

EFFECTS OF INTERNAL AND EXTERNAL FACTORS ON ACCOUNTING PROFIT OF FIRMS: A PANEL DATA ANALYSIS FOR GCC COMPANIES

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ABSTRACT

This study comprehensively analyzes the effects of internal (micro) and external (macro) factors on the accounting profit of firms in the manufacturing and service sectors of the Gulf Cooperation Council (GCC) countries. The study used balanced panel data of 56 firms in manufacturing sector and 51 firms in services sector for the period of 2013 to 2017. The estimation results of the fixed effect model show that there are five internal and five external factors that significantly affect the profitability of a firm in the manufacturing sector of the GCC countries. The fixed-effect model for the firms in the services sector shows that there are five internal and four external factors that significantly affect the profitability of the firm in this sector. The comparison of actual and estimated profit shows that there exists enough potential for higher profit for the firms in the manufacturing and service sector of the GCC countries.

Keywords: Accounting profit, internal factors, external factors, profit potential, panel data

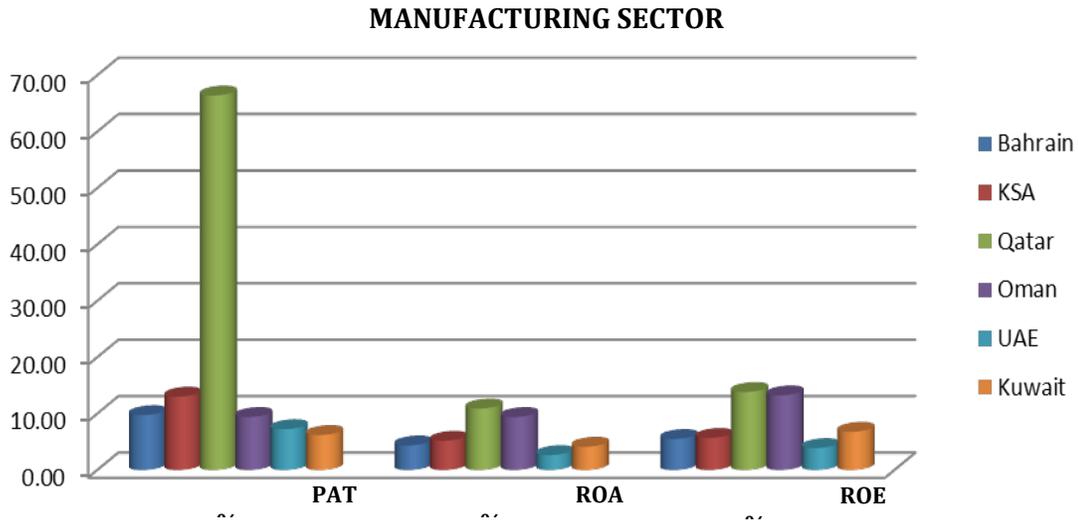
INTRODUCTION

Profitability is generally considered the most vital precondition for the survival of A company in the long run, and it is the most important aspect in any company or industry—not only from the shareholders' perspective, but also significant for all other stakeholders.

The Cooperation Council for the Arab states of the Gulf, originally known as the Gulf Cooperation Council (GCC), is a regional inter-governmental political and economic union consisting of all Arab states of the Persian Gulf: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). There are several reasons for making the GCC countries as the sample for this study. Firstly, there are few studies on this issue focusing on the GCC countries. Secondly, the previous studies on this region are mostly time-series studies, but this current study uses panel data. Finally, the previous studies used simple techniques, while this study used rigorous econometric techniques to analyze the profitability of the firms in the GCC countries.

Figure 1 is the sector-wise average profitability, that is, PAT (Profit After Tax), ROA (Return on Assets), and ROE (Return on Equity) trends of firms in manufacturing and services sectors in the GCC countries covering the period 2013 to 2017.

