Macro Economic Indicators in the Kingdom of Bahrain: Measuring Economic Performance for Global Competitiveness

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Abstract

The study determined the impact of macroeconomic indicators in the Kingdom of Bahrain on economic and future performance. It assessed the status of macroeconomic indicators in terms of real exports, industrial production, and inflation rates and their impact on economic performance. Correlation analysis revealed the significant impact of such indicators on economic performance. It determined the macroeconomic variables that can predict global competitiveness. Findings of the study revealed that 60% of Bahrain’s export receipts derived from oil. The Kingdom’s average value for competitiveness was 4.49 points in 2006 and the maximum of 4.6 points in 2012. Real exports, industrial performance, and inflation rates are significantly correlated to economic performance. There is significant impact of the variables investigated on Bahrain’s economic performance. The variables of real exports, industrial performance, and inflation rates are predictors of economic performance. Findings also revealed that the economic performance of Bahrain will be the same in the future period. The Regression Model of Ordinary Least Square’s Equation for Achievement of Economic Performance for Global Competitiveness in the Kingdom shows that 3.3% of real exports, 58.2% of industrial production minus 2.9% of inflation will result in achieving targeted economic performance, sufficient to support economic sustainability over the long run and maintain global competitiveness. The Chi-square test of independence shows that the variables of macroeconomic indicators and economic performance of the Kingdom are not independent of each other. The rising trends of macroeconomic indicators contribute to the increasing level of economic performance for global competitiveness and are projected to continue in the next future period.

Key words: Economic Performance, Real Export, Industrial Productivity, Inflation Rates, Global Competitiveness.
1. Introduction

Macroeconomic indicators are economic statistics which are released periodically by government agencies and private organizations which provide insight into the economic performance of a particular country or region. Economic performance is an assessment for an organization of its success in areas related to its assets, liabilities and overall market strength. Many business organizations take regular stock of the general economic performance of their company to make sure that it remains on the right track financially.

Bahrain has made great efforts to diversify its economy; its highly developed communication and transport facilities make Bahrain home to numerous multinational firms operating in the Gulf. As part of its diversification plans, it implemented a Free Trade Agreement with the US in August 2006, the first Trade Agreement between the US and a Gulf state. Bahrain's economy, continues to depend heavily on oil with petroleum production and refinery accounted for 77% of its export receipts, 87% of government revenues, and 19% of GDP. Other major economic activities are production of aluminum, financial, and construction. Bahrain competes with Malaysia as a worldwide center for Islamic banking and continues to seek new natural gas supplies as feedstock to support its expanding petrochemical and aluminum industries. In 2011, Bahrain experienced economic setback as a result of domestic unrest, however, the economy recovered in year 2012 as a result of improved tourism. Some economic policies aimed at restoring confidence in Bahrain’s economy, such as the suspension of an expatriate labor tax and frequent bailouts of Gulf Air, will make Bahrain's long-term economic challenges on youth unemployment and the growth of government debt, more difficult to address.

Economic performance slowed after the global economic downturn starting in 2008, but durable economic recovery was evident thereafter. The country accelerated in economic performance against a backdrop of global uncertainty. Critical elements to economic diversification and sustainability were contributions from the service industry such as finance, tourism, Islamic banking, financial services, and privatization of its economy. Gradual drop in oil production led to economic diversification to reduce both oil reliance and figures of unemployment. Structural drivers of economic diversification and demographic dynamism contributed to the adoption of economic reforms for an upgrade in real exports, industrial production, and employment growth. The country’s economic performance benefited from a long period of educational services, high demand for health care, boom in real estate, rising government spending, and a long period of high oil prices.
1.2 Statement of the Problem

The study determined the impact of macroeconomic indicators in the Kingdom of Bahrain on economic performance. Specifically, it sought answers to the following questions:

1. What is the status of macroeconomic indicators in the Kingdom of Bahrain in terms of real exports, industrial production, inflation rates, and unemployment rates?

2. What is the level of economic performance of the Kingdom of Bahrain?

3. Is there significant impact of the macroeconomic indicators in the Kingdom of Bahrain on economic performance?

4. Is there significant difference in the level of economic performance of the Kingdom of Bahrain in the past ten years and in the long term?

