lagged explanatory variables of the VEC model are shown in Table 6. These tests give an indication of the significance of short-run causal effects. We also provide t-statistics for the coefficients of the ECTs that give an indication of long-run causal effects. By referring to the short-run results, it is shown that none of the lagged explanatory variables in the three equations (NOEG, NP and RECR) is statistically significant. All probability values are superior to 5% indicating that we accept the null hypothesis for the all the variables in each one of the three equations. Hence, these results imply that, in the short run, there is no Granger causality between the three variables. However, the coefficient of ECT is negative and statistically significant in only the non-oil GDP growth equation. From these results, we conclude that there is a unidirectional causal effect from the number of pilgrims to non-oil GDP growth in the long run but not in the short run.

Table 6. Results of Granger causality tests

Dependent variable	Long-run causality : ECT	Short-run causality		
		DNOGR	DNP	DRECR
		χ^2 Wald statistics		
DNOGR	-0.63 [-2.73]	-	1.762 (0.18)	0.007 (0.93)
DNP	57182.71 [2.03]	0.259 (0.61)	-	0.489 (0.48)
DRECR	1.07 [1.04]	0.246 (0.61)	0.044 (0.83)	-

Our results support the hypothesis of pilgrims led growth in the long run for Saudi Arabia but they are not consistent with the findings of Kouchi, Nezhad and Kiani (2016) who found short run bidirectional causality between the number of pilgrims and non-oil GDP growth and absence of long run causality for Saudi Arabia. In our case, before testing for Granger causality, we estimated the VEC model and submitted it to a battery of diagnostic tests (the normality residual test of Jarque-Bera, the Portmanteau autocorrelation test, the autocorrelation LM test, and the White homoskedasticity test). The results of the long run equation where the non-oil GDP growth is the dependent variable and diagnostic tests for the VEC model are presented in table 7. It is well shown that the number of pilgrims has a positive and significant effect on non-oil GDP growth in the long run for Saudi Arabia.

The normality residual test statistics of Jarque-Bera is equal to 2.05 with a probability value equal to 0.35. It indicates that we accept the null hypothesis of normality of the residuals. Both VEC residual Portmanteau test and VEC LM test for autocorrelations indicate that we accept the null hypothesis of absence of autocorrelation between the error terms. Finally, the White heteroskedasticity test with the no cross terms indicates that we

accept the null hypothesis of homoskedasticity at a 5% level. Therefore, the model passes all the diagnostic tests successfully. The results of these tests validate our findings.

Table 7. Results of cointegrating equation estimation and diagnostic tests

Cointegrating Equation	
Variables	Cointegrating vector
NOGR	-1.00
NP	(6.67E-06 (6.70
RECR	(0.50) 0.003
Diagnostic tests	
Jarque-Bera Test	(J-B stat = 2.05 (0.35
Portmanteau Test	(Q-Stat = 61.31 (0.99
Serial Correlation LM Test	(LM-Stat = 4.80 (0.85
White Heteroskedasticity Test	(Chi-sq = 56.11 (0.39

5. Conclusions:

The aim of this study is to examine the causal relationship between pilgrims and economic growth for Saudi Arabia using the Johansen multivariate cointegration technique. We obtain that there a cointegrating relationship among the variables. Our findings show that the number of pilgrims leads to non-oil GDP growth for Saudi Arabia in the long run. As Saudi Arabia is looking for diversifying its economic activities, pilgrims can be an important source of revenues for the country. Policies aimed at improving infrastructure and transport services in Makkah and Madinah and the enlargement of the holy places and religious rites with better organization can lead Saudi Arabia to receive more than ten millions of pilgrims each year without considering the number of persons doing Umra.

Really, the Muslim holy places in Makkah and Madinah are an important opportunity for Saudi Arabia to enhance religious tourism and therefore economic growth. The central question for Saudi Arabia is how it can face the deficit in financial budget due to the decline in oil prices in November 2014. Pilgrimage can be one of the alternatives that can attenuate the impact of decreasing oil prices. The annual event Hajj is an opportunity for Saudi Arabia to boost its economic activity as stated by the vision 2030.

Nevertheless, our findings and analysis could be improved if the data on some variables are available. Such variables are investment in the Hajj sector, employment in the Hajj sector, revenues from hajj, number of persons doing Umra, etc.

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هل عدد الحجاج يعزز النمو الاقتصادي؟ في المملكه العربيه السعوديه

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ملخص البحث:

يستخدم هذا البحث منهج جوهانسن للتكامل المشترك متعدد المتغيرات واختبارات سببية جرانجر لدراسة العلاقة السببية بين عدد الحجاج ونمو الناتج المحلي الإجمالي غير النفطي للمملكة العربية السعودية خلال الفترة 2016-1980 من خلال دمج متغير إضافي في مؤشر سعر الصرف الفعلي الحقيقي. تشير النتائج التي توصلنا إليها إلى وجود علاقة واحدة طويلة المدى بين المتغيرات الثلاثة عندما يكون نمو الناتج المحلي الإجمالي غير النفطي هو المتغير التابع. هناك علاقة سببية طويلة المدى أحادية الاتجاه من عدد الحجاج إلى نمو الناتج المحلي الإجمالي غير النفطي. إلى جانب ذلك ، لم نجد علاقات سببية قصيرة المدى بين المتغيرات الثلاثة. لذلك ، فإن أحد الآثار السياسية الهامة الناتجة عن هذه الدراسة هو أن الحجاج يمكن أن يكونوا عامل نمو قياديًا للنمو الاقتصادي في المملكة العربية السعودية على المدى الطويل. لذلك ، يمكن أن يكون حدث الحج فرصة ممتازة للمملكة العربية السعودية لتعزيز نشاطها الاقتصادي كما هو منصوص عليه في رؤية 2030.

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