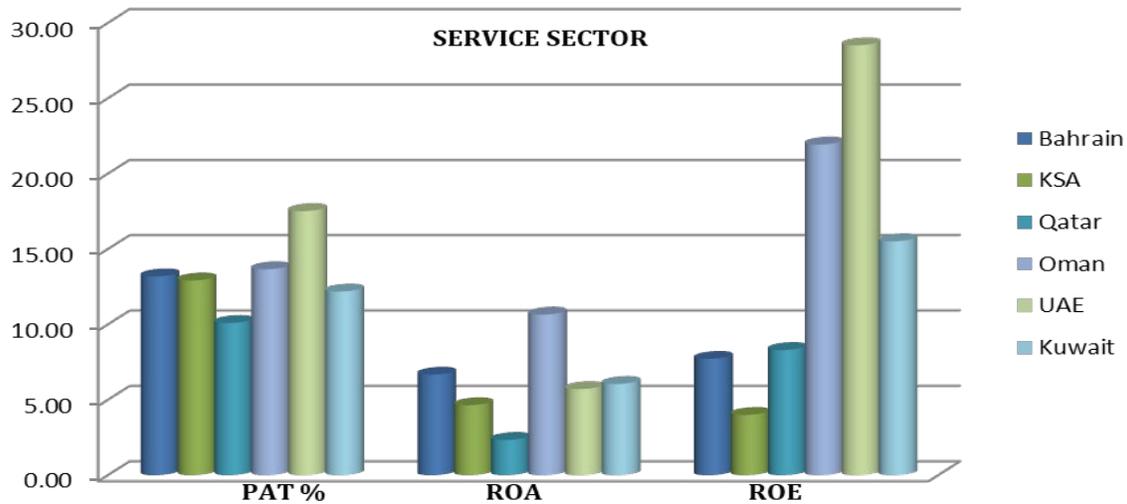
FIGURE 1
Profitability of Manufacturing Sector in GCC Countries



Source: Companies' Annual Reports.

In Figure 1, Qatar has a distinctive edge among the GCC countries in terms of PAT percentage, whereas the other countries have close situations to each other in terms of PAT. However, if we look at ROA and ROE, it is not showing much deviation among the GCC countries except in the case of Qatar and Oman as they have a slight edge relative to other participants of the GCC comparatively. In contrast with the manufacturing sector, we can compare the service sector in the GCC as a joint effect which we can see in Figure 2 below.

FIGURE 2
Profitability of Services Sector in GCC Countries



Source: Companies' Annual Reports.

Figure 2 shows that the UAE has slightly above average edge in terms of PAT, but in ROE it reflects a distinctive edge over other GCC countries and in both parameters, Oman has a close position with the UAE. In terms of ROA, Oman has a leading position comparatively with others in the GCC. Qatar stands at the lowest point in terms of ROA and PAT, whereas in terms of ROE, KSA reflects the least position.

We believe that this study contributes to the scarce literature on the GCC countries over the profitability of firms in several ways. First, this is one of the very few studies investigating the profitability of firms in the manufacturing and services sectors separately. Second, most of the previous studies ignored the oil-exporting economies in their empirical analysis. This study is based on purely oil-exporting countries. Third, to the best of our knowledge, this is the first comprehensive panel data analysis of profitability in the manufacturing and services sector of the GCC countries, addressing both internal (firm-specific) and external (economy-specific) factors. Finally, the study compares the potential of profitability in the manufacturing and services sectors of the GCC countries.

The findings of this study will be helpful for the policymakers who want to create a well-established environment for the operation and growth of business firms. To achieve the objectives of this study the paper is organized into five sections. Following the introduction, Section 2 discusses the theoretical and empirical literature, and Section 3 presents the modeling framework. Section 4 discusses the model estimation results and potential of profitability in the manufacturing and services sectors of the GCC countries. Section 5 concludes the study, discussing the policy implications, and setting directions for further research.

LITERATURE REVIEW

We present herein the review of studies that focused only on the micro (internal) factors; then those studies will be presented that also focused on the macro (external) factors of firm profitability. According to the theoretical perspective, the factors that can be used to analyze the firm profitability can be explained in three different classes: firm's characteristics, market-related and industry-related factors. Researchers apply these factors in different dimensions to analyze the firm's profitability. Structure conduct performance (SCP) theory is a school of thought in profitability generation that dominated until the 1980s (Margaret, 2004). This approach believes that exogenous market factors such as the size of distribution in industry guiding the endogenous variable and have a positive impact on the firm's profitability. In the 1970s, market share-based schools of thought in Chicago criticized that the profitability behaves the other way around as claimed by SCP theory. They claimed that efficient firms grow and capture a large share of the market, whereas weak firms may shrink and lose their share until they exit from the market.