5. Which of the macroeconomic indicators significantly predict economic performance of the Kingdom of Bahrain?

6. Are macroeconomic indicators in the Kingdom of Bahrain independent of economic performance?

Null Hypotheses

Ho1: There is no significant impact of the macroeconomic indicators in the Kingdom of Bahrain on economic performance.

Ho2: There is no significant difference in the level of economic performance of the Kingdom of Bahrain over the past ten years and in the long term.

Ho3: The variables of real exports, industrial production, and inflation rates do not predict economic performance in the Kingdom of Bahrain.

Ho4: Macroeconomic indicators in the Kingdom of Bahrain are not independent of economic performance.

1.3 Scope and Limitations of the Study

The study determined the impact of macroeconomic indicators in the Kingdom of Bahrain on economic performance for global competitiveness. It identified macroeconomic indicators that will predict economic performance of the Kingdom. The study focused on the variables of real exports, industrial production, and inflation rates. Significant difference in the level of economic performance over the past ten years and in the long term was also determined.

1.4 Significance of the Study

This study is deemed significant to the following beneficiaries:

The Kingdom of Bahrain. The study will provide insights to policy makers, for enhancement of policies through emphasis on the latest economic indicators that influence the performance of the nation.
The Students. The findings of the study will serve as a guide to students in the understanding the different factors that are currently affecting the performance of the economy in the Kingdom of Bahrain which can in turn influence the present standard of living of the people in the country.

The Researchers. The study will provide data of the economic indicators that are relevant to the performance of the economy of Bahrain which can also be true in other nations.

2. Literature Review and Studies

The literature and studies of this research have been sourced out from local and foreign materials that were reviewed from various libraries and from the internet.

The paper of Patsiurko et al. (2013) examined the propositions of the dependent of economic performance of advanced capitalist nations on their ethnic composition and size. It blended insights on the relationship between the size of the nation and performance of its economy. Another idea suggested the dependent of economic performance on ethnic composition. Regression analysis revealed that countries that are ethnically homogeneous tend to have stronger economic growth rates than nations that are ethnically heterogeneous. The size of countries and interaction of size and ethnic composition have no significant effects.

Roy and Goll (2014) examined the influence of national culture on the facets of a country's sustainability indicators of avoidance of corruption, environmental performance, and human development. Exploratory analysis was used to identify the three dimensions of culture; gender egalitarianism, socially supportive culture, and performance based culture. Hierarchical regression analyses explored the role of cultural and economic factors in the various sustainability facets. Findings of the study revealed that performance based culture and gender egalitarianism influence positively environmental performance. Gender egalitarianism interacts with economic freedom to influence positively environmental performance. It also influences positively human development increasing gross domestic product and economic growth rate. The study summarized the implications of cultural dimensions and economic factors on sustainability factors.

The paper of Buser (2011) examined the impact of public sector decentralization on per capita income. Panel data regressions on a sample of observations from twenty high-income nations indicate positive decentralization relative to income. Empirical analysis reveals that organizations consistent with economic freedom enhance the effects of decentralization on positive income. The impact of public sector decentralization was found to be dependent upon a nation's institutional environment.

The study of Seleim and Bontis (2013) aimed to examine the relationship between national intellectual capital and economic performance in less developed countries. The study
developed and measured a model of the interrelationship of selected sub-components of national intellectual capital and its impact on economic performance in one hundred forty-eight developing countries. Results of the study indicate that in developing nations, national intellectual capital explains seventy percent of the variance in economic performance. Findings reveal in achieving economic performance, national relational capital is a critical component. Findings of sub-hypotheses tested that focused on developed nations contribute to the growing theory of national intellectual capital management through the provision of empirical evidence of the interrelationship among sub-components and their impact on economic performance. Investigation of the national intellectual capital in less developed nations provides insights into the derivative of economic performance. Findings provide policy makers insights into the economic development drivers of their countries and formulation of strategies that leverage unique sources of competitiveness.

Reports of Adams (2009) on the “Economic Performance and Social Progress”, considered issues in the establishment of a broader measure of human well-being than the per capita gross domestic product currently used. The Report evaluated possibilities in the expansion of the concept of GDP and other measures of well-being, and for evaluation of sustainability. It was recognized not to rely on one measure, with recommendation on the utilization of a dashboard of various measures such as adjusted net saving.

