

Trade Liberalization and Economic Growth in China

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Abstract: This study investigates the role of trade liberalization in China's economy over the period 1980-2018. The Johansen cointegration and Granger causality tests, impulse response functions, and variance decomposition analysis are used in this study. The cointegration test indicates that GDP is positively related to trade openness, gross fixed capital formation, final consumption expenditure, and inflation, but negatively related to the oil price. The causality test reveals bidirectional short and long run causality relationships between trade openness, oil price, gross fixed capital formation, final consumption expenditure, inflation and GDP. The result also indicates that final consumption expenditure has the biggest effect on GDP, which suggest that improving standard of living, investments and trade openness will have tremendous effect on the economic growth.

1. Introduction

It is well known that exports play a significant role in improving the quality of production, supplying the state treasury with foreign currencies, attracting foreign investments, and creating a competitive and productive environment. Besides, imports also play an important role in supporting the country's needs for goods and services that it could not produce or where the cost of production is very high. Therefore, trade liberalization, by simplifying export and import processes, can play a vital role in boosting the country's economic growth. The discussion on the role of the trade liberalization in promoting economic growth has been ongoing since several decades ago. Many studies have shown that internationally active countries are more productive than countries that only produce for the domestic market. Besides, due to trade liberalization, the volume of international trade increases and country's production would benefit from the economies of scale. Thus, investigating the effect of trade liberalization on economic growth is of great significance to researchers and policy makers.

Since 1987, the Chinese government has worked gradually to change its trade policies and open up its economy to the global market. Several measures have been implemented to liberalize the traderegime in the country. For example, the government has simplified many trade related procedures, lower most tariffs and nontariff barriers, eliminated export taxes, and reduced export and import quotas. China has signed

several bilateral and free trade agreements since it acceded to the World Trade Organization (WTO) in 2001. Besides, China's participation in international trade and the opening up of its economy to the global market have contributed to remarkable economic transformations and impressive economic growth. The country's industries were able to attract new investments and technology, eventually, some of these industries have become highly specialized in electrical and electronic productions. The productivity has improved and this leads to greater foreign trade and inflows of foreign currencies (Sun and Heshmati, 2010).

Given this backdrop, this study aims to investigate the effects of trade liberalization on economic growth in China over the period 1980-2018. The organization of this study is as follows. The next section is the literature review, and Section 3 provides a brief discussion on the methodology. Section 4 reports the empirical results, and the conclusion and recommendations are presented in Section 5.

2. Previous Studies

Trade liberalization plays a vital role in supporting economic growth, and this has resulted in a large number of studies that have investigated the effects of trade openness as an indicator of trade liberalization on economic growth. Based on the *World Development Report 1987*, countries that followed outward-oriented trade strategies have outperformed in terms of their export growth, income growth, savings and employment, compared to other countries that had adopted inward-oriented trade strategies (World Bank, 1987). Edwards (1992, 1998) also assumes that there is a negative relationship between trade distortion and economic growth, and more open economies will grow much faster than economies with trade distortions. Besides, trade liberalization has a positive effect on economic growth according to Heitger (1987), Dollar (1992), Matin (1992), Harrison (1996), Onafowora and Owoye (1998), Greenaway *et al.* (2001), Utkulu and Ozdemir (2004), Buehler *et al.* (2011), Oladipo (2011), Rahimi and Shahabadi (2011), Manni and Ibne Afzal (2012), Yavari and Mohseni (2012), Umer (2014), Hozouri (2016), Keho and Wang (2017), Khobai and Chitauro (2018), Gnanon (2018), Khobai *et al.* (2018), and Qayyum *et al.* (2018).

However, some studies found that trade liberalization alone might not be the main factor that drives economic growth. Rodriguez and Rodrik (2000) found little evidence to prove that open trade policies (such as lower tariff and non-tariff barriers) are significantly associated with economic growth. Greenaway (1998) also pointed out that a liberalized trade regime may be necessary, but insufficient for rapid growth, and that trade liberalization in itself cannot move an economy to a new growth trajectory. However, trade liberalization can help in achieving

economic growth, but at the same time, it needs to be compatible with other policy reforms and needs to be sustainable. Levine and Renelt (1992) also did not find any positive relationship between trade openness and economic growth, but they obtained a positive correlation between growth and the share of investment in GDP. On the other hand, Yanikkaya (2003) concluded that trade liberalization does not have a simple and straightforward relationship with growth, but trade barriers are positively and significantly associated with growth, and the restrictions on trade can promote growth, especially for developing countries.

Since then, many studies have focused on other factors such as oil price, investment, consumption, and inflation on economic growth in different countries. In (2008) found that a rise in oil prices have a positive effect on the economic growth of Russia (a net oil-exporting country), and a negative impact on the economic growth of Japan and China. Darby (1982), Hamilton (1983), Burbidge and Harrison (1984), Gisser and Goodwin (1986), Jimenez-Rodrigueza and Sanchez (2005), Lin and Mou (2008), Hsieh (2008), Zhang and Xu (2010), Lee *et al.* (2001), Le and Chang (2013), and Morana (2013) also concluded that oil price increases have a negative effect on the economic growth of oil-importing countries. However, Du *et al.* (2010) and Chen *et al.* (2015) concluded that the output in China is positively correlated with oil price shocks. Other studies found that oil price has a positive effect on the economic growth of oil-exporting countries such as Russia (Ito, 2008), a group of 15 oil-exporting countries (El-Anshasy, 2009), Nigeria (Aliyu, 2009), selected Sub-Saharan countries (Yong *et al.*, 2011), Iran (Emami and Adibpour, 2012), Nigeria (Oyeyemi, 2013), Kenya (Wanjala, 2018), and Nigeria (Victor and Ogbonna, 2018)