The conventional or traditional approach analyzes the profitability based on the industry characteristics but a recent approach emphasis the importance of the variables at a firm-level which is also named as a resource-based view (RBV). This theory suggests that the firm size and growth have a positive relationship with profitability in large firms due to the economies of scale as it provides a competitive advantage (Yazdanfar, 2013).

The profitability of Greek non-financial firms listed in the Athens stock exchange in the period of 1995 to 2003 (Ioannis, Aristeidis, & Theodore, 2009). The study covering 119 firms with firm size, growth rate in sales, growth rate in investments, and leverage as factors affecting profitability. The panel data analysis was used for the study with the pre- and post-EMU (European Monetary Union) period. The results reflect that sales, growth, firm size, and investment growth have a positive significant effect on profitability, and leverage has a negative impact.

The banks' profitability in terms of ROA and ROE on a sample of a total of 1042 banks mostly focused on Austria over 15 years covering from 1995 to 2009 (Fabio & Walter, 2010). The author used panel data regression analysis by considering economic growth, GDP, foreign lending, change of ownership, and interest rate as macroeconomic factors. The results showed that all three macroeconomic variables such as economic growth, GDP, and interest rate have positive significant effects on banks' profitability, whereas a change in ownership structure and foreign lending does not have a significant impact on profitability.

The profitability of 22 public and private sector commercial banks for the period covering from 2006 to 2009 (Khizer, Muhammed, & Ahmed, 2011). The study uses descriptive correlation regression analysis with a generalized method of movement by considering asset management, GDP, credit risk, and economic growth as macroeconomic determinants of firm profitability. To deal with the problems of multicollinearity and auto-correlation they used Pearson correlation and Durbin Watson tests. The results reflect that asset management, credit risk, and economic growth have a positive and significant relationship with profitability; on the other hand, GDP has a negative effect on profitability.

A study also tested the firm leverage, liquidity ratio, size, and tangibility (fixed asset ratio over total asset) as the determinants for profitability by using the panel data analysis from a sample of 55 manufacturing companies listed in Colombo stock exchange, with over 550 observations covering the period from 2003 to 2012 (Tharmalingam, 2014). The result shows that the firm size and tangibility have a significantly positive relationship and on the other part liquidity and leverage ratio shows an insignificant relationship on firm profitability.

The study analyzes the firms' profitability by considering ROA and ROE as accounting profit indicators (Mark & Chaipooirutana, 2014). The research used a multiple regression model by using a sample of 39 technology-based companies in Thailand which comprises 11 from electronic sectors while 28 from the Information and communication sector with the period covering from 2003 to 2012. The study considers both accounting factors at the micro-level such as assets base, capital, debt, and liquidity, and macro-economic factors like GDP and inflation into consideration. The findings showed that Debt and GDP both have a significant impact on debt that reflects negatively, and the GDP reflects a positive relationship with profitability.

Another study examined the factors affecting commercial banks' profitability in Namibia for a period covering from 2001 to 2014 (Sheefeni, 2015). The author used Vector Autoregressive (VAR) analysis on data by using Interest rate, Inflation rate, and GDP as macroeconomic determinants for profitability. The study also employed techniques of unit root, cointegration, and impulse response functions to justify the research model. The results showed that GDP, Interest rate, and inflation rate do not have a major influence on commercial banks' profitability.

This research also applies the least-square model on panel data analysis by using the sample of 17 industrial sector companies listed in the Muscat securities market covering the period from 2006 to 2013 by considering firm size, growth rate, fixed assets ratio, working capital, and financial leverage as profitability determinants (Al-Jafari & Al-Salman, 2015). The findings show a significantly positive relationship between firm size, growth rate and working capital on firm profitability whereas financial leverage has a negative relationship.