Macdonald (2010) used the data of Organization for Economic Cooperation and Development to examine changes in economic aggregates, and relative economic growth labor productivity, real gross domestic product, real gross domestic income over time. The study considered the sources of trading gains, the real exchange rate and the terms of trade. The terms of trade are the more important price ratio for OECD nations, which makes contribution to real income growth on average, which is an order of magnitude larger than the real exchange rate. The most essential source of real income growth is changes in production over long time periods. Trading gains can make noteworthy contributions over the shorter time. Shown to be dependent on trading gain are changes in aggregates like real private consumption, or the relative economic performance of nations, are shown to be particularly dependent on the trading gain.


The paper of Brokett et al. (2014) utilized rank statistics and measures of productive efficiency to evaluate efficiency performance trends derived from Data Envelopment Analysis models. Difficulties in gathering ranks from Data Envelopment Analysis efficiency
ratings are discussed in the study. It proposed procedures in identifying intertemporal performance trends through efficiency measures and developed the test for stability of rank positions of analyzed units over time. The study applied new procedures to data which reflects the macroeconomic performance of seventeen nations of the Organization for Economic Cooperation and Development.

Genuine Progress Indicator was used in the study to measure national economic performance which involves utilization of monetary valuation for aggregation (Common, 2007). The study proposed a new approach to measure national economic performance without the involvement of prices for aggregation. It provides results of three variants of the new approach. A single definitive assessment of the current economic activity sustainability provides useful inputs to relevant research activity and policy analysis.

Khramov and Lee (2013) proposed an informative metric called Economic Performance Index that combines data on unemployment, inflation, government deficit, and GDP growth into a single indicator. A descriptive grading system was adopted. A historical review was conducted to demonstrate the validity of the Economic Performance Index and revealed that it reflects major events in the history of the US including economic depressions, recessions, and periods of economic prosperity and booms.

Central Bank of Bahrain (2014) reports that economic performance in the Kingdom of Bahrain increased to 5% in 2014 due to increases in oil production, manufacturing and government spending. A sharp fall in the output in the first quarter of 2011 due to unrest, but output grew by 3.2% in the fourth quarter. Communications and transport industries were recorded to be the fastest growing sector in 2011 with 11% growth rate. The Economic Development Board attracted new foreign investment in banking and manufacturing, in 2011 with new business organizations establishing operations in the kingdom.

2.1 Theoretical Framework of the Study

Figure 1 presents the circular flow model that indicates the flow of money through an economy. The households buy products from the product market and pay money to the product market, which then pays the business firms in exchange for the products purchased with money. Business firms need inputs of production in order to produce, so they must pay wages, rent to the factor market. The factors of production are being supplied by households to get the payments in order to buy more products. Households must pay taxes to the government. The government pays the households transfers in the form of Social Security, or disability. Households pay money to financial institutions in the forms of loan payments and savings. Households receive payments in the form of interest and dividends. Firms pay in interest and the loan principles. When cycle goes the other way, the labor market is shown Households supply labor to the factor market, which supplies labor to the business firms. The
business firms supply products to the product market, where the households are being supplied with products. Figure 1 shows the theoretical framework of the study.

Figure 1: Theoretical Framework of the Study “Measurement of Economic Performance”

2.2 Conceptual Framework of the Study
Figure 2: Conceptual Framework of the Study
“Causal Relationship of Independent and Dependent Variables”

Impact of macroeconomic indicators on economic performance in the Kingdom of Bahrain in terms of
1. Real Exports
2. Industrial Production
3. Inflation Rates

High Level of Economic Performance of the Kingdom of Bahrain for Global Competitiveness

A cause and effect relationship was used in the study to indicate the impact of the independent variables on the dependent variable. As shown in figure 2, the study adopts the notion that macroeconomic indicators of real exports, industrial production, and inflation rates will have an impact on the economic performance in the Kingdom of Bahrain which contributes to the attainment of global competitiveness and supports the nation’s economic performance sustainability over the long run. The study focused on the impact of macroeconomic indicators on economic performance of Bahrain which will result in maintaining global competitiveness.
3. Methodology

3.1 Research Design

The research is qualitative, quantitative and descriptive in nature, using both descriptive and inferential statistics to analyze data pertaining to the rates of real exports, industrial production, inflation rates, and unemployment rates. Qualitative research was utilized and data analysis involved the search for patterns and features aimed at forming contextual descriptions of the variables of real exports, industrial production, and inflation rates. Quantitative data were collected based on precise measurements utilizing archival data sources and analysis, involved the establishment of statistical relationships.

