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# Impact of Stock Market and Financial Development on Sustainable Development in Kuwait

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**ABSTRACT**

This study aims to investigate the impact of the stock market trade openness and financial development on sustainable development in Kuwait. The study employed quarterly time series for analysis and from 1993-2018, and selected variables are Sustainable development, Stock market, financial development, and trade openness. Sustainable development is treated as a dependent variable, while the others are independent variables. It is concluded that a long run association among the stock market, financial development, trade and sustainable development exists. Autoregressive distributed lagged (ARDL) model is applied for long run and short run estimates. In long run stock market, trade openness and financial development are positive and significant factors of sustainable development, while in the short run, stock market is significant negative contributor to sustainable development. It is therefore recommended that efforts should be made to encourage the investor so that the stock market should grow in future. Similarly, efforts should be made to boost the financial and trade sector should that the country could grow economically, socially and environmentally.



## 1. INTRODUCTION

Sustainable development (SD) is the development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987). There are two other aspects to this definition that are important to note. The first concerns the notion of 'needs and more specifically the basic needs of the world's poor, which deserves the highest importance. The second is how limited the environment is in its ability to provide for both the immediate and the long-term based on the current state of technology and societal organization (Phimphanthavong, 2014). Over the last two decades, Policymakers and academics have been trying to figure out for the past 20 years whether the country's financial development, economic growth, and environmental indicators contribute to the country's sustainable development. Policymakers mostly cited sustainable development in recent years (Shahbaz et al., 2016; Zakaria & Bibi, 2019; Samour et al., 2022). Sustainable development can define as meeting the present needs without affecting the future generation to achieve their needs. Sustainability is the ability to provide for future generations, as measured by a comprehensive measure of assets (Arrow et al., 2012).

Stock market trading emerged in Kuwait in 1952, and the first shareholding company was founded in the same year as the Kuwait National Bank was founded. Afterward, the government of Kuwait regulates a few laws in the emerging stock market industry but only in the third quarter of 1983 that they find a regular umbrella for the stock market. At the start of 2010, Capital Market Authority (CMA) was created to create a transparent and competitive investment environment in the stock market to attract local and global investors. There are fourteen sectors on the Kuwaiti stock market, each specializing in a particular activity like investment, instruments, or financial services. Not all KSE sectors were initially established. New sectors were created and added to change economic situations and meet modern market demands. It is important to note that short selling is

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not permitted, and common stock is still the only kind of stock traded on the market (Aldaihani & Aldeehani, 2008).

The promotion of economic development and the identification of the factors that have an effect on economic growth are the primary focuses of numerous types of research. These motivating factors have the potential to stimulate economies, drive economic development within those economies, and improve living standards. Over the course of the last few decades, this region has focused a substantial amount of attention on the topic of financial development as one of the many factors that are driving economic growth. The factors, policies, and organisations that encourage desirable financial intermediation, increased market efficiency, and widespread access to financial and capital services are what make up financial development (World Economic Forum, the Financial Development Report 2009). Because of the size and stability of Kuwait's financial system, conducting research on it provides for an interesting case study. In addition to commercial and specialised banks, there are also other types of financial institutions, such as investment funds, insurance companies, and a stock exchange. According to the statistics from 2017, the assets held by the banking industry were responsible for more than 252% of the country's GDP. 83% of the total Economy was represented by the stock market's capitalization (IMF, 2019). There are 23 commercial banks in Kuwait, 11 of which are indigenous institutions.

To look at the relationship between sustainable development and financial development (FD), the financial development is measured by financial development Index and sustainable development (SD) by sustainable development index. The data on financial development index has been downloaded from International Monetary fund (IMF) and sustainable development has from Hickel data set. The relationship between sustainable development and financial development has been shown in the figure 1. It is evident from the figure and findings of the research article that financial development and sustainable development are positively correlated. The graph shows the data from the period of 2000 to 2018. At the beginning of the graph we can see that sustainable development decreases with the decrease in financial development from 2000 to 2003. Then onward the financial development goes up on increasing however the sustainable development index of the country remains stagnant. There is so many factors behind the stagnant forces, however these factors are out of the scope of the study. But on average if we look at the graph and coefficient of financial development shown in the table 4 of Auto regressive distributed lag model we can find that on average sustainable development increases as financial development increases.