Other researchers tested the effect of investments on economic growth. Some of these studies such as Kormendi and Meguire (1985), Levine and Renelt (1992), Mankiw *et al.* (1992), Islam (1995), Caselli *et al.* (1996), Qin *et al.* (2006), Loncan (2007), Tang *et al.* (2008), Merican (2009), Adams (2009), Bond *et al.* (2010), Adhikary (2011) and Soliu and Ibrahim (2014) found that investment has a positive effect on economic growth. However, Elboiashi *et al.* (2009), and Hooi and Wah (2010) concluded that an increase in investment did not contribute to GDP growth. Moreover, a number of studies revealed that consumption has a positive effect on economic growth, including Abdul Karim *et al.* (2010), Ramli and Andriani (2013), Ridzuan *et al.* (2014), Abdul Karim *et al.* (2012) and Aslam (2017). Other studies examined the impact of inflation on economic growth. According to Mundell (1963), Tobin (1965), Mallik and Chowdhury (2001), Fabayo and Ajilore (2006), Wang (2008), Umaru and Zubairu (2012), Wajid and Kalim (2013), and Anidiobu *et al.* (2018), inflation has a positive effect on economic growth. However, De Gregario (1992), Fisher (1993), Barro (1995), Sarel (1996), Khan and Senhadji (2001), Quartey (2010), Kasidi and Kenani (2012), Kasidi and Mwakanemela (2013),

Bakare *et al.* (2015), Chughtai *et al.* (2015), Semuel and Nurina (2015), and Hussain *et al.* (2016) found that economic growth is affected negatively by inflation.

3. Methodology

The vector autoregression (VAR) model will be used in this study. Our model consists of six variables, namely, the gross domestic product (GDP), trade openness (OPEN), oil price (OILP), gross fixed capital formation (GFCF), final consumption expenditure (FCE) and inflation (INF) of China. GDP is the dependent variable. The model is presented as follows:

$$\ln\text{GDP} = \beta_0 + \beta_1\text{OPEN} + \beta_2\ln\text{OILP} + \beta_3\ln\text{GFCF} + \beta_4\ln\text{FCE} + \beta_5\text{INF} + \varepsilon_t \quad (1)$$

where β_0 is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4,$ and β_5 are the slope coefficients, $\ln\text{GDP}$ is the natural log of real GDP, OPEN is the trade openness as an indicator of the degree of trade liberalization and it is defined as the percentage of total exports and imports to GDP, $\ln\text{OILP}$ is the natural log of oil price per barrel, $\ln\text{GFCF}$ is the natural log of real gross fixed capital formation, $\ln\text{FCE}$ is the natural log of final consumption expenditure, INF is the inflation rate proxy by the annual percentage change of the GDP deflator, and ε_t is the error term. All variables are in US dollars except for OPEN and INF, which are in percentage.

This study uses annual time series data of China during the period from 1980 to 2018. These data were collected from the World Bank. Since this study uses time series data, it is necessary to begin the analysis with the unit root tests. Augmented Dickey-Fuller (ADF) unit root tests will be conducted on each variable in the model to find out whether the time series data are stationary at the level or first difference. After testing for stationarity and confirming the order of integration of each time series, and if the variables in the model are found to be integrated of the same order, the Johansen cointegration test will be applied to establish whether there is any long run or equilibrium relationship between the variables in the model. If the variables are found to be cointegrated, then the Granger causality tests will be conducted based on the VECM to determine the long and short run causality relationships among the variables in the model. However, if the Johansen test results indicate no cointegration among the variables in a particular model, then the Granger causality tests will be based on the VAR model. Lastly, Impulse Response Functions (IRFs) and Variance Decomposition (VD) analysis will be computed for the model to evaluate if the independent variables have any significant role in explaining the variation of the dependent variable at the short and long run forecasting horizons.

4. Empirical Results and Discussion

The results from unit root test in Table 1 shows that all six variables are not stationary at the level, but become stationary after first difference at either the five

or one per cent level of significance. This means that all the variables are integrated of order one, that is, $I(1)$.

Table 1
ADF unit root test results

<i>ADF</i>	<i>Level</i>			<i>First difference</i>		
	<i>Intercept</i>	<i>Trend and intercept</i>	<i>No trend & no intercept</i>	<i>Intercept</i>	<i>Trend and intercept</i>	<i>No trend & no intercept</i>
lnGDP	0.295078	-2.205583	3.190301	-3.707624***	-3.709875**	-1.725502*
OPEN	-1.813882	-1.436192	-0.001634	-4.396229***	-4.564794***	-4.388021***
lnOILP	-1.201537	-2.324732	0.057850	-5.915290***	-5.926425***	-5.987538***
lnGFCF	-0.484304	-1.968949	2.672892	-3.433064**	-3.267719*	-1.904124*
lnFCE	0.100083	-2.373045	2.860272	-3.715425***	-3.668315**	-2.168974**
INF	-2.731379	-3.475449	-1.823378	-6.061134***	-6.052141***	-6.152241***

Note: *** Denotes significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level.

