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*Corresponding author: Ahnaf Ali Alsmady, Accounting Department, "University of Tabuk" Email: aalsmadi@ut.edu.sa

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ACCOUNTING | RESEARCH ARTICLE

Accounting information quality and tax avoidance effect on investment opportunities evidence from Gulf Cooperation Council GCC

Ahnaf Ali Alsmady¹*

Abstract: The motivation of this research is to investigate the important factors that affect Gulf Cooperation Council (GCC) economies and increase the investment opportunities to avoid the threats of limited oil resources in the future. This study examines the relationship between tax avoidance, accounting information quality, and other control variables on investment opportunities in six Arabian GCC countries, namely Bahrain, Oman, Qatar, Saudi Arabia, Kuwait, and the United Arab Emirates (UAE). Moreover, this research investigates whether the accounting information quality affects the tax avoidance investment opportunities relationship. The data sample of the study includes 191 companies over the period of 2011 to 2017 (1337 company-year observations). This study used ordinary least squares (OLS) and moderated multiple regression (MMR) models for direct and moderation effects of accounting information quality, respectively. This study demonstrates that tax avoidance has a significant negative effect on investment opportunities, while the accounting information quality has a significant positive effect on investment opportunities. In line with the agency theory perspective, the high accounting information quality mechanism leads to the control of the managers' opportunist behaviour, mitigates information asymmetry in managers and increases investment opportunities. Moreover, further analysis found that accounting information quality positively moderates the relationship between the tax avoidance and investment opportunities. Thus, higher quality of accounting information is strongly recommended to companies and policymakers, where tax planning is used as an alternative source of cash to achieve higher investment opportunities in GCC countries.

Subjects: Accounting; Taxation; Corporate Finance; Organizational Studies

Keywords: Tax avoidance; accounting information quality; investment opportunities; Gulf Cooperation Council (GCC)

1. Introduction

Investments play an important role in the economic growth of developed and developing countries. Recently, the contribution of investments to the economy and the issue of economic diversification have been a serious issue in the developed and developing countries due to market fluctuations (Kabbani & MimouneSunday, 2021). It has also impacted the Gulf Cooperation Council (GCC) countries, which represent an important part of world economy, as their GDP is estimated around total \$3.655 trillion in 2018. However, the World Bank (2019) stated that the real GDP growth of the GCC economies recently weakened, estimated a drop to .08% (2019) from 2%





(2018). Moreover, the GCC countries currently are more concerned about the market and economic stability as the expectation of oil and gas reserves will eventually run out (Kabbani & MimouneSunday, 2021). In this regard, Bahrain and Oman are in a more precarious position with the problem, compared to other GCC countries. Thus, the GCC countries have been tapping into more than \$7 trillion investment in financial assets and different types of investment such sovereign wealth funds for economic future stability. Unfortunately, before the COVID-19 pandemic, the International Monetary Fund (IMF) stated "Unless GCC countries undertake substantial fiscal and economic reforms, they will deplete their conserved wealth by 2034" (Kabbani & MimouneSunday, 2021, p. 5). Thus, the openness to more investment opportunities represents the primary driver of economic growth and stability. Moreover, Callen et al. (2014) examined the diversification policies in the GCC region. The study highlighted that GCC countries should be more concerned of the favourable business environment so as to create higher investment opportunities. This requires further investigation on the factors that may have an effect on investment opportunities and also the importance to improve the economic growth and productivity (Biddle & Hilary, 2006), in the GCC region.

In this regard, several studies supported the argument that higher accounting information auality helps the managers and investors to identify better investment opportunities (Biddle & Hilary, 2006; Biddle et al., 2009b; Chen et al., 2011). The main objective of accounting information is to help the users of financial reporting to make an accurate decision and better investment. According to Zhai and Wang (2016), accounting information quality is strongly associated with investment choice. Both earning attributes and the company's stock price were utilized in the earlier research as a proxy for the quality of accounting information. The first one is more widely used in inefficient markets (Zhai & Wang, 2016), such as the GCC nations, and is used in the current study. The proxy measures the manipulation of accounting numbers of past, present, and future cash flow transactions over time in the accrual profit (De Meyere et al., 2018). Thus, managers could utilize the accruals quality and the effects on investment opportunities. Moreover, high demand for information in dynamic markets such as the GCC market has required high investors' protection, which is higher than the quality of accounting information provided. In the context of agency relation, the theory explained the existence of information asymmetric among stakeholders. Hence, Jensen and Meckling (1976a) developed a framework of moral hazard that explains the conflict of shareholders interest and lack of monitoring mechanisms over the managers, which leads them to use the information for maximising their welfare.

Moreover, capital suppliers are more risk-concerned, where weak accounting information and higher asymmetry will lead to the rejection of some projects and lose more investment opportunities (Cutillas Gomariz & Sánchez Ballesta, 2014a; De Meyere et al., 2018; Siregar & Nuryanah, 2019). In this regard, substantial studies have argued that the accounting information quality can reduce the information asymmetry in the companies agency relation (Bhattacharya et al., 2008, 2012; Brown & Hillegeist, 2007; De Meyere et al., 2018; Rad et al., 2016; Roudaki et al., 2016) and thus control the managers and help investors to make adequate decision through the positive impact on investment opportunities. One research stream supports the argument (Chan et al., 2009; Cutillas Gomariz & Sánchez Ballesta, 2014a; McNichols & Stubben, 2008), in which the quality of accounting information helps managers in the companies to make better investment opportunities. Thus, the higher accounting information quality may mitigate the adverse investment selection, which in turn is able to identify better investment opportunities (Elaoud & Jarboui, 2017). Several studies such as Aulia & Siregar (2018), Cutillas Gomariz & Sánchez Ballesta (2014a) and Liu (2019) investigate the effects of financial reporting quality on investment and found that the financial reporting quality is a good governance mechanism that controls the information asymmetry and managers' opportunistic behaviour, which positively affects investments in some circumstances. In addition, Hutagaol-Martowidjojo et al. (2019) examined the earning quality measured by accruals and market value in Indonesian listed firms. The study found that despite the moves towards a higher quality of financial reporting standards, the times series analysis reveals that the quality of accounting information decreases. Also, Cho and Kang (2019) study the effects of accounting information quality on investment efficiency in the Korean Stock Exchange and the results indicated positive and strong association on investment choice.

Another factor that creates agency problem is tax avoidance, and it has been argued by many academic researchers. The general definition of tax avoidance has not been accepted yet due to multifaceted and different perception (Hanlon & Heitzman, 2010). Most academic research uses different concepts such as tax activities, tax sheltering, tax planning and tax aggressiveness to explain the meaning of tax avoidance. In this study, tax avoidance is suggested as any activities or planning to minimise tax liabilities in the companies. So, companies use these activities. Thus, companies with more cash have higher investment opportunities. So, tax avoidance is an important issue that may affect investment opportunities. One of this study's objectives is to investigate tax avoidance's effects on companies' investment opportunities, as there is not enough research in emerging market such as GCC countries.

The entities of tax collection in all countries require companies and individuals to pay taxes in order to return benefits to society. The increase in taxes payments, financing cost, and companies that need cash flows for investments tends to avoid taxes. The perception about the tax planning is shifting from the government tax authority to the firms' shareholders. In order to plan for tax, the companies shift the return to the next period or minimise earnings by increasing the expenses in legal and illegal ways. In this regard, Chen et al. (2011) stated that increasing the quality of accounting information plays an important role in decreasing the companies' incentives to minimise earnings for tax purposes. The GCC countries have a dynamic market that needs higher and predictable information to attract more investment. The tax issues in these regions have strong argument about using the tax as an alternative resource of oil. In this regard, Oliver Whman (2019) stated that executive summary motivates the government to raise taxation from individuals and businesses. The argument is when the governments need to increase tax cash collection, and the firms try to use tax planning as internal resources for cash, which also lowers the cost of financing. Using a huge sample from 46 countries, with 42,107 firms, Tang (2019) confirmed that tax avoidance affects positively and increases the companies value and accordingly, increases investment opportunities, where it places a good governance mechanism in the companies. In this regard, the shareholders require managers to prudently diversify investments, which is important to achieve the firms' strategic objective. Therefore, managers need funds to make good investments. However, the cost of external fund is higher than internal funding, which leads firms to use an alternative strategy such as tax planning (Robinson et al., 2010). Edwards et al. (2015) argued that tax avoidance is an internal source of cash for the firms to help managers make worthy investment. Moreover, the imperfect market due to the agency problem and higher information asymmetry prevents the allocation of resources according to managers' decisions (Jensen, 1996; Jensen & Meckling, 1998). Thus, managers may invest in cash to avoid taxes in nonviable and unvalued investment projects, in the absence of control mechanisms (Shleifer & Vishny, 1997). Therefore, the managers sharking behaviour and self-serving will increase, where the weak governance mechanism (Shleifer & Vishny, 1997) in turn uses the cash inefficiently and affects firms investment opportunities negatively (Asiri et al., 2020a; Bailing & Rui, 2018). In this regard, Khurana et al. (2018b) confirm that the cash tax avoidance will not increase the firms' value without strong governance mechanisms, and this is measured by managerial entrenchment E-Index and anti-takeover protection G-Index, which show that it will not have a positive effect on firms investment opportunities. Moreover, Bailing and Rui (2018) suggested that a high level of tax avoidance leads to higher cash flow to managers and they will try to maximise their own interest, which then would negatively affect firms investment.