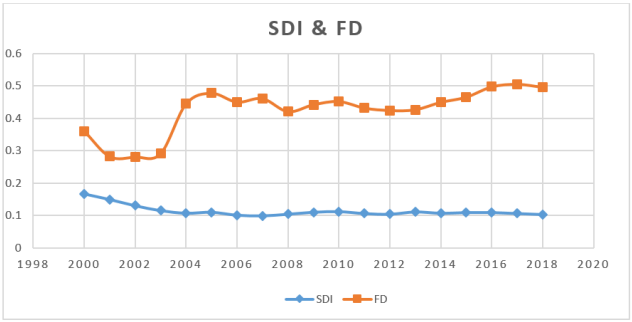


**Figure 1.** Sustainable Development and Financial Development

The relationship between trade and sustainable development has been shown in the figure 2. The data on trade has been taken from the world development indicators (WDI). The data is annually data ranges from 2000 to 2018. The graph of trade shows that the trade of Kuwait has increased over time over the period of time. However the graph of sustainable development shows some dispersing story. The graph of sustainable development index shows that the sustainable development first decreases at three years and then starts slightly moving upward. However the trade figure in large numbers and sustainable figure is in decimal. Therefore the graph of sustainable development in figure 2 is stagnant on horizontal axis. If we look at the graph and compare the relationship between sustainable development and trade we could find the relationship between sustainable development and trade. For instance it is difficult to find the exact relationship from the figure but we could find from the table 4 of ARDL results the estimates shows that the trade and sustainable development are positively linked.

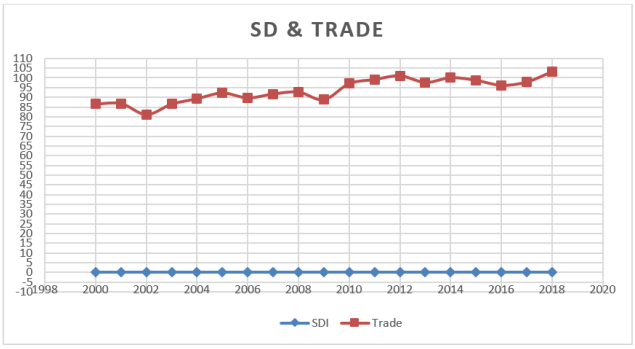


**Figure 2.** Sustainable development and Trade Openness

The stock market of any countries the economic picture of there economy. if the stock market contiuesly goes up, it means that investor are investing in the market which is posotove aspects for economic growth of the economy. as the study takes stock market as indicator of sustainable development in the Kuwait, therefore it is neceassery to plot them itno graph to see the relationship between the sustainable development and tourism development. the graph shows the volatality in the stock market over the study period. However the sustainable development curve shows the less volatilty compare to stock market, because stock market is greatly attached with the political stabilty in the country while sustainable development is composed of three factors, economic socail and environmental aspects. To realy grasp the assocation between sustainable development and stock marekt, the graph shows that there is positive association of sustainable development with stock market. It can be seen at the begening of the 2000, the both the curve goes on upward with positive trend, afterwards when the stock market goes on decline the sustainable development also decreases. After 2000 to 2005 the stock mareket market rises quickly leading to rise the the sustainable development of the country. After taking the average and estimation presented in table 4 we can conclud that there is positive assocation between sustainable development and stock market.