The determinants of profitability were derived from 16 firms in the power and energy sector from Pakistan (Zeeshan, Zahid, Faruukh, Nasir, & Ullah, 2016). The author used panel data analysis with a random effect model for a period from 2001 to 2012 including firm size, age, productivity, growth, and leverage as the determinants of profitability. The results show that firm size and productivity are the strongest determinants and have a positive impact on company profitability, on the other hand, firm age and leverage showed a negative impact. The author also mentioned that in the period of crises where productivity showed a low scale but profitability experiencing the increase curve.

The bank profitability was computed in terms of ROA and ROE by considering the bank-level factors such as bank characteristics, industry structure, bank capital, bank productivity, credit risk, and operating efficiency—as well as macroeconomic determinants like inflation, government yield, cyclical output, and economic growth rate (Anthony, 2017). The study used panel data analysis with a sample of 16 global banks from eight different countries covering the period from 1980 to 2015 with 576 observations approximately. The result showed that bank capital and productivity have a positive significant relationship with profitability, whereas credit

risk and operating efficiency impact the profitability on the reduction side and macroeconomic indicators such as inflation and higher economic growth rate spur the firm profitability.

The key determinants of profitability also tested on a sample of 173 Indian listed companies of the manufacturing sector in India under the précrises and post crises period by using the Panel generalized least square method and Panel vector auto-regression model covering from 2000 to 2015 (Swagatika & Ajaya, 2017). The author used ROA and NP as accounting factors with firm size and liquidity. The research is also based on macro-economic factors like exchange rate, interest rate, and leverage. The investigation reflects that liquidity and firm size shows a positive impact on profitability which means that the companies do not have enough liquid resources to invest in other class which can make it positive by making the efficient policies and strategies for effective use of liquid resources. It also concluded that the exchange rate plays a significantly major role in the pre-crisis period whereas, the interest rate has a major role in the post-crisis period.

The main determinants of profitability in 5 Indian companies from the telecom sector listed in the National stock exchange covering the period from 2001 to 2017 (Tasneem, Mohamed, & Jatin, 2018). The study used regression analysis with firm size, growth, tangibility, leverage, and liquidity as the determinants. The results based on panel data analysis and showed that firm size and growth have a direct relationship whereas leverage has an inverse relationship. The author also suggests that tangibility has an indirect insignificant impact on profitability, but growth is an indispensable factor that ensures profitability.

One of the other studies the determinants of profitability on a sample of 12 out of 21 manufacturing firms in Nigeria listed in the Nigerian stock exchange from 2011 to 2015 by using firm size, leverage, productivity, and capital base as main determinants (Ifeduni & Charles, 2018). The author used both fixed and random effects techniques and the results based on panel data regression analysis showed that firm size, productivity, and capital base are a more positive significant impact on profitability which representing in terms of PAT, ROA, and ROE.

The researchers also used the multivariate regression analysis on five manufacturing companies listed in the Ghana stock exchange covering from 2005 to 2015 (Kawdwo, 2018). The author tested leverage, liquidity, firm size, tangibility, interest rate, and some other macro-economic factors as profitability determinants. The results showed that liquidity and firm size have a significantly positive impact on profitability. However, leverage and interest rates have a negative relationship with profitability.

The researchers also examined a sample of 20 banks listed in the Pakistan Stock Exchange covering the period of 14 years starting from 2003 to 2016 by considering interest rate, money supply business risk, credit risk, capital adequacy, and industrial production as macroeconomic determinants of firm profitability (Akram, 2018). The study uses panel data analysis with the ordinary least square (OLS) regression model. Evidence provided by the results showed that industrial production, business risk, credit risk, and capital adequacy have a significantly positive impact on profitability. While the other factors have a negative impact on firm profitability.

A study reveals the impact of macroeconomic variables on a firm's profitability by taking a sample of 22 banks in Azerbaijan for the period covering from the 1st quarter of 2012 to the 1st

quarter of 2017. The study used panel data analysis by considering inflation expectation, oil prices, deposits, liquidity risk, exchange rate, bank size, gearing, and GDP as macroeconomic determinants (Hasanov, Bayramli, & Al-Musehel, 2018).