Also, Zhai and Wang (2016) and Nan and Wen (2014) argued that the accounting information quality is an important governance mechanism that helps optimize investment choices particularly in a poor governance environment. Thus, a high quality of accounting information can act as

a moderating mechanism, where information asymmetry exists (Myers & Majluf, 1984b). Richardson (2006b, p. 159) in his study provided evidence suggesting that "certain governance structures, such as the presence of activist shareholders, appear to mitigate over investment". Thus, this study is conducted based on Elaoud & Jarboui (2017) argument, which expected a governance mechanism such as accounting information quality to play an important moderating role in controlling managers' behaviour, and thus, tax avoidance will positively affect firms' investment opportunities.

This paper contributes to the existing literature in many-dimensions and GCC market policy reform. First, the study has a multinational sample of GCC countries that plays an important role in the Arab countries and in the world economy. Second, the study examines an important governance mechanism, namely, accounting information guality that mitigates the information asymmetry problem of agency theory in GCC countries' settings. Previous studies in the GCC region have investigated several issues such as the effect of culture on financial reporting quality (Baatwah et al., 2021), accounting information effect on firms value (El-Diftar & Elkalla, 2019), and state of corporate governance (Abdallah, 2008; Baydoun et al., 2012). However, none of these studies have examined the effects of accounting information quality on investment opportunities. In addition, tax revenue has been strongly debated in GCC countries in terms of its advantages and disadvantages. Previous studies in GCC countries argue (i) the effects of the tax system as ways of sustaining economic growth (Ezenagu, 2021), (ii) the effects of IFRs' adoption on tax avoidance (Hassan, 2020) and (iii) the impact of economic and financial factors on tax revenue (Basheer & Hassan, 2018). However, the effects of tax avoidance on investment opportunities have not been investigated in the GCC region, which this study will contribute to the body of literature. Moreover, this study examines the moderating effects of accounting information quality between tax avoidance and investment opportunities.

Along these lines, the present study fills the gaps in accounting and corporate governance research by meeting the following objectives;

- Investigating the impacts of accounting information quality on GCC countries investment opportunities.
- Investigating the impacts of tax avoidance on investment opportunities.
- Identifying the moderating role of accounting information quality between tax avoidance and investment opportunities in GCC countries.

Thus, the current study used a sample that covers seven-year period from 2011 to 2017 of six Arabian GCC countries, namely, Bahrain, Oman, Qatar, Saudi Arabia, Kuwait, and the United Arab Emirates (UAE). The result of this study confirms the positive and significant effect of accounting information quality on GCC companies investment opportunities. On the other hand, tax planning negatively affects GCC companies investment opportunities. However, the interaction of accounting information quality on the tax planning and investment opportunities changes the direct effect from negative to positive. Thus, the accounting information quality plays a complementary role as it acts as a good governance mechanism in mitigating the inefficient resources allocation in the companies.

Therefore, the study's results benefit several parties and have implications to the policymakers and top management in the GCC companies. First, the study confirms the positive effect of accounting information quality in GCC companies investment opportunities. This will help the user of financial reports to make better investment decisions. Also, this will help the countries to improve the GDP and recover the weakened growth. Moreover, it is highly recommended for the companies to adopt higher accounting information quality standards, which give higher confidence and lower risks for the inside and outside investors to provide higher cash for investments in the region. In addition, the study results confirm that tax avoidance has negative effects on investment opportunities. This result will motivate government tax agencies to improve the tax regulations and penalties, therefore, leading companies to comply better with tax laws and pay their tax liabilities. In addition, the results confirm that accounting information quality plays a positive moderating role between tax avoidance and investment opportunities. Thus, when companies have good disclosures about tax planning and cash savings, it will be used for better investments. This gives an indication that companies' managers have good planning for companies' future. Finally, the earnings power of the companies is a good indicator for investors, as the study's results confirmed to have a positive and significant effect on investment opportunities.

The remainder of this paper proceeds as follows: the next section is the literature review and hypotheses development. Section 3 describes the research design, which includes the study models, sample of the study and the variables measurements. In section 4, the results of the study are discussed. In section 5, the discussion of empirical findings is given. Finally, Section 6 presents the conclusions and recommendation for future research.

2. Literature review and hypotheses development

The agency theory explains the relationship between the agent (managers) and principle (shareholders), affected by many factors such as information asymmetry and managers sharking behaviour. In addition, the different needs by the agent and shareholders contribute towards higher conflicts. Moreover, insider information leads to information asymmetry problem, as managers use this information to maximise their wealth (Jensen & Meckling, 1976b). Desai and Dharmapala (2006) argued that the managers use the inside complex organisation transaction to implement tax avoidance activities. Thus, it helps managers to transfer the companies benefits and using the resources to increase their wealth. Moreover, the information asymmetry helps managers to hide the gain and to be engaged in more tax avoidance.

Additionally, the companies' managers avoid tax to increase the cash flow resources as well as to enhance the companies' activities. However, previous studies examined the cost and benefits of reducing the tax rate. According to the pecking order theory, there is no optimal level of cash and the cash resources function as higher return is optioning (Asiri et al., 2020a). Thus, the companies need the cash even if they have external fund resources. In this regard, internal cash generated by tax avoidance activities is considered as lower cost than external fund. Edwards et al. (2016) provided evidence that the firms that face market constraint will use the internal recourse (tax avoidance) to support investment projects. Moreover, Jensen (1986) stated that cash generated from tax avoidance and the self-serving behaviour of the managers may lead to negative effects of tax avoidance on investment opportunities, where the investment decision is an advantage to them. Thus, the absence of good governance or accounting information quality that reduces information asymmetry and helps to better allocation of cash resources will result in a negative effect of tax avoidance activities on investment opportunities. Qingyuan and Lumeng (2018) and Ansar Majeed and Yan (2019) supported that accounting information quality can reduce the risk of information processing, which helps the information user to gain an advantage of good investment opportunities.

Therefore, this section reviews the previous studies that argued about the importance of accounting information quality in terms of mitigating the information asymmetry between the investors and management in the companies (Asiri et al., 2020a). Moreover, this section argues the effects of tax avoidance that shows a negative effect on investment opportunities as to have less attention in the academic research. Finally, this research fills the gap in the previous research by investigating the moderating effects of the accounting information quality on the tax and investment opportunities relationship in key economics of the GCC countries.

2.1. Accounting information quality and investment opportunity

The accounting information quality concept has been largely argued in previous studies. Many researchers argued the role of accounting information quality in reducing the information asymmetry problem between inside and outside information users (Myers & Majluf, 1984a; Ebrahimi et al., 2020; Kao & Wei, 2014; Vaez et al., 2021; Wang, 2017). Zhai and Wang (2016) argued that the accounting information quality plays a good governance function that can help information users in different ways.

First, the accounting information quality mitigates the information asymmetry between insider and outsider (Azar et al., 2019; Barth et al., 2022). Moreover, the accounting information quality helps in monitoring the opportunistic managers' behaviour. The higher the quality of accounting information, the higher the growth of opportunities to new investment (Cho & Kang, 2019). In this regard, Cho and Kang (2019) investigated whether the accounting information guality mitigates the inefficient investment in Korean listed companies and the results confirm that higher (lower) level of accounting information quality leads to better (worse) investment decisions. Also, Siyanbola et al. (2019) investigated the relationship between the accounting information and investment decisions of Nigerian listed firms, and the results confirm that the accounting information helps the investors in making wise decisions. This results in better resource allocation and lower cost of capital when the firms require more cash. Biddle et al. (2009a) supported that the higher quality of accounting information stops the agent (managers) from taking over the companies benefits and discourages the inefficient investment. In this regard, Chen et al. (2011) supported that the quality of accounting information is positively related to investment opportunities. On the other hand, they found an inverse relation in emerging markets, where lower-quality accounting information would be less effective in mitigating ineffective investment decisions.