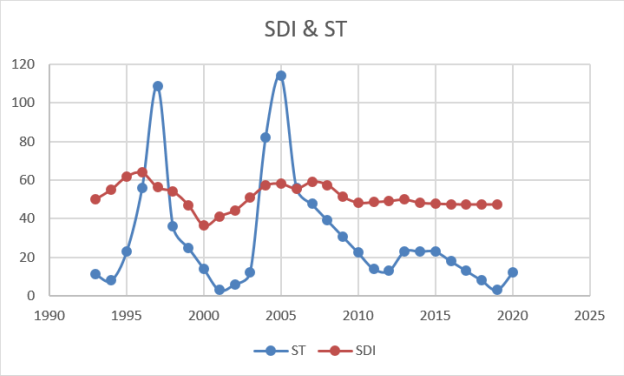


**Figure 3.** Sustainable development and Stock Market

Although studies are being conducted to determine the specific effect of financial development and the stock market on growth of economics in Kuwait, such as the Stock market and growth of economics in oil-producing economies (Bentour, 2014), Saaed and Hussain (2015) evaluated the causal association among financial development, trade openness and growth in economics, while Al-Qenae (2002) examined the stock exchange's financial information and regulation in an emerging nation. However, the researchers should have looked into Kuwait's stock market's and financial development's effects on sustainable development. This article purposes to ascertain the effect of the stock market and financial growth on sustainable development in Kuwait, given the significance of the financial development and stock market and Kuwait's location in the Gulf. The rest of the paper is ordered in the succeeding manner: the second section discusses the techniques, the third section is based on the data, and the fourth and fifth portions are, respectively, based on the results and the concluding remarks.

## 2. METHODS

The regression assumptions must be met prior to estimating the models in the study. For regression to generate reliable analysis, the taken data must be stationary or free from unit root problems. For this purpose, ADF and PP tests check for unit root problems and show whether the data is integrated at level or integrated at first difference. Phillips and Perron (1988) discovered this method is a non-parametric alternative for testing data for unit root problems. Phillips and Perron (1988) changed the coefficient t-test to eliminate autocorrelation based on the distribution of the test statistic.

After unit root tests, the study employs ARDL for long run relationship among variables. The ARDL bound test is employed in this study because it is a more suitbale and significant technique for examining the long and short run with limited sample size. The ARDL model looks at both the short and long run relationships among variables but needs to consider how the variables are integrated (Ibrahim, 2015; Meo et al., 2018; Khalid et al., 2022). ARDL also avoids dealing with the inability and endogeneity problem associated with linear time series techniques such as other cointegration models like Engle-Granger. Equation 1 shows the model of study that was made by the study.

$$SDI = f(STM, FD, TRADE) \ldots \quad (1)$$

In Equation (1), SDI denotes Sustainable development index, STM denotes stock market, FD denotes financial development, and TRADE denotes trade openness. The long run model of the study is displayed in equation (2):

$$ln(SDI)_t = \beta_0 + \alpha_1 ln(STM)_t + \alpha_2 ln(FD)_t + \alpha_3 ln(Trade)_t + \epsilon_t \ldots \quad (2)$$

In equation 2 the natural log of variables is shown as ln. The intercept shows by $\beta_0$ while $\alpha_i$ shows the respective coefficient of the independent variables. The error term is represented by $\epsilon_t$.

**Data**

This study chooses time series data for analysis, with quarterly time periods ranging from 1993 to 2018, and variables including sustainable development, stock market development, financial development, and trade openness. The dependent variable is sustainable development, while the others are independent variables. The calculated index obtained from SDI measures sustainable development, the stock market measures total stock traded value (% to GDP), financial development measures domestic credit to the private sector (% to GDP), and trade openness measures trade (% to GDP) obtained from World Bank.

## 3. RESULTS

The stationarity problem in the model is tested by two unit root tests such as Augmented Dickey Fuller and Philips Perron test, which are depicted in Table 2. The first segment of the Table is composed of results of Augmented Dickey Fuller while the lower part represents the results of Philips Perron test. The results of both test indicates that variables are have mixed order of integration that is *ln*SDI, *ln*STM, and *ln*Trade are integrated at first difference while the *ln*FD is stationary at level.

**Table 2**

ADF and PP test results

| **ADF test** | | | | | |
|---|---|---|---|---|---|
| | I(0) | | I(1) | | |
| Variables | t-stat. | Prob. | t-stat. | Prob. | Decision |
| lnSDI | -1.819 | 0.37 | -3.53* | 0.00 | I(1) |
| lnSTM | -2.09 | 0.24 | -3.44* | 0.00 | I(1) |
| lnFD | -3.12 | 0.02** | -- | -- | I(0) |
| lnTrade | -1.35 | 0.60 | -6.01* | 0.00 | I(1) |
| **PP Test** | | | | | |
| Variables | t-stat. | Prob. | t-stat. | Prob. | Decision |
| lnSDI | -2.19 | 0.20 | -3.49* | 0.00 | I(1) |
| lnSTM | -2.45 | 0.12 | -3.49* | 0.00 | I(1) |
| lnFD | -3.06 | 0.03** | -- | -- | I(0) |
| lnTrade | -1.12 | 0.70 | -6.15* | 0.00 | I(1) |

Note: * and ** shows the level of significant at 1% and 5% respectively.