The firm's profitability in terms of ROA, ROE, and net interest margin (NIM) for more than 60 banks from the Indian banking environment covering the period from 2008 to 2017 (Eissa, Tabish, Farhan, Feroz, & Stephanos, 2019). The study uses panel data analysis by considering bank size, asset management quality, capital adequacy, liquidity, operating efficiency, number of branches, deposit, and leverage areas bank-specific factors on profitability. The study also uses macroeconomic factors such as GDP, inflation rate, and exchange rate in the Indian economy. The results reflect that except for the number of branch locations all bank-specific factors have a positive significant impact on portability and all macroeconomic factors also have a significant impact on profitability but a negative side.

Methodological Framework

Model to explore the determinants of profitability in the manufacturing sector of GCC countries.

$$PAT_{it} = \alpha_0 + \alpha_1 SALES_{it} + \alpha_2 OPE_{it} + \alpha_3 CA_{it} + \alpha_4 FA_{it} + \alpha_5 CL_{it} + \alpha_6 CAB_{it} + \alpha_7 EXR_{it} + \alpha_8 FDI_{it} + \alpha_9 INF_{it} + \alpha_{10} CRPVT_{it} + \mu_{it} \quad (3.1)$$

Model to explore the determinants of profitability in the services sector of GCC countries.

$$PAT_{it} = \beta_0 + \beta_1 SALES_{it} + \beta_2 OPE_{it} + \beta_3 CA_{it} + \beta_4 CL_{it} + \beta_5 LTL_{it} + \beta_6 EXP_{it} + \beta_7 IMP_{it} + \beta_8 WINF_{it} + \beta_9 LFPR_{it} + \beta_{10} CRPVT_{it} + \beta_{11} ED_{it} + \omega_{it} \quad (3.2)$$

Here, PAT is profit after tax of firms in the manufacturing or service sectors, while the description of explanatory variables is given in Appendix A. α_0 and β_0 are the constant terms, α_1 to α_{10} and β_1 to β_{11} are the parameters which need to be estimated. The sign of coefficients will determine the positive or negative effect of the variables used in the model. The μ_{it} and ω_{it} are the error term in each model, respectively. They are assumed to be independently and normally distributed. The data is collected for the period 2013 to 2017 from the GCC countries (Bahrain, Saudi Arabia, Qatar, Oman, the United Arab Emirates, and Kuwait) for 56 firms in manufacturing sector and 51 firms in service sector. This is a balanced panel data with 280 observations of manufacturing sector and 255 observations in the service sector data. The data for internal factors were obtained from the financial statement and financial reports of companies which are available from their websites and some also from the country relevant stock exchange websites, while the data of external factors (macro) were obtained from the regional economic outlook of International Monetary Fund, World Development Indicators of World Bank, and International Financial Statistics of International Monetary Fund.

Estimation of Results: Determinants of Accounting Profit

The first step is to test the unit root in the variable. Since the period of the study (2013–2017) is very short, we will not apply the panel unit root test. It is assumed that all variables are stationary. The next step in the panel data regression calculation is to decide whether to use a fixed-effect model or a random-effect model. The Hausman specification test is used for the selection of a fixed or a random effect model. The null hypothesis of the Hausman test is that the random effect model is appropriate.

TABLE 1
Hausman Test Results

Test Summary	Chi-Square Statistics	Degree of Freedom	Probability
FOR MANUFACTURING	167.468	10	0.000
FOR SERVICES SECTOR	64.074	11	0.000

Source: Authors' estimation

In Table 1 the result of the Hausman test shows that the null hypothesis should be rejected for the model of the manufacturing and services sectors. Thus, the fixed-effect model is appropriate for the calculation of both sectors' models. The calculation results of the fixed-effect model for the manufacturing sector are shown in Table 2.