Several studies have highlighted the accounting information in GCC countries, such as qualitative characteristics of accounting information in bank sectors of GCC countries (Alnodel, 2018; Desoky & Mousa, 2014; El-Diftar & Elkalla, 2019; Elsiddig Ahmed, 2020; Mousa & Desoky, 2014), value relevance of accounting information (IFRs adoption) in Middle East and North Africa region and GCC countries, accounting information, and companies performance (Alsulmani et al., 2021). Moreover, Assad and Alshurideh (2020) examined the accounting information and investment efficiency, the moderating role of audit quality in that relationship in GCC countries, and supported the positive effects of accounting information quality on investment efficacy. Hence, there are no inconclusive results on the effects of accounting information quality on GCC investment opportunities and we proposed the following hypothesis;

 H_1 : There is a significant relationship between accounting information quality and investment opportunity in GCC countries.

2.2. Tax avoidance and investment opportunity

The investment opportunities are one of the most important decisions that managers desire to help the companies to achieve their objective (Asiri et al., 2020a). Moreover, the shareholders appoint the managers to increase the companies' value and maximise the profit. In this regard, Graham et al. (2014) stated that tax avoidance increases cash saving, which may have an effect on the companies' ability to achieve the objectives.

There is one perspective, when tax avoidance increases cash for company managers, it helps them to take advantage of good investment opportunities (Robinson et al., 2010). However, there is a problem in which companies' managers do not know the optimal level of cash flow available (Asiri et al., 2020a). Moreover, the imperfect market (information asymmetry) and the agency problem inside the companies lead managers to have greater freedom to practice an opportunist behaviour (Shleifer & Vishny, 1997). Thus, managers with more cash saving as a form of the tax

avoidance activity may invest in an inefficient investment and negatively affect investment opportunities (Harvey et al., 2004). Moreover, Crocker and Slemrod (2005) argued that some managers will not involve in any investment decision when the cash flow comes from tax avoidance activities. Also, Khurana et al. (2018a) examined the relationship between corporate tax avoidance and efficient investment in US companies. The research reveals managers' capacity to make wise investments with adhering to good governance practices. Taylor et al. (2019) examined the labor investment and corporate tax avoidance using a large sample of U.S firms, and the results confirmed a negative association.

Previous studies argued that tax avoidance leads to an increase in the information asymmetry between the investors and the corporate insider stakeholders (Hang & Kangtao, 2013). In this regard, Hang and Kangtao (2013) investigated the effects of tax avoidance on Chinese listed companies and confirms its negative effect on investment efficiency. In addition, Asiri et al. (2020a) examined the direct effect of tax avoidance on investment efficiency and the mediation effect relationship by the financial statement readability and comparability on that relation. The study confirms that the tax avoidance has a positive effect on investment inefficiency. Also, Bailing and Rui (2018) examined the effects of a company's tax avoidance on investment efficiency and confirms that it leads to higher investment cash flow sensitivity and leads to overinvest in Shanghai listed firms.

Opler et al. (1999) investigated the implications of cash holdings in U.S. firms based on the trade-off model and found that firms with greater investment opportunities hold higher and riskier cash flow. Meanwhile, Richardson (2006a) examined the free cash flow on over-investment using an accounting-based framework. The study supports the agency theory argument in which the over-investment problem is associated with higher cash flow. Moreover, the study suggested that governance function on the companies can mitigate inefficient investment. Also, other researchers did not find any association between the tax avoidance and investment opportunities (Blaylock, 2015). Khurana et al. (2018b) supported that tax avoidance exacerbates agency problems and greater cash increases managerial ability and negatively affects investment opportunities. In conclusion, there are no conclusive results about the effects of tax avoidance on investment opportunities, so we propose the following hypothesis:

 \mathbf{H}_2 : There is a significant relationship between tax avoidance and investment opportunity in GCC countries.

2.3. Accounting information quality, tax avoidance, and investment opportunity

On the one hand, previous studies argued the effect of tax avoidance activities on investment opportunities (Asiri et al., 2020a, 2020a; Graham et al., 2014, 2014; Hang & Kangtao, 2013, 2013; Harvey et al., 2004, 2004; Robinson et al., 2010, 2010). On the other hand, previous studies argued that the accounting information quality could affect investment opportunities (Ebrahimi et al., 2020, 2020; Kao & Wei, 2014, 2014; Myers & Majluf, 1984a, 1984a; Vaez et al., 2021, 2021; Wang, 2017, 2017). It is interesting to investigate the moderating effects of accounting information quality on tax avoidance and investment opportunities relationship and markets that have a higher percentage of world economy such as GCC countries.

In this regard, Asiri et al. (2020a) argued that the direct effects of financial statement readability and comparability are positively significant on investment efficiency. Moreover, the study supported that financial statement readability and comparability play a moderating role between the tax avoidance activities and investment efficiency. Moreover, Hang and Kangtao (2013) found negative effects of tax avoidance on investment opportunities and suggested for future research to investigate the effects of governance function on that relationship. Another study by Ha and Feng (2020) also supported the result that the financial reporting quality plays an important role in tax avoidance and investment opportunities relation. They argue that higher quality of information mitigates the negative effects of tax avoidance on the overinvestment relationship. Also, Khurana et al. (2018b) investigate the role of governance function in the tax avoidance and overinvestment relationship. The study found that stronger governance function in companies can increase the investment efficiency, even though the companies are involved in tax avoidance activities as their internal sources of cash. Thus, the accounting information quality may mitigate the negative effect of tax avoidance on investment opportunities. So, we propose the following hypothesis:

 H_3 : Accounting information quality affects the relationship between tax avoidance and investment opportunities in GCC countries.



The following theoretical framework diagram, therefore, summarizes the previous argument.

3. Research methodology and design

3.1. Sample selection and data source

The study initially targeted the population of all companies listed in GCC countries, which include Bahrain, Oman, Qatar, Saudi Arabia, Kuwait, and the United Arab Emirates (UAE). However, the data collection obtained from the "Gulf base" database and the companies' websites before the COVID-19 pandemic started have a limitation of data consideration. The study covers the sevenyear period from 2011 to 2017, which comes with a balanced structure data of 1337 firm-year observations from 191 companies, which is acceptable based on the rule of thumb for running regression modelling. Banks are excluded because they are subject to different regulations and disclosure standards in those countries. In addition, bankrupt companies in the stock markets are also excluded. Multiple factors necessitate the inclusion of those years' data in the analysis. First, a finding that can be applied to a wider population can be obtained after seven years. The data set after 2017 is distinct from the one before because of different disclosure laws in the dynamic market, such as in the GCC countries. COVID-19's market slump will also significantly impact the company's investment opportunities beyond 2017. The sample covers many industries and services sectors as stated in Table 1.

The study examines fundamental variables such as accounting information quality proxy, tax avoidance and investment opportunities, which is explained in the next subsection. Moreover, the study is not able to use other measurements for those variables that have been used in the previous studies, because the data disclosure in the "Gulf base" database and the companies' websites is not available.