The research study involved a documentary analysis of the data on macroeconomic indicators of real exports, industrial production, and inflation rates, and their impact on economic performance. Historical research and content analysis were used as methods of research which involved the critical investigation of developments of the past and interpretation of the weighted evidence. The researcher interpreted and evaluated the data for validity. Documentary analysis was used as descriptive research to explain the status of phenomenon at a period of time and its development over time. The researcher reviewed and analyzed annual reports, brochures, office records available, and government manuals and standards to provide explanations of the issues that were raised by this study.

3.3 Research Instruments and Techniques

Statistical Treatment of Data

The data were collected, tabulated, analyzed and interpreted. The following statistical tools were used in the analysis:

1. Arithmetic Mean. The arithmetic mean used to measure the central tendency of raw data.
   
   The formula is:
   
   \[ \bar{X} = \frac{\sum F \cdot X}{N} \]

   Where:
   
   \[ \bar{X} \] = weighted mean.
   
   \[ \sum \] = summation.
   
   \[ X \] = value of the response.
   
   \[ F \] = number of times item occurs.
   
   \[ N \] = responses.

2. Pearson Correlation. This statistical tool was used to measure the degree of impact of the macro-economic indicators on economic performance of the Kingdom of Bahrain.
The formula is:

\[
\text{r} = \frac{N\sum xy - (\sum x)(\sum y)}{\sqrt{(N\sum x^2 - (\sum x)^2)(N\sum y^2 - (\sum y)^2)}}
\]

Where:
- \(N\) = number of pairs of scores
- \(\sum x\) = sum of x scores
- \(\sum y\) = sum of y scores
- \(\sum xy\) = sum of products of paired scores
- \(\sum x^2\) = sum of squared x scores
- \(\sum y^2\) = sum of squared y scores

3. **T-test.** This statistical analysis was used to test the significant difference between the economic performance of the Kingdom of Bahrain over the past ten years and over the long term.

4. **Multiple Regression Analysis.** This tool was used to assess the relationship between macro-economic indicators with Bahrain’s economic performance, and to determine degree to which the macroeconomic indicators predict the economic performance of the country.

The formula is:

\[
\text{r} = \frac{N\sum xy - (\sum x)(\sum y)}{\sqrt{(N\sum x^2 - (\sum x)^2)(N\sum y^2 - (\sum y)^2)}}
\]

Where:
- \(N\) = number of pairs of scores
- \(\sum x\) = sum of x scores
- \(\sum y\) = sum of y scores
- \(\sum xy\) = sum of products of paired scores
- \(\sum x^2\) = sum of squared x scores
- \(\sum y^2\) = sum of squared y scores

5. **Chi-Square Test.** To test the hypothesis that categorical variables of macroeconomic indicators and economic performance are independent of each other, Chi-Square Test was used.

4. **Results and Discussions**

This chapter presents the analysis, interpretations and discussions of the statistical findings of the study.
4.1 Status of Macroeconomic Indicators in the Kingdom of Bahrain in Terms of Real Exports, Industrial Production, and Inflation Rates

4.1.1 Bahrain’s Real Exports

Figure 3: Bahrain’s Real Exports (Year: 2000 – 2014)

Source: Central Information Organization: Kingdom of Bahrain (2014)

Significant increase in real exports in the Kingdom of Bahrain was driven by rise in prices of commodities and a strong global economy over the past decade. Bahrain’s Real Exports increased in 2011 reaching an all high of 9110 BD million (Ministry of Finance, Kingdom of Bahrain, 2014). Sixty percent of Bahrain’s export receipts come from oil accounts while 70% are derived for government revenues. Other exports include textiles, electrical equipment, transport equipment, chemical products, and aluminum. The country’s goods export revenues grew by 229% from 2002 to 2012. The rising trend in real exports bolstered the living standards of the people and increased the average real wages by 33%.