TABLE 2
Micro and Macroeconomic Determinants of
Profitability in the Manufacturing Sector in GCC Countries

Variable	Coefficient	Std. Error	t-Stat.	Prob.
CONSTANT	-2.317	0.833	-2.782	0.006
SALES	0.118	0.014	8.345	0.000
OPE	0.462	0.106	4.341	0.000
CA	-0.039	0.010	-3.787	0.000
FA	-0.053	0.009	-6.617	0.000
CL	-0.078	0.033	-2.408	0.017
CAB	0.001	0.000	3.588	0.000
EXR	1.023	0.350	2.928	0.004
FDI	-0.001	0.000	-2.996	0.003
INF	0.002	0.001	1.925	0.056
CRPVT	0.001	0.000	2.009	0.046
Adj.-R ²	0.952	F-statistic		86.428
DW Statistic	1.992	Probability (F-stat.)		0.000

Source: Authors' estimation

The calculation results in Table 2 show that a total of 10 internal and external factors explain 95 percent of the variation in profitability of the firms in the manufacturing sector. It is noticeably clear here that the effect of five internal (micro) factors is stronger than five external (macro) factors (Appendix B), on profitability. Among internal (micro) factors, the greatest effect is of OPE, which has a significant positive effect on profitability. The effects of CA, FA, and CL are negative and statistically significant. The SALES variable has a significant positive effect on the profitability of firms in the manufacturing sector. Among external (macro) factors (Appendix B), the EXR has the strongest positive effect on the profitability of the firms in the manufacturing sector. This indicates that a depreciation of the domestic currency against the dollar will increase the profitability of the firms in the manufacturing sector. The effect of FDI is negative and CRPVT and INF are positive on the profitability of the firms in the manufacturing sector. The CAB has a significant positive effect on PAT. This shows that improvement in the current account balance will increase the profitability of the firms in the manufacturing sector in the GCC countries.

The result of the model shows that it is a good fit model as the adjusted R-square is very high (0.95). The model is overall significant as reflected by the value of the F-Statistics (86.428). The model does not have a problem with autocorrelation as the value of Durbin Watson statistics is 1.992. The model can be used for value predictions that closely reflect the actual values.

The results in Table 3 show that five internal (micro) and six external (macro) factors (Appendix B) explain 97 percent variation in the profitability of firms in the services sector. Among internal factors, the effect of SALES is positive and highest, whereas CA has the lowest effect on the profitability of firms in the service sector. The operating expense (OPE) effect along-with current liability (CL) has a significant negative effect on firms' profitability while long-term liabilities (LTL) have a significant positive effect. Among macro-economic factors, export (EXP), world inflation (WINF), and credit to the private sector have a significant positive effect, while imports (IMP) have a significant negative effect on the profitability of firms in service sector. It is found that the effect of labor force participation (LFPR) and external debts (ED) has an insignificant effect on the profitability of firms in the services sector. The explanatory variable power of the model as reflected by an adjusted-R square (0.97) is very high and the value of F-statistics (140.354) shows that the model is overall significant. The value of Durbin Watson statistics (1.809) shows that the model is free from the autocorrelation problem.

TABLE 3
Micro and Macroeconomic Determinants of
Profitability in the Services Sector in GCC Countries

Variable	Coefficient	Std. Error	t-Stat.	Prob.
CONSTANT	-0.389	0.505	-0.769	0.443
SALES	0.334	0.033	10.101	0.000
OPE	-0.231	0.050	-4.625	0.000
CA	0.008	0.004	1.951	0.053
CL	-0.096	0.018	-5.328	0.000
LTL	0.041	0.021	1.991	0.048
EXP	0.001	0.000	4.321	0.001
IMP	-0.002	0.001	-2.487	0.014
WINF	0.006	0.004	1.648	0.101
LFPR	-0.010	0.007	-1.411	0.160
CRPVT	0.002	0.001	1.610	0.109
ED	-0.001	0.001	-0.557	0.578
Adj.-R ²	0.971	F-statistic		140.354
DW Statistic	1.809	Probability (F-stat.)		0.001

Source: Authors' estimation

TABLE 4
Potential of Accounting Profit

Manufacturing Sector		Services Sector	
Country	Potential	Country	Potential
Bahrain	0.948	Bahrain	0.809
Saudi Arabia	1.075	Saudi Arabia	0.769
Qatar	1.089	Qatar	1.067
Oman	0.723	Oman	0.963
UAE	0.797	UAE	0.850
Kuwait	0.459	Kuwait	0.882