Table 1 shows the sample from KSA and UAE countries, 36% and 13%, respectively. On the other hand, the lowest sample cover is BAH and KUW countries with 4.7%, accordingly. This is due to less

Table 1. San	aple Distributi	on									
Country/ Sample	CONSD (1)	CONSS (2)	ENERG (3)	HEALT (4)	INDUS (5)	INFOR (6)	MATER (7)	TELEC (8)	UTILI (9)	Total Obs. (companies)	Percentage
UAE	21	28	7	14	63	0	21	14	7	175 (25)	%13
ВАН	28	14	0	0	7	0	7	7	0	63 (9)	%4.7
KSA	91	70	28	14	63	0	182	21	14	483 (69)	%36
KUW	7	0	0	0	21	7	28	0	0	63 (9)	%4.7
OMN	70	119	28	7	91	7	98	7	28	455 (65)	%34
QAT	0	7	21	7	28	0	21	7	7	98 (14)	%7.3
Total subsample	217 (31)	238 (34)	84 (12)	42 (6)	273 (39)	14 (2)	357 (51)	56 (8)	56 (8)	1337 (191)	%100
Percentage	%16	%17	%6.2	%3.1	%20	%1	%26	%4.1	%4.1	%100	191 companies
CONSD includes investment, hos flour mills, dete reinsurance, dril finance, constru voltage power c maintenance, re	is hotels, diversified pitality, automoti regent, refreshmer lling and associat rction and landsc ables, power tran spart, fefitting, an	da retail and dist ive services comp nt, agricultural, c ed services, helic apes, courier an ismission line cor d conversion of	ribution, develop vany, luxury produ and mineral wate copter transporta d package delive nductors and buil	ment of cinema Lacts, marketing, c er. ENERG consist tion services and ery, warehousing ding wires, port encidan vessels", c	media, adverti- and retail. CONSS ts of petroleum p I catering service , automotive dist services, engineet eeramic and gres tervice and gres	ing, duty free, le includes several roducts; gas, fu s, and renaissan ribution, cerami ring, assembly, c ing, assembly, c	isure, education, types of compani el, oil, refining & r ce productions pro c tiles, abrasives ables, transportat and floor tiles, ra	tourism, air con es such as food, betrochemical, si jects. INDUS co manufacturing, ion, printing and ion, printing and	ditioning and hc fish farming, fish nipping services nsists of aviation real estate, pow packaging, com re, maritime, vi	Ime appliances d neries cattle feed, for crude oil; and n, air services, avio er generation, me truction, developi trified clay pipe. 1	wice, industrial poultry, biscuit, insurance and rition lease and nufacturers of nent, "building, NFOR includes

automated systems, fibre optic. MATER includes manufacturing of building materials, building materials, aluminium, cement, petrochemical, leading producer and trader of aggregates, steel products, construction materials industries and contracting, real estate, chemicals, gases, aluminium products, mining, wire factories, filling & packing materials manufacturing, metal manufacturing and casting, glass industries, paper manufacturing. TELEC is telecommunications. UTILI includes electricity and water, industrial services, and energy.

Table 2. Variables and	Measurements		
Variable	Symbol	Measurement	
Panel A: Dependent Varial	ble		
Investment opportunities	INVOPP	(Total assets + market valu equity)/ total assets.	e of equity*—book value of
	* Market value of equity =	No. of Outstanding shares ×	Price per share.
Panel B: Independent and	Moderator		
Accounting information quality	AIQ	** the absolute value of th $CFO_{i,t-1} + \gamma_2 * CFO_{i,t} + \gamma_3 * C$ $+\gamma_4 * \Delta Sales_{i,t} + \gamma_5 * PPE_{i,t} +$	e model $\Delta WC_{i,t} = \gamma_0 + \gamma_1 * FO_{i,t+1} \\ \epsilon_{i,t,}$
Tax avoidance	ΤΑΧ	Cash tax paid to operating	cash flow.
Control Variables			
Earning power	EAROW	Earnings Power $=$ $Operating incomposed in Comparison of the composed of t$	me
Natural logarithm of total assets	LOG(ASS)	Natural Logarithm of total	assets.
Market value of equity	MEQ	No. Outstanding shares × F	Price per share.
Change in return of assets	$\Delta CHROA_{i,t-1}$	The change in return of as	sets from t to t-1.
Change in return of assets	$\Delta CHROA_{i,t-2}$	The change in return of as	sets from t to t-2.
Standard deviation of revenue	STRV _{i,t}	Standard deviation of reverse respectively.	nue for firm and year i,t,

* means the market value of equity = No. of outstanding shares × price per share. ** the absolute value of the of the accounting information quality proxy model; $\Delta WC_{i,t} = \gamma_0 + \gamma_1 * CFO_{i,t-1} + \gamma_2 * CFO_{i,t} + \gamma_3 * CFO_{i,t+1} + \gamma_4 * \Delta Sales_{i,t} + \gamma_5 * PPE_{i,t} + \varepsilon_{i,t}$, Where $\Delta WC_{i,t}$ is the change in non-cash working capital from the year t - 1 to year t, the CFO represents the cash flow of company in t-1, t, t + 1 years, respectively. $\Delta Sales_{i,t}$ means the change in company sales from t to t-1. $PPE_{i,t}$ means the gross book value of property plant and equipment. ε_{it} , the error term of company i, and year t.

disclosure data of the fundamental variables under study in those countries. Moreover, the highest industries covered in the study are **MATER**¹ and **INDUS**² with 26% and 20%, respectively.

3.2. Empirical models and variable definitions

The study applies different models to validate the study objectives. The study uses panel data ordinary least squares with a correlated random effect as suggested by the Hausman Test, as shown in the following regression model Equation 1. It examines the effects of accounting information quality (H_1) and tax planning (H_2) on GCC investment opportunities:

$$INVOPP_{i,t} = \beta_0 + \beta_1 TAX_{i,t} + \beta_2 AIQ_{i,t} + \beta_3 EAROW_{i,t} + \beta_4 LOG(ASS)_{i,t} + \beta_5 MEQ_{i,t} + \beta_6 CHROA_{i,t-1} + \beta_7 CHROA_{i,t-2} + \beta_8 STRV_{i,t} + \varepsilon_{i,t,\dots}$$
(1)

The study applies the moderated multiple regression (MMR) model to investigate the moderation role of accounting information quality between the tax avoidance and investment opportunities of GCC companies. An adjustment is made to the regression model in Equation.1 by inserting $(TAX_{it} * AIQ_{it})$ to Equation 2. This model is developed to test the moderating effects of accounting information quality, whether it plays a substitute or complementary role of corporate governance mechanisms in affecting the GCC investment opportunities. Thus, Equation 2 is made as follows:

$$INVOPP_{i,t} = \beta_0 + \beta_1 TAX_{i,t} + \beta_2 AIQ_{i,t} + \beta_3 (AIQ_{i,t} * TAX_{i,t}) + \beta_4 EAROW_{i,t} + \beta_5 LOG(ASS)_{i,t} + \beta_6 MEQ_{i,t} + \beta_7 \Delta CHROA_{i,t-1} + \beta_8 \Delta CHROA_{i,t-2} + \beta_9 STRV_{i,t} + \varepsilon_{i,t,...,t}$$
(2)

The panel data analysis is more appropriate for the examination for several reasons. In the first place, the current study sample contains observations with both times (years) and cross-sections (companies), which provide more information on variables included in the models, resulting in more accurate estimates. Second, panel data permit the use of an empirical approach for testing several hypotheses. Unobserved heterogeneity that fluctuates across individuals but not over time and omitted variable bias is accounted for by the models used in panel data analysis. The symbols and measurement of each independent and dependent variables used in the above models are given in Table 2.

3.3. Dependent variable (investment opportunities)

The investment opportunities are the dependent variable set in Equation 1 and Equation 2, measured by the market to book value of assets proxy, which has been used in previous studies (Abdeljawad et al., 2020; Gaver & Gaver, 1993; Kole, 1991). Several studies measured the investment opportunities by the book value to total firms' value that has significant measurement error due to historical cost of long-lived assets and error where highly levered companies use the firms value (Abdeljawad et al., 2020; Gaver & Gaver, 1993; Kole, 1991). Another related measurement of investment opportunities used by Chung and Charoenwong (1991) is the ratio of the market value of equity to the book value of equity. This ratio presents the investment opportunities facing the companies, where t the market value is subtracted from the book value of equity. Moreover, the ratio of market to book value equity ratio depends on companies return on its assets and the value over the company's expected return on equity. Myers (1977) supported that the ratio captures growth opportunities by comparing the difference between the market value of the company with its existing assets. Therefore, we use the *INVOPP*= (total assets + market value of equity—book value of equity)/total assets to calculate and measure the investment opportunities. The market value of equity was calculated as No. of outstanding shares × price per share.