4.1. Johansen Cointegration Test Results

Since all the variables are stationary in the first difference, we can determine the presence of any cointegration or longrun relationship among the variables based on the Johansen cointegration test. However, before running the cointegration test, we run the VAR model first to determine the optimal lag length. Using the minimum Akaike Information Criterion (AIC) an optimal lag length of three is selected for the model.

We then proceed with the cointegration test. Table 2 shows that there are six cointegration equations based on the trace test and the maximum eigenvalue test.

Table 2
Johansen cointegration test results

<i>No. of CE(s)</i>	<i>Trace Statistic</i>	<i>Prob</i>	<i>Max-Eigen Statistic</i>	<i>Prob</i>
$r = 0$	309.1135***	0.0000	0.96950***	0.0000
$r \leq 1$	186.9620***	0.0000	0.81093***	0.0000
$r \leq 2$	128.6649***	0.0000	0.79781***	0.0000
$r \leq 3$	72.7162***	0.0000	0.61294***	0.0010
$r \leq 4$	39.4948***	0.0000	0.46220***	0.0054
$r \leq 5$	17.7852***	0.0010	0.39839***	0.0010

Note: *** Denotes significance at the 1 percent level, and ** at the 5 percent level

In other words, the results indicate more than one long run relationship exists among the variables in the system comprising lnGDP, OPEN, lnOILP, lnGFCF, lnFCI, and INF.

After having found a cointegration relationship between the variables, the cointegrating equation was normalized using the real GDP variable. Table 3 shows the normalized cointegrating vector.

Table 3
Cointegration equation normalized with respect to GDP

<i>lnGDP</i>	<i>OPEN</i>	<i>lnOILP</i>	<i>lnGFCF</i>	<i>lnFCE</i>	<i>INF</i>	<i>C</i>
1.000000	-0.459564	0.096335	-0.771672	-1.959499	-0.008973	4.991477
	(0.07127)	(0.00764)	(0.05705)	(0.06517)	(0.00065)	(0.29666)

From Table 3, the longrun equation can be written as:

$$\ln\text{GDP} = -4.991 + 0.459\text{OPEN} - 0.096\ln\text{OILP} + 0.771\ln\text{GFCF} + 1.959\ln\text{FCE} + 0.008\text{INF} \quad (2)$$

The cointegration equation given by equation (2) above shows that lnGDP is positively related to OPEN, lnGFCF, lnFCE and INF, but negatively related to lnOILP.

The coefficient of OPEN indicates that for every one percent increase in trade openness, GDP will increase by 0.459 percent. This suggests that trade openness plays a vital role in boosting the economic growth in China. By simplifying the customs procedures, imports and exports of the country are certain to increase. Exports will motivate producers to produce more, and imports of investment goods will stimulate the production process in the country. Besides, trade openness increases competition among domestic firms, which encourages producers to improve the quality of their products by employing new and modern production technologies. This will lead to higher economic growth in the country. Our finding agrees with the results of Heitger (1987), Dollar (1992), Onafowora and Owoye (1998), Greenaway *et al.* (2001), Utkulu and Ozdemir (2004), Effiom and Samuel (2012), Hozouri (2016), Gnanon (2018), and Khobai *et al.* (2018).

The coefficient of lnOILP denotes that when the oil price increases by one percent, GDP will decrease by 0.096 percent. This outcome is as expected since the high oil price increases the cost of production activities in the country. The rise in the production cost will drive producers to reduce their production. Hence, the high oil price will cut the output and slow down the economic growth in the country. This finding agrees with the results obtained by Hamilton (1983), Burbidge

and Harrison (1984), Jimenez-Rodrigueza and Sanchez (2005), Hsieh (2008), Le and Chang (2013), and Morana (2013). Furthermore, the coefficient of $\ln GFCF$ shows that when the gross fixed capital formation increases by one percent, GDP will increase by 0.771 percent. With the rise in the capital, investment and production activities in the country will increase too, which creates new job opportunities, increases the output of different goods and services, and enhances exports and imports in the country. This will support the national economy and improve economic growth. This result is similar to the results that were obtained by Kormendi and Meguire (1985), Levine and Mankiw *et al.* (1992), Caselli *et al.* (1996), Loncan (2007), Adams (2009), Bond *et al.* (2010) and Soliu and Ibrahim (2014).

On the demand side, the coefficient of $\ln FCE$ shows that when the final consumption increases by one percent, GDP will increase by 1.959 percent, which reflects the critical role that the final consumption plays in supporting the economic growth in China. The rise in final consumption means an increase in the local demand for different goods and services in the country, which motivates producers to increase their production, and that will encourage economic growth in the country. This result agrees with Abdul Karim *et al.* (2010), Ramli and Andriani (2013), Ridzuan *et al.* (2014), Abdul Karim *et al.* (2012) and Aslam (2017). Besides, the coefficient of $\ln F$ shows that when inflation increases by one percent, GDP will grow by 0.008 percent. This explains why when prices rise, firms tend to produce more to increase their profits. Thus, inflation can be a reason that motivates producers to increase their production, which boosts the country's economic growth. Our finding is in line with the results of Mundell (1963), Tobin (1965), Mallik and Chowdhury (2001), Fabayo and Ajilore (2006), Wang (2008), Umaru and Zubairu (2012) and Wajid and Kalim (2013).