Source: Authors' estimation

Table 4 shows the value of profit potential, which is calculated as the ratio of actual profit to estimated profit (obtained from the regression model). If this ratio is greater than 1, it shows the actual profit is more than the estimated profit and the firm has exhausted all profit. If this ratio is less than 1, it means the actual profit is less than the estimated profit, then we expect (based on internal and external factors) that there is a potential for more profit. The value of this ratio is calculated from each firm in the manufacturing and services sectors and the average is

shown in Table 4.4 for each country. Profit is almost exhausted in the manufacturing sector in Saudi Arabia and Qatar. There exists enough profit potential in the manufacturing sector of Bahrain, Oman, the UAE, and Kuwait. The ratio for the service sector shows that Qatar has exhausted profit in this sector, whereas firms in other GCC countries can still increase their profit as there exists enough profit potential.

FUTURE RESEARCH

At this stage, we can set some directions for further research. The current study can be performed on an extended sample of firms, and for a longer period. This study used a single equation model but in future studies, the researchers may use a simultaneous equation model for a greater understanding of the profitability of firms. Finally, there is a lack of research on the profitability of firms in the agricultural sectors. Future studies should also include the agricultural sector in their analysis of profitability.

CONCLUSION

The study was initiated to comprehensively analyze the firms' specific internal (micro) and external (macro) factors that affect the profitability of firms in the manufacturing and services sectors of the GCC countries. The study used balanced panel data of 56 firms in manufacturing and 51 firms in services sector for the period 2013 to 2017. The calculation results of the fixed-effect model for manufacturing and services sectors identified core internal and external factors that explain more than 95 percent variation in the profitability of firms in the manufacturing and services sectors. The most important conclusion of the study is that the effect of internal factors is more on the profitability of firms than external factors. Despite this fact, the external (macro-economic) factors cannot be ignored by the management, while struggling to enhance their profit. The second, conclusion is that the manufacturing firms in Bahrain, Oman, the UAE, and Kuwait need to focus on the determinants of profitability, as there exists enough potential for higher profitability in these countries. The firms in the service sector of Bahrain, Saudi Arabia, Oman, the UAE, and Kuwait need to focus on the internal and external factors of profitability as there exists enough potential for higher profitability in these countries.

REFERENCES

- Akram, A. (2018). *Micro and macro economics detremnants of profitability: The case of bank sector*. Master's Thesis, Capital University of Science and Teechnology, Islamabad, Pakistan. 1-60. Retrieved from <https://thesis.cust.edu.pk/UploadedFiles/Muhammad%20Awais%20Akram%20Thesis.pdf>
- Al-Jafari, M., & Al-Salman, H. (2015). Determinants of profitability: Evidence from industrial companies listed on Muscat securities market. *Review of European Studies*, 7(11), 303-311.
- Anthony, I. (2017). Determinants of Profitability: Empirical evidence from the largest global bank. *Financial Analyst*, 1(11), 1-29.
- Eissa, A.-H., Tabish, M., Farhan, N., Feroz, A.-m., & Stephanos, P. (2019). The determinants of liquidity of Indian listed commercial banks: A panel data approach. *Cogent Economics & Finance*, 7(1), 1-26.