3.4. Accounting information quality, tax avoidance, and earning power

First, the accounting information quality represents an independent variable in Equation1 and moderating variable in Equation 2. By following the previous studies (Dechow & Dichev, 2002; Dichev & Dechow, 2001; Ding et al., 2016; Francis et al., 2005; De Meyere et al., 2018; Zhai & Wang, 2016) and in the following proxy, we measure the accounting information guality (*AIQ*) as follows:

 $\Delta WC_{i,t} = \gamma_0 + \gamma_1 * CFO_{i,t-1} + \gamma_2 * CFO_{i,t} + \gamma_3 * CFO_{i,t+1} + \gamma_4 * \Delta Sales_{i,t} + \gamma_5 * PPE_{i,t} + \varepsilon_{i,t,t}$

According to Francis et al. (2005), the fitted value of the model (standard deviation of the residuals in year t) times minus one represents the accounting information quality. The interpretation of the model output means the higher the values of the model, the higher the accounting information quality in the GCC companies. This model was originally proposed by Dechow and Dichev (2002) and extended by McNichols (2002), where $\Delta WC_{i,t}$ is the change in non-cash working capital from the year t - 1 to year t (De Meyere et al., 2018). $CFO_{i,t-1}$, $CFO_{i,t}$ and $CFO_{i,t+1}$ represent the cash flow from operations in years t-1,t and t + 1, respectively (Dechow & Dichev, 2002; Ding et al., 2016; Francis et al., 2005; De Meyere et al., 2018). $\Delta Sales_{i,t}$ is the change in net sales in year t compared to year t-1 (McNichols, 2002; De Meyere et al., 2018). Finally, $PPE_{i,t}$ is the gross value of property plant and equipment (De Meyere et al., 2018). Moreover, to avoid the heteroscedasticity problem, all variables in the model are scaled by the average total assets of year t and winsorized at the 1st and 99th percentiles (Francis et al., 2005).

Second, tax avoidance is an independent variable in Equations 1 and 2. Tax avoidance has various measures in the previous literature that need careful ways in identifying the concept of definition and measurement according to the study objective (Aronmwan & Okafor, 2019). According to Hanlon and Heitzman (2010), there is not an accepted and generalisable definition for tax avoidance due to different natures and perceptions of the concept. The companies applied the accrual bases to measure the companies' financial events. The accrual basis recognises the

revenue when it is earned and the expenses when it has occurred. Cash basis, on the other hand, recognises revenues and expenses when cash is received and cash is paid, respectively.

In this regard, the tax avoidance measures are built based on those two bases. Hence, accounting ETR (Effective Tax Rate) measures are calculated by dividing the tax expense during the year it has occurred by the pre-tax accounting income (Hanlon & Heitzman, 2010). The limitation of this measurement is a reflection for both current and deferred taxes. On the other hand, the current ETR is measured by dividing the current tax expenses in the current year (cash basis) by pre-tax income in the income statement (accrual basis). The numerator has different bases than denominator, which creates several limitations: first is the inability to capture the long-term tax avoidance intended by the companies (Salihu et al., 2015); the second is the numerator, which is calculated on an annual basis and the denominator by yearly volatility (Salihu et al., 2015). This measure may understate the tax avoidance by the firms because most companies try to benefit from deduction elements according to the tax law of their countries. Then, they calculate the accounting income, the ratio's denominator. Hence, this deduction has unreliable information because the tax authority may accept or reject. Therefore, the rejected elements lead to an increase in the denominator, resulting in lower current ETR (Aronmwan & Okafor, 2019). Thus, we measure the tax avoidance (TAX) in this study by dividing the cash tax paid by the company through operating cash flows, which has been used in the previous literature (Aronmwan & Okafor, 2019; Hanlon & Heitzman, 2010; Salihu et al., 2015, 2013). This measure avoids the limitations on the above, which measures the actual tax avoided and deferral tax strategies (Lee et al., 2015). Moreover, it matches the basis between the numerator and denominator (Hanlon & Heitzman, 2010; Salihu et al., 2013).

Third is the earnings power-independent variable in Equations 1, and 2. The earnings power gives investors an indication of the company's investment activities and the expected returns on their invested resources (Fatma & Hidayat, 2019b). The earnings power (*EAROW*) measurement in this study divides operating income by total assets. The earnings power also plays an important role in assessment decisions such as investment and tax planning. Moreover, the earnings power adequately demonstrates the ability of companies to use the assets to increase the operating income and companies' investment opportunities in the future.

3.5. Control variables

The study uses several control variables in the above models that can influence the association between the accounting information quality, tax avoidance, and GCC companies investment opportunities. Accordingly, based on previous studies, Equations 1 and 2 include the following control variables. First, earnings power (*EAROW*) is measured by the operating income divided by the total assets of the companies. Previous studies argued that firms profit level is an important effect on investment opportunities in the future (Jin, 2017; Yao et al., 2017). In this regard, Fatma and Hidayat (2019a) argued that earnings power as a proxy of measuring earnings persistence and earnings component has current and future orientation regarding assessment and investment decision-making. High operating income in firms is an internal resource that helps managers to make investments. In addition, for external users of financial reports, especially those who are looking for earnings stability, the earnings power analysis is definitely a spotlight for them (Fatma & Hidayat, 2019a) that could attract more investors and help firms to get more cash flows in return for higher investments.

Moreover, the natural logarithm models of total assets LOG(ASS) are used in this study. The companies' size is included, as used by other researchers (Abdul Wahab et al., 2017; Cutillas Gomariz & Sánchez Ballesta, 2014a; Majeed & Yan, 2019) to examine the likelihood effects on investment opportunities for the companies. Moreover, we included the market value of equity to control the companies' growth (Abdul Wahab et al., 2017; Majeed & Yan, 2019); *MEQ* is measured by the number of share outstanding multiplied by the price per share to control the companies solvency (Cutillas Gomariz & Sánchez Ballesta, 2014a). Also, the study uses the change in return on assets for t-1 and t-2 $\Delta CHROA_{i,t-1}$, and $\Delta CHROA_{i,t-2}$, respectively. The companies with good return

would gain more opportunities for investments and have more incentive to avoid tax (Bradshaw et al., 2019). Finally, the study includes the standard deviation of revenue for the companies and year *STRV*_{*i*,*t*}, respectively. The companies with higher revenue and growth have more incentive to avoid tax and gain higher investment opportunities in the market place.

4. Empirical results

4.1. Diagnostics test

The study investigates several diagnostics tests using **Eviews** software analysis to meet the regression assumptions analysis. First, the study investigates the normality test and the possibility of outliers. The histogram normality test is conducted for both Model (1) and Model (2). The Jarque-Bera test results confirm and accept the null hypothesis, which is the error term that is normally distributed with less than 5%. Moreover, the investigation of outliers with descriptive analysis confirms the data as to have no outliers. The intercept terms, *E(ut) = 0*, are included in Model (1) and Model (2). Second, homoscedasticity, $var(ut) = \sigma 2 < \infty$, is also tested using the Breusch-Pagan-Godfrey, and the results confirm a high non-significance with chi-square with (1), which have more than 0.05 level for Model (1) and Model (2), respectively. Third, the stability diagnostics models (CUSUM Test) are conducted and confirm that the models posit within critical line. \mathbf{R}^2 values of Model (1) and Model (2) are 69% and 70%, each. In addition, the analysis of the variance inflation factor (VIF) is conducted. The previous literature argued that the result should be less than 10 to support that the models do not have severe multicollinearity. The result of this test is included in Table 5 and Table 6 with all variables included in the regression models having less than 5 and confirmed the models as to have no multicollinearity problem. Finally, the correlation matrix is explained in Table 4 and all variables with less than 70% correlation confirm that the variables included in the models do not have multicollinearity.

4.2. Descriptive analysis and correlation matrix

Table 3 presents the descriptive analysis of the variables under the study for Model 1 and Model 2. The skewness values range between .023 and 1.87, while the kurtosis values range between 4.5 and 18.4, which provide evidence that the data are normally distributed (Hair et al., 2010, Byrne, 2010). The investment opportunities (*INVOPP*) in the sample show a higher range between minimum and maximum values (.39) and (7.73) with an average value of 1.53. This result indicates that the investment opportunities in the GCC region are high, and we need to find the factors that play an important role in improving the future. Moreover, the average (median) tax paid (*TAX*) is 4% (0), which indicates the difference among the companies in GCC region with deferred tax policy. Moreover, the earning power (EAROW) variable has the average of (median) 6% (5%), which shows medium level of operating income as divided to the total assets of the GCC companies. This result supports the idea that those companies need more investment opportunities to increase the earnings power and attract more investors in the GCC region.

By analysing the accounting information quality construct variable (**AIQ**), companies in GCC countries have average (median) quality at 89.15 to 9.37, which indicates that those companies have high quality of accounting information. The effects on the investment opportunities can be investigated in the regression models.