4.2. Granger Causality Tests Results

Since the variables in the model are cointegrated, the Granger causality test based on the VECM is used to determine the short and long run causal relationships among the variables in the model. The F-test results show the significance of the short-run causal effects, while the significance of the coefficient of the lagged error correction term [$\text{ect}(-1)$] shows the longrun causal effect.

It is clear from Table 4 that there is a bidirectional causal relationship between OPEN and $\ln GDP$ in the short and long run. Trade openness makes export and import processes much easier, which stimulates investment and boost economic growth in the country. The government should continuously find ways to simplify the export and import processes to motivate the producers to increase their production in the country. There is also a bidirectional short and long run causality relationship between $\ln OILP$ and $\ln GDP$, suggesting feedback effects between oil

prices and economic growth in both the short run and long run. Moreover, there is bidirectional causality between $\ln\text{GFCF}$ and $\ln\text{GDP}$ in the short and long run. The result suggests that investment Granger causes economic growth in China through improved and increased production, and economic growth in turn creates an attractive investment climate, which motivates investors to increase their investments in the country. There is also a bidirectional short and long run causality relationship between $\ln\text{FCE}$ and $\ln\text{GDP}$. This result shows that the final consumption expenditure causes economic growth in China by stimulating production in the country to meet the rise in the local demand for different goods and services. There is also a bidirectional short and long run causality relationship between INF and $\ln\text{GDP}$. Inflation causes economic growth by raising the rate of profit, thus motivating the producers to increase their production in the country. On the other hand, the rise in the total demand after improving the standard of living in the country due to higher economic growth causes an increase in inflation.

Table 4
Granger causality test results

<i>Dependent variables</i>	<i>Independent variables</i>						
	$\Sigma\Delta \ln\text{GDP}$	$\Sigma\Delta \text{OPEN}$	$\Sigma\Delta \ln\text{OILP}$	$\Sigma\Delta \ln\text{GFCF}$	$\Sigma\Delta \ln\text{FCE}$	$\Sigma\Delta \text{INF}$	<i>ect(-1)</i>
$\Delta \ln\text{GDP}$	-	7.12 (3)**	5.31 (2)**	11.24 (4)**	4.21 (3)**	11.86 (2)*	-2.31**
ΔOPEN	4.34 (3)**	-	3.19 (2)**	2.14 (2)*	2.06 (2)	3.66 (2)*	-2.37**
$\Delta \ln\text{OILP}$	6.20 (4)**	4.38 (3)**	-	4.32 (3)*	2.58 (2)	2.34 (2)	-3.14**
$\Delta \ln\text{GFCF}$	11.29 (5)**	7.16 (3)**	4.07 (3)**	-	6.12 (3)**	11.98 (3)**	-2.62*
$\Delta \ln\text{FCE}$	4.25 (3)*	6.20 (3)**	4.13 (3)**	5.46 (3)**	-	3.92 (2)**	-2.17**
ΔINF	3.61 (3)**	6.81 (4)**	1.23 (2)	2.21 (2)	1.68 (3)*	-	-3.17*

Notes: $\text{ect}(-1)$ represents the error correction term lagged one period. The numbers in the brackets show the optimal lag based on the AIC. Δ represents the first difference. Only F-statistics for the explanatory lagged variables in first differences are reported here. For the $\text{ect}(-1)$ the t-statistic is reported instead. ** denotes significance at the 5 percent level and * indicates significance at the 10 percent level.

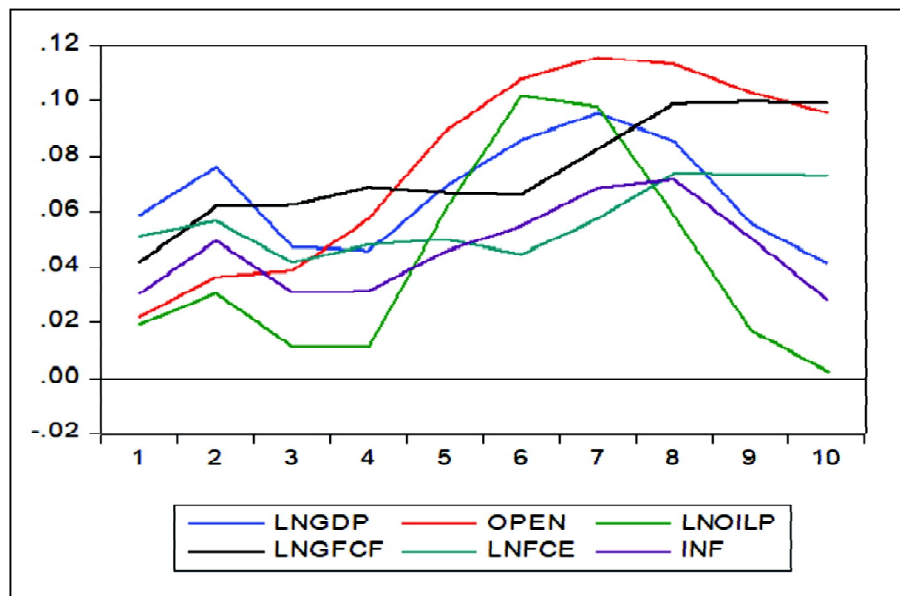
4.3. Impulse Response Functions (IRFs) Results

Impulse response function (IRF) is used to study the dynamic effects of a particular variable's shock on the other variables that are included in the same model over a ten-year forecast horizon. Through the IRF we are able to determine if the response of one variable to changes in other variables is positive or negative and whether it is significant or not. If the point estimate of the IRF is above the zero line the response is positive, but if it is below the zero line, then the response is negative.