- Fabio, R., & Walter, W. (2010). The impact of economic factors on bank profits. *Monetary Policy & The Economy*, 1(4), 32-48.
- Hasanov, Bayramli, & Al-Musehel. (2018). Bank-specific macroeconomics determinants of bank profitability: Evidence from an oil dependent economy. *International Journal of Financial Studies*, 6(78), 1-21.
- Ifeduni, A. S., & Charles, O. (2018). The determinants of profitability of manufacturing firms in Nigeria. *International Journal of Economics, Commerce and Management*, 16(4), 479-493.
- Ioannis, A., Aristeidis, S., & Theodore, P. (2009). Firm-specific and economy-wide determinants of firm profitability: Greek evidence using panel data. *Emerald Insight Managerial Finance*, 35(11), 930-939.
- Kawdwo, P. (2018). A multivariate analysis of determinants of profitability: Evidence from selected manufacturing companies listed in Ghana stock exchange. *Journal of Accounting, Business and Finance Research*, 2(10), 26-33.
- Khizer, A., Muhammed, A., & Ahmed, Z. (2011). Bank specific and macroeconomic indicators of profitability: Empirical evidence from the commercial. *International Journal of Business and Social Sciences*, 2(6), 235-242.
- Margaret, S. (2004). Competing models of firm profitability. *International Journal of Industrial Organization*, 22(3), 289-308.
- Mark, D. R., & Chaipoopirutana, S. (2014). The impact of micro and macro the environment on profitability of technology companies in Thailand. *International Conference on Business, Law and Corporate Social Responsibility*, 1(2), 153-157.
- Sheefeni, S. J. (2015). The macro determinants of profitability among commercial banks in Namibia. *Journal of Emerging Issues in Economics, Finance and Banking*, 4(1), 1414-1431.
- Swagatika, N., & Ajaya, P. (2017). The determinants of corporate profitability: An investigation of Indian manufacturing firms. *International Journal of Emerging Markets*, 13(1), 66-86.
- Tasneem, K., Mohamed, S., & Jatin, G. (2018). Panel data analysis of profitability detremnants: Evidence from Indian telecom companies. *Theoretical Economic Letters*, 8(15), 3581-3593.
- Tharmalingam, P. (2014). A penal data analysis of profitability determinants: Empirical results from Sri Lankan manufacturing companies. *International Journal of Economics, Commerce and Management*, 2(12), 1-9.
- Yazdanfar. (2013). Profitability determinants among micro-firms: evidence from Swedish data. *International Journal of Mangerial Finance*, 9(2), 151-160.
- Zeeshan, F., Zahid, A., Faruukh, S., Nasir, & Ullah, A. (2016). Determinants of Profitability; Evidence from power and energy sector. *Studia Universitatis Babe-Bolvai Oeconomica*, 61(3), 59-78.

APPENDIX A**Description of Variables: Internal (Micro) Factors**

FACTORS	DESCRIPTION	EXPLANATION
SALES	<i>Sales</i>	Refer to a gross sales revenue of the company generated during the year for the concerned period in million USD.
OE	<i>Operating expenses</i>	It included mainly administrative, selling, distribution, and marketing expenses in a period of concern in million USD.
CA	<i>Current assets</i>	Includes the resources probably used and liquidate within a year or an operating cycle of the company in a million USD.
CL	<i>Current liability</i>	This refers to the obligation supposed to be settled within a year or operating cycle in million USD.
LTL	<i>Long term liability</i>	Refers to the obligation supposed to be settled in a period exceeding from a year or operating cycle time in million USD.
FA	<i>Fixed assets</i>	Includes the resources having useful life more than a year in million USD.
ROA	<i>Return on assets</i>	It is a financial ratio showing the percentage return of profit based on overall resources.
ROE	<i>Return on equity</i>	It is a financial ratio calculated by dividing the net income with the shareholder equity representing in percentage term
PAT	<i>Profit after tax</i>	It is a residual portion of profit after deducting the calculated tax amount in million USD.
SSHER	<i>Sales & shareholder equity</i>	It is a ratio between gross sales and the shareholder equity figure representing in percentage term.

APPENDIX B**Description of Variables: External (Macro) Factors**

EXP	<i>Exports</i>	Export of goods and services in billion USD
IMP	<i>Imports</i>	Imports of goods and services in billion USD
CAB	<i>Current account balance</i>	It is a current account balance in terms of percentage of GDP.
WINF	<i>World inflation</i>	World inflation is the growth of GDP deflator of the United States.
CRPVT	<i>Credit to the private sector</i>	This is a bank credit to the private sector in the percentage of GDP.
LFPR	<i>Labor force participation rate</i>	It is a ratio of the adult population that is participating in the labor force.
ED	<i>External debt</i>	It is public and publicly granted external debt in billion USD
INF	<i>Inflation</i>	It is the inflation rate in percentage
FDI	<i>Foreign direct investment</i>	It is a net inward foreign investment in billion USD.
EXR	<i>Exchange rate</i>	It is the exchange rate of domestic currency with USD.