Table 3 also shows the descriptive analysis for the control variables included in the models. The mean (median) for the market value of equity (MEQ) is 1396. 88 (348.004), which shows high price of GCC companies' shares in the market and supports the GCC region as an active market for investment. The mean (median) for the natural logarithm **LOG (ASS)** is 2399.78 (414.2), which means that the total asset is an important control variable that should be included in the models. The mean (median) $\Delta CHROA_{i,t-1}$ and $\Delta CHROA_{i,t-2}$ are -0.007(-0.0059) and -0.057 (-0.071), which control the return on assets for the previous two years. Finally, the standard deviation of revenue

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
INVOPP	1.534946	1.279231	7.733333	0.390247	0.830048	1.543844	12.99167
ТАХ	0.048535	0	2.174419	-2.921569	0.204162	0.256003	12.17307
EAROW	0.062932	0.054888	0.33079	-0.190728	0.070357	0.404513	4.571228
AIQ	89.15626	9.370029	4905.244	0.115209	360.0792	1.604565	12.81118
МЕQ	1396.882	348.0048	38,380	0.13	3642.403	1.043575	17.84906
LOG(ASS)	2399.787	414.2	103,525.4	3.24	7829.453	1.879547	14.62799
ΔCHROA I, _{t-1}	-0.007015	-0.005927	0.259923	-0.227793	0.042832	0.237103	10.55433
DCHROA I , _{t-2}	-0.075152	-0.071505	0.335598	-0.39998	0.096062	0.181325	4.854584
STRV	118.2379	23.00686	5582.761	0.089805	368.7086	1.37228	18.41714
Observations	773	773	773	773	773	773	773
INVOPP is the depend total assets). AIO equ ΔWC_{It} is the change in t-1. PPE_{It} mean gross t assets. ACHROA it-1 is	ent variable, equals to (total als to the absolute value of non-cash working capital fr ook value of property plant u The change in return of ass	l assets + market value of i f the of the Accounting in om the year t – Ito year t, and equipment. ε_{it} the err iets from t to t-1. ACHROA	equity [*] —book value of eq. formation quality proxy π the CFO represent the cas or term of company i, and it-2 is the change in retur	uity// total assets. TAX is t nodel, $\Delta WC_{i,t} = y_0 + y_1 * C$ ih flow of company in t-1, year t. MEQ is the No. Out m of assets from t to t-1.	he Cash tax paid to opera $PO_{it-1} + \gamma_2 * CFO_{it} + \gamma_3 * CFO_{it}$ t, t + 1 year, respectively, <i>i</i> standing shares <i>x</i> Price pe STRV is the Standard devi	ting cash flow. EROW equation $(FO_{1i+1} + Y_4 * \Delta Sales_{1i} + Y_5 + \Delta Sales_{1i} + Y_5 + And \Delta Sales_{1i}$ the change in Y share. LOG(ASS) is the N of ation of revenue for firm of	als to (operating income/ * $PPE_{i,t} + \varepsilon_{i,i,t}$, the Where company sales from t to atural Logarithm of total and year i,t, respectively.

Table 3. Descriptive Statistics

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ing inc	the M	es fron	hm of	espect	
perati	$+ \varepsilon_{i,t,j}$	ny salı	ogarit	n i,t, n	
ls to (c	k PPE _{i,t}	compa	itural L	nd yec	
, edna	$+ \gamma_5$	ige in c	the Na	firm a	
EROW	∆Sales _{i,i}	e chan	si (SS)	ue for	
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id to o	-0 <i>i</i> , <i>t</i> +	spectiv	is × Pri	andara	
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e Cash	$D_{i,t-1} + D_{i,t-1}$	t + 1 y	anding	rrv is	
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-book	onb ua	repres	of com	he cha	
quity*–	ormatic	he CFC	r term	;t-2 is t	
ə Jo ər	ng info	ear t, t	ne erro	HROA ;	
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e depe	AIO €	change	an gros	'0A i.t-:	
P is th	rssets).	is the ('E _{i,t} me	ACHR	
PP is the d	assets). Al	_t is the cha	PE _{i,t} mean <u>g</u>	s. ACHROA	

	INVOPP	ТАХ	EAROW	AIQ	MEQ	LOG(ASS)	ΔCHROA _{i,t-1}	ΔCHROA _{i,t-1}	STRV
INVOPP	1								
ТАХ	-0.057688195	1							
EAROW	0.472399533	0.006178635							
AIQ	0.065528953	0.009178738	-0.03651197	1					
MEQ	0.075453358	-0.031249889	0.118622538	0.490149085	1				
LOG(ASS)	-0.098559105	0.000576321	-0.04936365	0.494013933	0.711877301	7			
ΔCHROA _{i,t-1}	0.060753906	0.025982322	0.080396926	-0.016234275	-0.031185436	0.003900688	1		
ΔCHROA _{i,t-2}	-0.404234913	-0.0193239	-0.569259286	0.0481445	-0.090270185	0.076407916	0.607198546	1	
STRV	-0.034217541	-0.023152888	-0.014874596	0.431640488	0.541456476	0.543778871	-0.002619903	0.043810577	1
INVOPP is the depetod assets). All e total assets). All e ΔWC_{it} is the change t-1. PP _{it} mean gros	indent variable, equa equals to the absolut e in non-cash working is tho change of propi	Is to (total assets + m is value of the of the t capital from the yea erty plant and equipm	parket value of equity Accounting informs rt = 1to year t, the C hent ε_{tt} , the error terr	**—book value of equ tion quality proxy m FO represent the cas m of company i, and	uity)/ total assets. TA nodel, $\Delta WC_{it} = \gamma_0 + \gamma$ h flow of company in year t. MEQ is the No	X is the Cash tax pai, $\gamma_1 \in CFO_{i,t-1} + \gamma_2 \in CF$ i, t-1, t, t+1 year, ress i, t-1, t, t-1 year, ress year, ress i, t-1, t, t-1 year, ress year,	Id to operating cash f $O_{i,t} + \gamma_3 * CFO_{i,t+1} + \gamma_1$ pectively. And $\Delta Sales_i$ pectively. And $\Delta Sales_i$	low. EROW equals to $_{it} = \Delta Sales_{it} + y_5 + PFL$ $_{it} + \Delta Cales_{it} + y_5 + PFL$ $_{it} + \Delta Cales_{it} + NeturalDistribution (2006) (2007) (2007)$	(operating income/ $a_{it} + E_{i,t}$, the Where any sales from t to Logarithm of total
USSELS. DUTRUN (t-)	1 IS THE CHURCHER	in unit stasse lo unit	10 1-1. DURNA 1,t-2 1.	s the change in retur	nn n mort stasse to m	ור-ד. בווע וא וווה שוח	שמעמ מהעומנוסוו סל גב	venue lor jinn unu ya	au i,t, respectively.

Table 4. Correlation

ts. ACHROA it-1 is The change in return of assets from t to t-1. ACHROA it-2 is the change in return of assets from t to t-1. STRV is the Standard deviation of revenue for firm and year it, respectively	PPP is the deperative of the deperation of the deperation of the deperation of the change $V_{\rm E_{1,t}}$ mean gross and the deperation of the dependence	ndent variable, equal quals to the absolut in non-cash working s book value of prope	$r_{\rm constraint}$ is to (total assets + π e value of the of the vertical from the yea	The formula of the control of the c	y*—book value of equ tion quality proxy m FO represent the casi m of company i, and y	iity// total assets. TA. iodel, $\Delta WC_{it} = \gamma_0 + \gamma$ h flow of company in year t. MEQ is the No	X is the Cash tax pair $x = CFO_{i,t-1} + y_2 + CFC$ t-1, t, t+1 year, resp. Outstanding shares	to operating cash f_1^{1} (i.t. + $y_3 * CFO_{i,t+1} + y_4$ (ectively. And $\Delta Sales_i$ × Price per share. LO	ow. EROW equals to $ $ $_{t} * \Delta Sales_{i,t} + y_{5} * PPE_{i}$ $_{t}$ the change in comp G(ASS) is the Natural	(operating income $t + \varepsilon_{i,t}$, the Where any sales from t to Logarithm of tota
	ts. ΔCHROA i,t-1	is The change in ret	urn of assets from t	to t-1. ΔCHROA i,t-2 i	s the change in retur	n of assets from t to	t-1. STRV is the Star	idard deviation of re	venue for firm and ye	ear i,t, respectively.