Besides, if the point estimate of the IRF passes through the zero line, the response is insignificant. There are many options for transforming the impulses. We will use the generalized impulse response functions.

Figure 1 shows that there is a positive long-term effect of OPEN, lnOILP, lnGFCF, lnFCE and INF shock on GDP growth, which shows the important role of trade liberalization in supporting the economic growth in China through simplifying export and import process. Gross fixed capital formation and final consumption also play a vital role in boosting the country's economic growth by motivating the producers to increase and improve their production. Besides, inflation supports economic growth by encouraging producers to increase their production in order to generate higher profit. Thus, the government should attempt to open up its economy to foreign trade, improve the standard of living and intensify investments in the country.

Figure 1: Generalized impulse response functions (GIRF) results



4.4. Variance Decomposition (VD) Analysis

The forecast error variance decompositions (VD) for the 1 to 10-year forecast horizons are examined to explain how much of the forecast error variance of lnGDP can be explained by its own shocks and shocks to the other variables in the model at the various forecast horizons. Table 5 shows the percentages of the forecast error variances accounted for by each shock. At shorter forecasting

horizons, GDP shocks explains a very high percentage of its forecast error variance. In contrast, at the 10th year forecast horizon, 36.6 percent of the forecast error variance of lnGDP is explained by innovations in OPEN and 14.8 percent by innovations in lnOILP. However, innovations in lnFCE, lnGFCF and INF account for only 6, 1.8 and 1.6 percent of the forecast error variance of lnGDP respectively, while innovations in lnGDP itself explained 38.9 percent of its forecast error variance. Furthermore, we can see that the relative contribution of OPEN shocks on lnGDP increased as the forecasting horizon expands.

Table 5
Variance decomposition (VD) analysis

<i>Period</i>	<i>S.E.</i>	<i>lnGDP</i>	<i>OPEN</i>	<i>lnOILP</i>	<i>lnGFCF</i>	<i>lnFCE</i>	<i>INF</i>
1	0.058901	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.100792	91.11271	0.756896	0.007032	2.399316	4.808981	0.915062
3	0.119901	80.14886	4.088550	3.996418	6.928512	4.129437	0.708223
4	0.142447	67.27526	12.26191	10.86101	5.830347	3.023286	0.748191
5	0.173985	60.79756	23.59954	7.317099	3.994310	2.379196	1.912304
6	0.218501	54.04871	28.99025	7.155660	3.092962	3.929319	2.783106
7	0.257748	52.64629	32.06976	5.826068	2.833096	4.228123	2.396658
8	0.287149	51.29913	35.19649	5.691725	2.467963	3.406927	1.937768
9	0.316507	45.38017	36.83670	9.898394	2.097123	4.170847	1.616765
10	0.348032	38.95604	36.67324	14.86012	1.828453	6.030737	1.651411

5. Conclusion

This study investigates the role of trade liberalization in the economic growth in China using annual time series data from 1980 to 2018. The model consists of six variables, with the GDP as the dependent variable and trade openness, oil price, gross fixed capital formation, final consumption expenditure, and inflation as the independent variables. The Johansen cointegration test, Granger causality test, impulse response functions, and variance decomposition analysis were used in this study.

The unit roots test results indicate all variables are I(1). The cointegration test showed that trade openness, gross fixed capital formation, final consumption, and inflation have a positive effect on the GDP, but oil price affects it negatively. Furthermore, from the causality tests, we found that there are bidirectional causality relationships between trade openness, oil price, gross fixed capital formation, final consumption expenditure, inflation, and GDP in the short and long run. The

impulse response functions indicated that when there is a shock to trade openness, oil price, gross fixed capital formation, final consumption expenditure, and inflation, GDP will respond positively in the following years. The variance decomposition analysis showed that at a ten-year forecasting horizon, 37 percent of the forecast error variance of GDP is explained by trade openness, while 15, 6, 1.8 and 1.6 percent of the GDP forecast error variance are explained by oil price, final consumption expenditure, gross fixed capital formation, and inflation variations, respectively.

Based on the findings of this study, it is vital for the Chinese government to liberalize its economy to foreign trade by continuously finding ways to reduce its trade barriers and customs procedures, improving the quality and competitiveness of the China's products in the local and global markets, and using modern management and technology in the production activities. It is also important that the government strive to create an attractive investment climate and improve the living standard of its citizens. This will eventually lead to an increase in domestic consumption and higher production, which makes China's economic growth sustainable.