The study utilized ARDL model, also refer as bounds test, to determine the long run cointegration among sustainable development, the stock market, financial development, and trade openness. Results of the bounds test are displayed in Table 3, in which case the value of F State. is greater than the upper limit values at the 1% level of significance, lending support to the hypothesis that cointegration exists among the variables in the long run. This finding concluded that all of the variables in the study have a long-term association and that the stock market, trade openness, and financial development have long-run effects on sustainable development.

**Table 3**

ARDL Bound test

| **F-Statistical = 6.67** | | |
|---|---|---|
| Significance level | Lower Bound I(0) | Upper Bound I(1) |
| 1% | 5.20 | 6.36 |
| 5% | 4.00 | 5.07 |
| 10% | 3.50 | 4.45 |

Table 4 shows both long and short run results. In the long run stock market has a positively and significantly effected on sustainable development. The results indicated that if 1 percent increase in the stock market will increase 0.25 percent in sustainable development. The results are similar (Masoud, 2013; Oskooe, 2010). Financial development has encouraging effect on sustainable development. The results show that if one percent increases in financial development will increase sustainable development by 0.17 percent. The results are similar (De & Guidotti, 1995; Hermes & Lensink, 2003). Trade openness also has a contributing effect on sustainable development. Suppose a 1 percent rise in trade openness will raise sustainable development by 1.05 percent. The results are identical to those (Babatunde, 2011).

The short run results are coincides with long run that is the stock market negative influence the sustainability while trade openness and financial development positively affects the sustainable developments. The ECT shows the co-integration and the adjustment speed up in the previous period whenever disequilibrium happens to due external shock. The negative magnitude and significance of ECT suggests that model is dynamically stable in the long run.

**Table4**

Outcomes Bases on ARDL

| **Long Run Results** | | | |
|---|---|---|---|
| Variables | Coefficients | Std. Error | Probability |
| lnSTM | 0.25 | 0.08 | 0.00*** |
| lnFD | 0.17 | 0.21 | 0.041 |
| lnTrade | 1.05 | 0.87 | 0.023 |
| **Short-run results** | | | |
| Variables | Coefficients | Std. Error | Probability |
| D(lnSTM) | -0.02 | 0.01 | 0.00* |
| D(lniFD) | 0.12 | 0.05 | 0.02** |
| D(lnTrade) | 0.34 | 0.17 | 0.05*** |
| ECT | -0.07 | 0.03 | 0.03** |

## 4. CONCLUSION & RECOMMENDATIONS

The study aims to figure out the impact of the stock market and financial development on sustainable development. Time series data for analysis and quarterly time period is selected from 1993-2018, and selected variables are Sustainable development, Stock market, financial development, and trade openness. Sustainable development is treated as a dependent variable, while the others are independent. The econometric methods are applied such that first, all the series' descriptions and normality are tested. The study decides to apply ARDL on basis of unit root tests. In the long run, it was discovered that the variables are cointegrated, leading researchers to draw the conclusion that the stock market, financial development, and trade openness are significant and influencing determinants of sustainable development in the case of Kuwait. According to the findings of the research, the stock market has a significant and positive impact on sustainable development in the long run and negatively affect in the short run. According to the findings, the long-term influence of financial development on sustainable development is positive and significant, and the long-term impact of financial development is significant and positive. Since it can be seen from short-run results that trade openness has a positive and significant impact, it can be deduced that trade openness is fostering sustainable development in the short run, which is a very positive sign. The openness of commerce has a negligible effect on sustainable development over the course of a generation. This study suggest that. The long run estimates of the study revealed that stock market, trade openness and financial sector are positive and significant contributor of sustainable development in the Kuwait so it is therefore recommended that efforts should be made to encourage the investor so that the stock market should grow in future. Similarly efforts should be made to boost the financial and trade sector should that the country could grow economically, socially and environmentally.

**Competing Interests**

The authors have declared that no competing interests exist.

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