Table 5. Dependent Va	riable: INVOPP		
INVOPF	$\overline{P}_{i,t} = \overline{\beta}_0 + \overline{\beta}_1 TAX_{i,t} + \overline{\beta}_2 AIQ_{i,t}$	$+ \beta_3 EAROW_{i,t} + \beta_4 LOG(ASS)_{i,t} +$	β _s MEQ _{i,t}
	$+eta_6$ CHROA _{i,t-1} + eta_7 CHI	$ROA_{i,t-2} + \beta_8 STRV_{i,t} + \epsilon_{i,t,1}$	
Independent Variable	Coefficient	t-Statistic	VIF
TAX	-0.153291***	(-3.539950)	1.004442
EAROW	3.275163***	(14.643730)	2.624268
AIQ	0.000057***	(3.253508)	1.468198
MEQ	0.000034***	(6.363767)	2.365991
LOG(ASS)	-0.000016***	(-7.988114)	2.504095
ΔCHROA I,t-1	1.235895***	(3.261477)	2.782175
∆CHROA I,t-2	-2.043250***	(-10.338060)	4.122596
STRV	0.000025***	(1.519873)	1.480063
С	1.125572***	(104.56270)	
Obs.			
Adjusted R-squared	0.692495		

INVOPP is the dependent variable, equals to (total assets + market value of equity*—book value of equity)/ total assets. TAX is the Cash tax paid to operating cash flow. EROW equals to (operating income/total assets). **AIO** equals to the absolute value of the of the Accounting information quality proxy model, $\Delta WC_{i,t} = \gamma_0 + \gamma_1 * CFO_{i,t-1} + \gamma_2 * CFO_{i,t+1} + \gamma_4 * \Delta Sales_{i,t} + \gamma_5 * PPE_{i,t} + \varepsilon_{i,t}$, the Where $\Delta WC_{i,t}$ is the change in non-cash working capital from the year t - 1 to year t, the CFO represent the cash flow of company in t-1, t, t + 1 year, respectively. And $\Delta Sales_{i,t}$ the change in company sales from t to t-1. *PPE_{i,t}* mean gross book value of property plant and equipment. ε_{it} , the error term of company i, and year t. **MEQ** is the No. Outstanding shares × Price per share. **LOG(ASS)** is the Natural Logarithm of total assets. **ΔCHROA** _{i,t-1} is The change in return of assets from t to t-1. **STRV** is the Standard deviation of revenue for firm and year i, t, respectively.

Numbers between parentheses are t-statistics.

*,**,*** Significance at the 10%, 5%, and 1% levels, respectively.

mean (median) of 118.23 (23.00) signifies a strong effect on investment opportunities in the GCC region.

Table 4 shows the correlation matrix that explains the strong relationship between the independent and dependent variables. Moreover, the correlation matrix analysis indicates whether the variables in the models have the multicollinearity problem. Table 4 shows that correlation of all variables in the models is below 72, indicating non-existence of the multicollinearity problem in the estimation (Asteriou and Hall, 2007). The study shows that tax avoidance (**TAX**) has a negative correlation with investment opportunities (**INVOPP**). Moreover, the results also show negative correlation between the natural logarithm of total assets **LOG(ASS)** and $\Delta CHROA_{i,t-2}$ investment opportunities (**INVOPP**). The rest of the variables show positive correlation with the investment opportunities (**INVOPP**), namely, **AIQ, EAROW, MEQ, STRV**, $\Delta CHROA_{i,t-1}$.

4.3. Regression analysis

4.3.1. Direct relationship of tax avoidance and accounting information quality

Table 5 provides the regression analysis of equation (1) between tax avoidance and accounting information quality on investment opportunities. The model fits well with R^2 , 69% per cent, similar to the study conducted by Kim (2008).

In testing Hypothesis (H_1) in Model 1, in terms of the relationship between the accounting information quality and investment opportunities, the results show a positively significant

Table 6. Dependent Varia	IDIE: INVOPP		
$\qquad \qquad $	$\overline{+\beta_1 TAX_{i,t} + \beta_2 AIQ_{i,t} + \beta_3 (A)}$	$\frac{IIQ_{i,t} * TAX_{i,t}) + \beta_4 EAROW_{i,t} + \beta_5}{ACHROA_{i,t} + \beta_6 STRV_{i,t} + \varepsilon_{i,t}}$	$LOG(ASS)_{i,t}+$
Independent Variable	Coefficient	t-Statistic	VIF
TAX	-0.129313***	(-2.985013)	1.080661
EAROW	0.000043***	(2.594711)	2.634912
AIQ	3.335247***	(14.818290)	1.614537
(AIQ*TAX)	0.000554***	(2.190034)	1.376091
MEQ	0.000032***	(5.944835)	2.437408
LOG(ASS)	-0.000015***	(-7.445521)	2.638823
∆CHROA I,t-1	1.200387***	(3.169355)	2.781836
ΔCHROA I,t-2	-2.025455***	(-10.276950)	4.124744
STRV	0.000026***	(1.830185)	1.484255
С	1.122683***	(103.260500)	
Obs.			
Adjusted R-squared	0.70144		

INVOPP is the dependent variable, equals to (total assets + market value of equity*-book value of equity)/ total assets. TAX is the Cash tax paid to operating cash flow. EROW equals to (operating income/total assets). AIO equals absolute value of the of the Accounting to the information aualitv proxv model. $\Delta WC_{i,t} = \gamma_0 + \gamma_1 * CFO_{i,t-1} + \gamma_2 * CFO_{i,t} + \gamma_3 * CFO_{i,t+1} + \gamma_4 * \Delta Sales_{i,t} + \gamma_5 * PPE_{i,t} + \varepsilon_{i,t}, \text{ the Where } \Delta WC_{i,t} \text{ is the change}$ in non-cash working capital from the year t - 1 to year t, the CFO represent the cash flow of company in t-1, t, t + 1 year, respectively. And $\Delta Sales_{it}$ the change in company sales from t to t-1. PPE_{it} mean gross book value of property plant and equipment. ϵ_{it} , the error term of company i, and year t. *MEQ* is the No. Outstanding shares × Price per share. LOG(ASS) is the Natural Logarithm of total assets. ACHROA i,t-1 is The change in return of assets from t to t-1. ACHROA i,t-2 is the change in return of assets from t to t-1. STRV is the Standard deviation of revenue for firm and year *i*,*t*, respectively.

Numbers between parentheses are t-statistics.

*,**,*** Significance at the 10%, 5%, and 1% levels, respectively.

coefficient, at a level less than 1% (0.00, p > 0.01). The results support the agency theory perspective that higher quality of accounting information increases the credibility of financial statements and decreases information asymmetry (S. C. Myers & Majluf, 1984c; Jensen, 1986). The results are similar to the evidence provided in other studies (Chen et al., 2011; Cutillas Gomariz & Sánchez Ballesta, 2014b) that accounting information quality has a positive effect on investment efficiency and another similar study in GCC countries (Alsulmani et al., 2021).

In addition, in testing the Hypothesis (H_2) in equation (1) on the relationship between tax avoidance and investment opportunities, the results show a negatively significant coefficient at a level less than 1% (-0.15, p > 0.01). The results support the agency theory perspective of the managers' opportunistic behaviour and tax avoidance, in which it could increase the information asymmetry between the investors and corporate insider stakeholders (Jensen, 1986). This is similar to the study on tax avoidance by Shafai et al. (2018).

Finally, the control variables' coefficient of earnings power has a significant positive relationship with investments opportunities, at a level less than 1% (3.26, p > 0.01). This indicates that the operating income has an important effect on investment opportunities, as inventors will evaluate the companies operating activities more than other activities for future investment. Moreover, the market value of equity measured by the number of outstanding shares multiplied by the price per share gives a good impression from the inventors' perspective. In this regard, the result of market value equity has a significantly positive relationship with investment opportunities, with less than 1% level (0.00, p > 0.00). Also, the change in the previous year's return of assets also has a significantly positive coefficient at 1% level (1.23, p > 0.00). On the other hand, the last two-year change has a significantly negative coefficient with investment opportunities at 1% level (-2.04, p > 0.00). Finally, the standard deviation of company's revenue has a significantly positive relationship with investment opportunities at 1% level (0.00, p > 0.00).