References

- Abdul Karim, Z., Abdul Karim, B., & Ahmad, R. (2010). Fixed investment, household consumption, and economic growth: a structural vector error correction model (SVECM) study of Malaysia. *MPR Paper No. 27146*.
- Abdul Karim, Z., Abdul Karim, B. & Zaidi, M. (2012). Fixed investment, household consumption, and economic growth: a structural vector error correction model (SVECM) study of Malaysia. *International Journal of Business and Society*, 13 (1), pp. 63- 76
- Adams, S. (2009). Foreign direct investment, domestic investment and economic growth in Sub-Saharan Africa. *Journal Policy Modeling*, 31 (6), pp. 939-949.
- Adhikary, B.K. (2011) FDI, trade openness, capital formation, and economic growth in Bangladesh: a linkage analysis. *International Journal of Business and Management*, 6 (1), pp. 16-28.
- Aliyu, S. U. (2009). Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation. *Research Journal of International Studies* (11), pp. 4-15.
- Anidiobu, A., Okolie, P., & Oleka, C. (2018). Analysis of Inflation and Its Effect on Economic Growth in Nigeria. *IOSR Journal of Economics and Finance*, 9 (1), pp 28-36.
- Aslam, A. L. (2017). Does consumption expenditure induce the economic growth? An empirical evidence from Sri Lanka. *World Scientific News*, 81 (2), pp. 221-234
- Bakare, H., Kareem, R. & Oyelekan, B. (2015). Effects of inflation rate on economic growth in Nigeria. *Developing Country Studies*, 5 (8), pp 153 – 160.
- Barro, R. (1995). Inflation and Economic Growth. *NBER Working Paper*, 5326.

- Bond, S., Leblebicioglu, A. & Schiantarelli, A. (2010) Capital accumulation and growth; A new look at the empirical evidence. *Journal of Applied Econometrics*, 25(7), pp. 1073–1099.
- Buehler, S., Helm, M., & Lechner, M. (2011). *Trade Liberalization and Growth: Plant-Level Evidence from Switzerland*. University of St. Gallen: School of Economics and Political Science.
- Burbidge, J., & Harrison, A. (1984). Testing for the Effects of Oil-Price Rises Using Vector Autoregressions. *International Economic Review*, 25, pp. 459-484.
- Caselli, F., Esquivel, G., & Lefort, F. (1996). Reopening the convergence debate: a new look at cross-country growth empirics. *Journal of Economic Growth*, 1(3), pp. 363-389.
- Chen, D., Chen, S., & Härdle, W. (2015). The influence of oil price shocks on china's macro-economy: A perspective of international trade. *Journal of Governance and Regulation*, 4 (1), pp. 178-189.
- Chughtai, M, W., Malik, M, W. & Aftab, R. (2015). Impact of major economic variables on economic growth of Pakistan. *Dea Universitatis Danubius*, 11 (2), pp 94 – 106.
- Darby, M. R. (1982). The Price of Oil and World Inflation and Recession. *American Economic Review*, 72, pp. 738-751.
- De Gregorio, J. (1992). Effects of Inflation on Economic Growth: Lessons from Latin America. *European Economic Review*, 36 (April), pp. 417–25.
- Dollar, D. (1992). Outward Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985. *Economic Development and Cultural Change*, 40, pp. 523-544.
- Du, L. M., He, Y. N., & Wei, C. (2010). The Relationship between Oil Price Shocks and China's Macro-economy: An Empirical Analysis. *Energy policy*, 38 (8), pp. 4142-4151.
- Edwards, S. (1992). Trade Orientation, Distortions and Growth in Developing Countries. *Journal of Development Economics*, 39 (1), pp. 31-57.
- Edwards, S. (1998). Openness, Productivity and Growth: What Do We Really Know? *The Economic Journal*, 108, pp. 383-398.
- Effiom, L., & Samuel, U. P. (2012). Trade Openness and Domestic Savings Nexus in Developing Countries: Empirical Evidence from Nigeria. *European Journal of Scientific Research*, 86 (3), pp. 428-442.
- El-Anshasy, A. A. (2009). *Oil Prices and Economic Growth in Oil Exporting Countries*. UAE: Collage of Business and Economics, United Arab Emirates University.
- Elboiashi, H., Noorbakhsh, F., Paloni, A. & Azemar, C. (2009). The causal relationships between foreign direct investment (FDI), domestic investment (DI) and economic growth (GDP) in North African non-oil producing countries: empirical evidence from cointegration analysis. *Advances in Management*, 2(11), pp. 19-25.
- Emami, K., & Adibpour, M. (2012). Oil Income Shocks and Economic Growth in Iran. *Economic Modelling* (29), pp. 1774-1779.
- Fabayo, J. A., & Ajilore, O. T. (2006). Inflation: How Much is too much for Economic growth in Nigeria. *Indian Economic Review*. pp: 129-147.
- Fisher, S. (1993). The Role of Macroeconomic Factors in Growth. *Journal of Monetary Economics*, 32 (December), pp. 485-512.