As presented in Figure 3, real exports show a rising trend from 5.8% in year 2000 to 6.2% in the current year. Growth rate recorded an all high of 44.17% in 2005, and presents an increasing trend of real exports from 2000 to 2011. Petroleum products comprised a large share of exports consisting of petroleum products from imported crude oil. Exports of $395 million consumer goods to the United States in year 2013, reported to be one of the nation’s biggest export markets and provides a base load for achievement of increased future economic performance.

4.1.2 Bahrain’s Industrial Production

Figure 4: Bahrain’s Industrial Production (Year: 2000 – 2014)

Source: Central Information Organization: Kingdom of Bahrain (2014)
As shown in Figure 4, annual percentage increase in industrial production recorded a rising trend from year 2000 to an all time high rate of 6.3% in year 2008, contributed by manufacturing, mining, and construction industries in the Kingdom of Bahrain. The country has substantial production of aluminum while construction industry is reported to contribute a major percentage in the nation’s increased share of industrial productivity. High percentage of growth rate is attributed to industrial production expansion and infrastructure which remain to be the main beneficiaries of government spending in the current period and in the long term. Manufacturing accounted for BD 375 million in total gross domestic product in 2013, presents opportunities for substantial future investments in the country.

4.1.3 Bahrain’s Inflation Rates

![Bahrain’s Inflation Rates (Year: 2000 – 2014)](image)

Source: International Monetary Fund (2014)

Average rate of consumer price inflation in the Kingdom of Bahrain is at 2.8% in 2012. Housing and food were recorded to have the largest weights and are the main drivers of inflationary trends in the country. As shown in Figure 5, Bahrain’s inflation rate registered an all time high rate of 5.22% in 2009 and a low record of -2.06 in 2011. Inflation rate in the country recorded 3.10% inflation rate in 2014 and an average of 2.27% from 2008 until 2014.

The Telegraph (2014) reports that Bahrain’s economy experiences similar inflationary pressures due to increase in oil prices. The country’s inflation is likely to remain the lowest in the Gulf region, with projections of upward pressures in the future period, due to its economic diversification. Contributing to Bahrain’s disproportionate susceptibility to inflation which is petroleum-driven is primarily because of the Central Bank policies, where fiscal policy tied to oil revenues, and strong inter-relation of the country’s economy with the Kingdom of Saudi Arabia.
4.2 Level of Economic Performance of the Kingdom of Bahrain

Figure 6: Bahrain’s Level of Economic Performance, Year: 2000 - 2014

Source: Central Information Organization: Kingdom of Bahrain (2014)

The Kingdom of Bahrain recorded significant and positive economic performance despite political challenges in 2011 and severe global downturn in 2009, following exceptional decade of increasing oil prices and robust economic growth as presented in Figure 6. The 21st century proved to be a period of rapid economic performance in the Kingdom with an average of 5% annual growth from 2000 to 2012, driven by expansion in the construction industry, increased demand for personal and social services, and government spending. The country’s GDP grew by 3.4% in 2012 contributed by the non-oil sector, namely; hotels and restaurants, social and personal services, and manufacturing. Expansion in oil related industry and petrochemical were also main drivers of economic performance. As oil prices decline, economic growth rate also declined from 6.3% in 2008 to 3.1% in 2009. The current surplus shrunk to 7.2% of GDP with fiscal balance to return a deficit of 6.7% of GDP (Central Informatics Organization, 2014). The kingdom’s economy share of the world’s total GDP was recorded at 0.04% in 2009. Forecast show 0.04% Bahrain’s share of world total GDP in 2015. The country has achieved recent global rankings and remains highly competitive in the global economic environment.

Figure 7: Bahrain Annual Growth Rate

Bahrain’s GDP expanded by 2.28% in the second quarter of 2014 over the previous quarter and averaged 0.49% from 2011 to 2014 as presented in Figure 7. Gross Domestic Product
reached an all time high of 2.8% in the third quarter of 2012 and a low record of -6.6% in the first quarter of year 2011. Economic performance data revealed resilience of the economy of Bahrain with its continued growth in the face of technical disruptions in the oil sector and the global crisis. As part of the country’s efforts to build a modern economy and strengthen the nation’s global competitiveness, economic reforms were initiated by the government to expand high technology industries and research and development. Benchmarking reports indicates Bahrain’s substantial competitive strengths in international indices specifically in the area of macroeconomic stability.