- Gisser, M., & Goodwin, T. H. (1986). Crude Oil and the Macroeconomy: Tests of Some Popular Notions. *Journal of Money, Credit and Banking*, 18, pp. 95-103.
- Gnangnon, S. K. (2018). Multilateral Trade Liberalization and Economic Growth. *Journal of Economic Integration*, 33 (2), pp 1263-1303.
- Greenaway, D. (1998). Does Trade Liberalisation Promote Economic Development? *Scottish Journal of Political Economy*, 45 (5), pp. 491-511.
- Greenaway, D., Morgan, W., & Wright, P. (2001). Trade Liberalisation and Growth in Developing Countries. *Journal of Development Economics*, 67 (1), pp. 229-244.
- Hamilton, J. D. (1983). Oil and the Macroeconomy Since World War II. *Journal of Political Economy*, 91, pp. 593-617.
- Harrison, A. (1996). Openness and Growth: A Time-Series, Cross-Country Analysis for Developing Countries. *Journal of Development Economics*, 48 (2), pp. 419- 447.
- Heitger, B. (1987). Import Protection and Export Performance: Their Impact on Economic Growth. *Weltwirtschaftliches Archiv*, 123 (2), pp. 249-261.
- Hooi, L.H. & Wah, T.B. (2010) Linkages between foreign direct investment, domestic investment and economic growth in Malaysia. *Journal of Economic Cooperation and Development*, 32(4), pp. 75-96.
- Hozouri, N. (2016). The Effect of Trade Liberalization on Economic Growth: Selected MENA Countries. *International Journal of Economics and Finance*, 9 (1), pp 88-95.
- Hsieh, W. J. (2008). Effects of Oil Price Shocks and Macroeconomic Conditions on Output Fluctuations for Korea. *Journal of International and Global Economic Studies*, 1 (2), pp. 84-91.
- Hussain, A., Sabir, H. M., & Kashif, M. M. (2016). Impact of macroeconomic variables on GDP: Evidence from Pakistan. *European Journal of Business and Innovation Research*, 4 (3), pp 38 – 52
- Islam, N. (1995) Growth empirics: A panel data approach. *Quarterly Journal of Economics*, 110(4), pp. 1127–1170.
- Ito, K. (2008). Oil Price and the Russian Economy: A VEC Model Approach. *International Research Journal of Finance and Economics*, (17), pp. 68-74.
- Jimenez-Rodríguez, R., & Sanchez, M. (2005). Oil Price Shocks and Real GDP Growth: Empirical Evidence for Some OECD Countries. *Applied Economics*, 37 (2), pp. 201-228.
- Jin, G. (2008). The Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth: A Comparative Analysis for Russia Japan and China. *Research Journal of International Studies* (8), pp. 98-111.
- Kasidi, F. & Kenani, M. (2012). Impact of Inflation on Economic Growth: A case study of Tanzania. *Asian Journal of Empirical Research*. 3 (4), pp. 363-380.
- Kasidi, F. & Mwanemela, K. (2013). Impact of inflation on economic growth: A case of Tanzania. *Asian Journal of Empirical Research*, 3 (4), pp 363 – 380.
- Keho, Y. & Wang, M. (2017). The impact of trade openness on economic growth: The case of Cote d'Ivoire. *Cogent Economics & Finance*, 5 (1), pp 1-14.
- Khan, M. S., & Senhadji, S. A. (2001). Threshold Effects in the Relationship between Inflation and Growth. *IMF Staff Papers*. 48 (1), pp. 1-21.

- Khobai, H. & Chitauru, M. (2018). The Impact of Trade Liberalization on Economic Growth in Switzerland. *MPRA Paper No. 89884*.
- Khobai, H., Kolisi, N., & Moyo, C. (2018). The Relationship Between Trade Openness and Economic Growth: The Case of Ghana and Nigeria. *International Journal of Economics and Financial*, 8 (1), pp 77-82.
- Kormendi, R., & Meguire, P. (1985). Macroeconomic determinants of growth: Crosscountry evidence. *Journal of Monetary Economics*, 16 (2), pp. 141-163.
- Le, T. H., & Chang, Y. H. (2013). Oil Price Shocks and Trade Imbalances. *Energy Economics*, 36 (3), pp. 78-96.
- Lee, B. R., Lee, K., & Ratti, R. A. (2001). Monetary Policy, Oil Price Shocks, and the Japanese Economy. *Japan and the World Economy*, 13 (3), pp. 321-349
- Levine, R., & Renelt, D. (1992). A Sensitivity Analysis of Cross-Country Growth Regressions. *American Economic Review*, 82 (4), pp. 942- 63.
- Lin, B. Q., & Mou, D. G. (2008). The Impact of Energy Price Increases on Macro-economy: An Analyses Based on CGE Method. *Economic Research Journal*, 11 (8), pp. 88-101.
- Loncan, A.H. (2007). Infrastructure investment and Spanish economic growth, 1850-1935. *Explorations in Economic History*, 44, pp. 452-468.
- Mallik, G., & Chowdhury, A. (2001). Inflation and Economic Growth: Evidence from South Asian Countries. *Asian Pacific Development Journal*. 8 (1), pp. 123-135.
- Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A Contribution to the Empirics of Economic Growth. *The Quarterly Journal of Economics*, 107 (2), pp. 407-437.
- Manni, U. H., & Ibne-Afzal, M. N. (2012). Effect of Trade Liberalization on Economic Growth of Developing Countries: A Case of Bangladesh Economy. *Journal of Business, Economics & Finance*, 1 (2), pp. 37-44.
- Matin, K. (1992). *Openness and Economic Performance in Sub-Saharan Africa: Evidence from Time-Series Cross-Country Analysis*. World Bank: Working Paper No. 1025.
- Merican, Y. (2009). Foreign direct investment and growth in ASEAN-4 nations. *International Journal of Business and Management*, 4 (5), pp. 46-61.
- Morana, C. (2013). The Oil Price-Macro-economy Relationship since the Mid-1980s: A Global Perspective. *The Energy Journal*, 34 (3), pp. 153-189.
- Mundell, R. (1963). Inflation and Real Interest. *The Journal of Political Economy*. 71 (3), pp. 280-283.
- Oladipo, O. S. (2011). Does Trade Liberalization Cause Long Run Economic Growth in Mexico? An Empirical Investigation. *International Journal of Economics and Finance*, 3 (3), pp. 63-74.
- Onafowora, O. A., & Owoye, O. (1998). Can Trade Liberalization Stimulate Economic Growth in Africa? *World Development*, 26 (3), pp. 497-506.
- Oyeyemi, A. M. (2013). The Growth Implications of Oil Price Shock in Nigeria. *Journal of Emerging Trends in Economics and Management Sciences*, 4 (3).
- Qayyum, M., Younas, N., & Bashir, M. (2018). The Impact of Trade Liberalization on Economic Growth: A case study of Pakistan. *Journal of Economics and Sustainable Development*, 9 (9), pp 65-71.