4.3 Significant Impact of the Macroeconomic Indicators in the Kingdom of Bahrain on Economic Performance for Global Competitiveness

Table 1: Significant Impact of Macroeconomic Indicators on Economic Performance

<table>
<thead>
<tr>
<th>Economic Performance Indicators</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
<th>Pearson Correlation</th>
<th>Sig. (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Exports</td>
<td>11.9</td>
<td>12.06</td>
<td>19</td>
<td>-.123</td>
<td>.004**</td>
</tr>
<tr>
<td>Industrial Production</td>
<td>2.43</td>
<td>2.70</td>
<td>19</td>
<td>.599**</td>
<td>.007**</td>
</tr>
<tr>
<td>Inflation Rates</td>
<td>2.38</td>
<td>1.82</td>
<td>19</td>
<td>.278</td>
<td>.008**</td>
</tr>
</tbody>
</table>

**Correlation is significant at .01 level (2 tailed).

Table 1 shows correlation coefficients for measuring the strength of linear relationships between the macroeconomics variables and economic performance. The correlation coefficient between real exports and economic performance is -0.123 and the p value of 0.004* for two-tailed test of significance, greater than 0.01, reveals significant relationship between the two indicators. The null hypothesis is rejected and the two variables are significantly correlated.

Correlation coefficient of industrial production and economic performance is .599** and the p value for two-tailed test of significance of .007**, show significant relationship between production and economic performance. The null hypothesis is rejected, and the two variables are significantly correlated. The correlation coefficient of .599** between the two variables indicates movement of economic growth in the same direction.

Inflation rates and economic performance reveal .278 coefficient correlation and p value of .008**, significant at 1% significance level. There is significant relationship between inflation rates and economic performance. The null hypothesis is rejected and the two variables are significantly correlated.

4.4 Significant Difference in the Level of Economic Performance of the Kingdom of Bahrain in the Past Ten years and in the Long Term

Table 2: Independent Samples Test for Significant Difference in the Level of Economic Performance of the Kingdom of Bahrain in the Past Ten Years and in the Long Term

<table>
<thead>
<tr>
<th></th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levene's Test for Equality of Variances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
</tbody>
</table>

www.globalbizresearch.org
Levene’s test for equality of variances tests the null hypothesis that economic growth over the past ten years and economic growth in the long term have equal variances. Test statistic of 0.051 indicates that the two time periods have equal variances (with equal variances assumed), and the null hypothesis is true and accepted. Economic performance over the last ten years does not significantly differ in the long term. Table 2 presents the significant difference in the level of economic performance.

The T-test result, with equal variances not assumed, shows t-statistic of 0.072 with 9.455 degrees of freedom. The corresponding two-tailed p value is 0.072, is higher at both 1% and 5% level of significance. The null hypothesis is accepted at both significance levels which means that values of economic performance of Bahrain in these time periods are just the same.

4.5 Macroeconomic Indicators that Significantly Predict Economic Performance of the Kingdom of Bahrain

Table 3 presents the regression coefficients and their significance. The regression coefficients were used to construct an “Ordinary Least Squares” equation and equation for predicting economic performance was constructed. As shown in the table, real exports, industrial production, and inflation rates are predictors of economic performance in the Kingdom of Bahrain, indicated by the p value of .007, .002, and 0.000, significant at both 1% and 5% levels of significance.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
</tr>
<tr>
<td>1</td>
<td>(Constant )</td>
<td>4.210</td>
<td>.592</td>
<td>7.107</td>
<td>.000</td>
<td>2.947</td>
</tr>
<tr>
<td></td>
<td>RE</td>
<td>-.004</td>
<td>.024</td>
<td>.033</td>
<td>-.157</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>IP</td>
<td>.294</td>
<td>.115</td>
<td>.582</td>
<td>2.555</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>IR</td>
<td>.022</td>
<td>.172</td>
<td>-.029</td>
<td>.128</td>
<td>.000</td>
</tr>
</tbody>
</table>
Table 4: Regression Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.601*</td>
<td>.361</td>
<td>.234</td>
<td>1.19722</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df2</td>
</tr>
<tr>
<td></td>
<td>.361</td>
<td>2.828</td>
<td>3</td>
<td>15</td>
<td>.074</td>
</tr>
</tbody>
</table>

The table 4 shows R values for assessing the overall fit of the regression model. Adjusted R value is 0.234 which indicates that the independent variables of real exports, industrial production, and inflation rates account 23.4 percent variance in economic performance.