- Qin, D., Cagas, M.A., Quising, P., & He, X. (2006). How much does investment drive economic growth in China?. *Journal of Policy Modeling*, 28, pp. 751–774.
- Quartey, P. (2010). Price Stability and the Growth Maximizing rate of inflation for Ghana. *Business and Economic Journal*, 1 (1), pp. 180-194.
- Rahimi, M., & Shahabadi, A. (2011). Trade Liberalization and Economic Growth in Iranian Economy. Available at SSRN: <http://ssrn.com/abstract=1976299> or <http://dx.doi.org/10.2139/ssrn.1976299>.
- Ramli, A., & Andriani, A. A. (2013). The Effects of Consumption, Private Investment, and Government Expenditures on Economic Growth in South Sulawesi, Indonesia. *Journal of Economics and Sustainable Development*, 4 (14), pp. 145-153
- Ridzuan, A. R., Razak, M. I. & Ibrahim, Z. (2014). Household Consumption, Domestic Investment, Government Expenditure and Economic Growth: New Evidence from Malaysia. *Journal of Scientific Research & Reports*, 3 (17), pp. 2373-2381
- Rodriguez, F., & Rodrik, D. (2000). Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence. in B. S. Bernanke, & K. Rogoff, *NBER Macroeconomics Annual 2000*. Cambridge, MA: NBER. (pp. 261-338)
- Sarel, M. (1996). Nonlinear Effects of Inflation on Economic Growth. *IMF Staff Paper*, 43 (1), pp. 199-216.
- Semuel, H. & Nurina, S. (2015). Analysis of the effect of inflation, interest rates and exchange rates on gross domestic product (GDP) in Indonesia., *Proc. International Conf. on Global Business, Economics, Finance and Social Sciences, Bangkok, Thailand*, pp 1- 13.
- Soliu, A. & Ibrahim, O. (2014) Empirical analysis of trade openness, capital formation, FDI, and economic growth: Nigeria experience. *The International Journal of Social Sciences and Humanities Invention*, 1 (1), pp. 36-50.
- Sun, P., & Heshmati, A. (2010). International Trade and its Effects on Economic Growth in China. *IZA Discussion Paper No. 5151*.
- Tang, S., Selvanathan, E.A. & Selvanathan, S. (2008) Foreign direct investment, domestic investment, and economic growth in China. *World Economy*, 31 (10), pp.1292-1309.
- Tobin, J. (1965). Money and Economic Growth. *Econometrica*, 33 (4), pp. 671-684.
- Umaru, A., & Zubairu, A. (2012). Effect of Inflation on the Growth and Development of the Nigerian Economy: An Empirical Analysis. *International Journal of Business and Social Science*, 3 (10).
- Umer, F. (2014). Impact of Trade Openness on Economic Growth of Pakistan: An ARDL Approach. *Journal of Business & Economic Policy*, 1 (1), pp 39-59.
- Utuklu, U., & Ozdemir, D. (2004). Does Trade Liberalization Cause a Long Run Economic Growth in Turkey. *Economic Change and Restructuring*, 37 (3), pp. 245-266.
- Victor, O, I., & Ogbonna, M, K. (2018). Crude Oil Price Fluctuations and Nigeria Economic Growth: 1997-2015. *International Journal of Research in Business, Economics and Management*, 2 (2), pp 44-61.
- Wajid, A., & Kalim, R. (2013). *The impact of inflation and economic growth on unemployment*. In Proceedings of 3rd International Conference on Business Management.

- Wang, Z. (2008). Chinese Economic Growth and Inflation. *Chinese society science Institute Press*.
- Wanjala, K. (2018). Effect of Crude Oil Prices on GDP Growth and Selected Macroeconomic Variables in Kenya. *Journal of Economics and Business*, 1 (3), pp 282-298.
- World Bank. (1987). *World Development Report 1987*. Washington: World Bank.
- Yanikkaya, H. (2003). Trade Openness and Economic Growth: A Cross-Country Empirical Investigation. *Journal of Development Economics*, 72, pp. 57- 89.
- Yavari, K., & Mohseni, R. (2012). Trade Liberalization and Economic Growth: A Case Study of Iran. *Journal of Economic Policy Reform*, 15 (1), pp. 13-23.
- Yong, L. C., Fung, N. C., & Pui, P. Y. (2011). *Oil Price and Economic Growth: Evidence from 10 Sub-Saharan Africa Countries*. The Final Year Project of Bachelor Degree, Universiti Tunku Abdul Rahman (UTAR).
- Zhang, B., & Xu, J. W. (2010). Oil Price Shocks and China's Macro-economy: Mechanism, Effects and Policy. *Management World*, 11 (4), pp. 18-27.