4.6 Ordinary Least Square’s Equation for Achievement of Economic Performance for Global Competitiveness in the Kingdom of Bahrain:

Economic Performance For = 0.033 Real Exports + 0.582 Industrial Production
Global Competitiveness - 0.029 Inflation Rates

The model shows that 3.3% of real exports, 58.2% of industrial production minus 2.9% of inflation will result into achievement of targeted economic performance in the Kingdom of Bahrain, sufficient to support economic sustainability over the long run and maintain global competitiveness in the global economic environment.

4.7 Chi-Square Test to Test Independence of Categorical Macroeconomic Variables and Economic Performance in the Kingdom of Bahrain

Table 5: Chi-Square Test for Independence of Variables

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>342.000*</td>
<td>324</td>
<td>.236</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>111.889</td>
<td>324</td>
<td>1.000</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.051</td>
<td>1</td>
<td>.821</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 361 cells (100.0%) have expected count less than 5. The minimum expected count is .05.

The Chi-square test of independence was used to test the hypothesis that the variables of macroeconomic indicators and economic performance of the Kingdom of Bahrain are independent of each other. Two-sided significance presented in Table 8 show Pearson Chi-Square value of 342.0 and p value equivalent to .236 greater than significance levels at both 5% and 10%. The null hypothesis is accepted. Macroeconomic indicators and economic performance of Bahrain are not independent of each other.

Findings imply that changes in the rates of macroeconomic variables of real exports, industrial production, and inflation rates will cause a change in the level of economic performance in the Kingdom of Bahrain. The rising trends of macroeconomic indicators in the country contribute to the increasing level of economic performance for global competitiveness and are projected to continue in the next future period.
5. Conclusions

1. Significant increase and rising trend in real exports in the Kingdom of Bahrain was driven by rise in prices of commodities and a strong global economy over the past decade.

2. Annual percentage increase in industrial production recorded a rising trend, contributed by manufacturing, mining, and construction industries in the Kingdom of Bahrain.

3. Bahrain’s economy experiences similar inflationary pressures due to increase in oil prices and the country’s inflation is likely to remain the lowest in the Gulf region, with projections of upward pressures in the future period.

4. Kingdom of Bahrain recorded significant and positive economic performance despite political challenges and severe global downturn, following exceptional decade of increasing oil prices and robust economic growth.

5. The correlation coefficient between real exports and economic performance reveals significant relationship between two indicators. The null hypothesis is rejected.

6. Correlation coefficient of industrial production and economic show significant relationship between production and economic performance. The null hypothesis is rejected, and the two variables are significantly correlated.

7. Inflation rates and economic performance reveal significant relationship. The null hypothesis is rejected.

8. Test statistic indicates that the two time periods have equal variances (with equal variances assumed), and the null hypothesis is true and accepted. Economic performance over the last ten years does not significantly differ in the long term.

9. The T-test result, with equal variances not assumed, shows that values of economic performance of Bahrain over the last ten years and in the long term are just the same.

10. Real exports, industrial production, and inflation rates are predictors of economic performance in the Kingdom of Bahrain.

11. The Regression Model of Ordinary Least Square’s Equation for Achievement of Economic Performance for Global Competitiveness in the Kingdom shows that 3.3% of real exports, 58.2% of industrial production minus 2.9% of inflation will result into achievement of targeted economic performance in the Kingdom, sufficient to support economic sustainability over the long run and maintain global competitiveness in the global economic environment.

12. The Chi-square test of independence show that the variables of macroeconomic indicators and economic performance of the Kingdom of Bahrain and economic performance are not independent of each other. The rising trends of macroeconomic indicators in the country contribute to the increasing level of economic performance for global competitiveness and is projected to continue in the next future period.
5.1 Recommendations

1. Conduct further studies that will focus on variables not included in the study that are likely to influence the level of economic performance of Bahrain.

2. Monitor the level of real exports, industrial production, and inflation rates which are significantly correlated with economic performance.

3. Develop other economic models that will determine an increase in a nation’s economic performance and maintain global competitiveness.

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