4.3.2. Moderating effect of accounting information quality

Table 6 outlines the regression results of equation (2), for the interaction effects of accounting information quality on tax avoidance and investment opportunities relationship set in hypothesis (H₃). In this analysis, we run the interaction term $(AIQ_{i,t} * TAX_{i,t})$ in updating equation 1 as shown in equation 2. The results in Table 6 and equation 2 of the moderating effect of accounting information quality fit well with the adjusted \mathbf{R}^2 (70%), similar to the study conducted by Kim (2008).

Similar to equation 1, the result of equation 2 on tax avoidance (TAX_{it}) has a significantly negative coefficient at a level less than 1% (-0.15, p > 0.01) on investment opportunities in GCC countries. This result supports the earlier results of negative effects of tax avoidance on the dependent variable and the advantage of using the companies' cash resources by the managers to build their empire, which supports the agency theory perspective (Jensen & Meckling, 1976a). Similarly, the direct effect of accounting information quality on investment opportunities result has a significantly positive coefficient at level less than 1% (3.33, p > 0.01) on investment opportunities in GCC countries. This result also supports the advantage of accounting information quality on increasing the credibility of information and lowering risk decisions for the investors, which positively affects investment opportunities. Similar results were found (Cutillas Gomariz & Sánchez Ballesta, 2014b; Ha & Feng, 2020; Khurana et al., 2018a). The third hypothesis (H₃) tests the interaction of accounting information quality and it mitigates the negative effects of tax avoidance. The results in Table 6 support the interacted moderating effect term $(AIQ_{it} * TAX_{it})$ and have a significant positive coefficient at levels less than 1% (0.00, p > 0.01) on investment opportunities in GCC countries. Thus, the accounting information quality in GCC companies plays an important role as a governance mechanism for mitigating the agency problem. The accounting information quality increases the control over management opportunist behaviour. The agency theory also supports that the higher quality of accounting information reduces the information asymmetry between inside stakeholders as well as between insider and outside investors. Similar results were found by Qingyuan and Lumeng (2018).

In addition, the control variables included in Model 1 are also included in Model 2 and the results are consistent with the previous results in Model 1. First, the earnings power (*EAROW*_{*i*,t}), market value of equity (*MEQ*_{*i*,t}), standard deviation (*STRV*_{*i*,t}) and first-order change in return on assets (*CHROA*_{*i*,t-1}) have a significantly positive coefficient at a level less than 1% with (0.00, p > 0.01) and (1.20, p > 0.01), respectively, on investment opportunities in GCC countries. Meanwhile, natural logarithm (*LOG*(*ASS*)_{*i*,t}) and the second-order change in return on assets (*CHROA*_{*i*,t-2}) have a significantly negative coefficient at a level less than 1% with (-0.00, p > 0.01) and (-2.02, p > 0.01), respectively, on investment opportunities in GCC countries.

5. Discussion of empirical findings

The findings of this study $(H_1, H_2 \text{ and } H_3)$, in the context of GCC countries support, the previous studies in the field. Also, the current study results contribute to the body of literature in several ways and achieve its objectives. The first objective of this study is to investigate the impacts of accounting information quality on GCC countries' investment opportunities, which is addressed in hypothesis (H_1) . According to the agency theory, the information asymmetry problem comes when the managers have more information than outside investors, which could negatively affect investment opportunities (Jensen & Meckling, 1976a). In the current study, the results support a positively significant association between the accounting information quality and investment

opportunities at a level less than 1% (0.00, p > 0.01) and (3.33, p > 0.01) in equations 1 and 2, respectively. In this regard, several studies supported the positive effect of accounting information quality on investment efficiency and it is a good governance mechanism to mitigate the information asymmetry (Azar et al., 2019; Barth et al., 2022; Cho & Kang, 2019; Siyanbola et al., 2019).

The second objective of this study is to investigate the impacts of tax avoidance on investment opportunities, which is addressed in hypothesis (H_2). The pecking order theory argued that there is no optimal level of cash and its function with best return (Asiri et al., 2020b). On the other hand, cash generated by tax avoidance activities may provide managers with powerful tools to impose an opportunistic behaviour and increase their wealth. Thus, tax avoidance leads to more cash in managers' hands, along with the absence of governance mechanisms that could negatively affect investment opportunities (Zhai & Wang, 2016). The results of this study support the argument and find a negative direct relationship between the tax avoidance and investment opportunities at a level less than 1% (-0.15, p > 0.01) in equations 1 and 2, respectively. Similar results were found in other studies (Asiri et al., 2020b; Khurana et al., 2018a).

Finally, the third objective of this study is to identify the moderating role of accounting information quality between tax avoidance and investment opportunities in GCC countries, which is addressed in hypothesis (H_3). According to the agency theory, the good governance mechanisms, such as accounting information quality, help firms to mitigate the information asymmetry problem (Jensen & Meckling, 1976a). On the other hand, Abdul Wahab et al. (2017) argue the substitutability and complementary role of corporate governance in mitigating the agency problem. The substitutability perspective states that the corporate governance mechanisms are the substitutes of tax planning. This means that the improvement of accounting information quality will support and replace the effects of tax planning, whether it is negative or positive (Ward et al., 2009). On the other hand, the complementary perspective role of corporate governance mechanisms, such as accounting information quality, will complement the effects of tax planning on investment opportunities. Consequently, Abdul Wahab et al. (2017) in their study state that more effective governance will increase the investment opportunities when the effect of tax planning is negative. The existence of a complementary role of accounting information quality in mitigating the negative effects of the tax avoidance on investment opportunities needs a higher sample of GCC countries companies, and "more cross-sectional analysis is needed for GCC economic region analysis" (Almusehel & Alfawzan, 2017).

The results of the current study support that accounting information quality plays a substitute role and changes the negative effects of tax avoidance on investment opportunities to a positive effect. Firstly, the direct effect of tax avoidance negatively affects investment opportunities at a level less than 1% (-0.15, p > 0.01) in equations 1 and 2, respectively. However, the interaction of the moderating effects of accounting information quality has a positively significant effect on investment opportunities at 1% (0.00, p > 0.01). Thus, the accounting information quality plays an important role in GCC countries context and helps to improve the investment opportunities.

6. Conclusion

This study examines the effects of tax avoidance on investment opportunities in GCC countries companies for the period 2011 to 2017. Moreover, the study examines the relationship between the accounting information quality and investment opportunities. In addition, the study examines the interaction effect of accounting information quality on tax avoidance and investment opportunities relationship. The data sample of this study includes 1337 company-year observations of six Arabian GCC countries, which are Bahrain, Oman, Qatar, Saudi Arabia, Kuwait, and the United Arab Emirates (UAE).

The findings of this study have interesting results in the governance and accounting research field. First, the study found a negative effect of tax avoidance in GCC companies' investment opportunities. The GCC countries are concerned about the GDP growth and economic stability

due to the prospects of oil and gas reserves, which lead the countries to use taxes as alternative resources. In this regard, the companies may avoid tax, but the negative or positive impact on investment opportunities is an important question and plays an important role in contributing to the countries' economy. The study confirms that tax avoidance practices by the companies are not healthy for companies' investment opportunities. Thus, the study also examined the effects of accounting information quality on investment opportunities. The results of this study confirm that the accounting information quality has a positive effect on investment opportunities. Thus, increasing the quality of accounting information helps the investors to have more reliable information when they invest in the GCC companies. Moreover, this study investigated the effects of accounting information guality on mitigating the tax avoidance negative effects on investment opportunities. The results of this study confirm the important role of accounting information auality as a governance mechanism that reduces the agency problem of accounting information asymmetry and opportunist behaviour by managers. Therefore, when those countries apply higher accounting information standards and disclosure, it will help in monitoring the managers of the companies where tax activities are implemented. In addition, the quality of accounting information gives higher-quality information for the local and foreign investors to plan their investment strategies in the GCC countries. The high quality of accounting information and a more attractive market for investment will simultaneously increase the investment opportunities in the GCC region.

Policymakers, tax institution, stock markets, chartered accountants' associations and the Ministry of Finance in GCC countries can gain useful indicators from the present study to explore the negative effects of increasing tax rates that lead the companies to practice increased tax avoidance activities. Moreover, they could use the findings of this study to implement improved accounting standards such as international financial reporting standards (IFRs), which enhance disclosure and governance for the GCC region. Moreover, the implications of a better-quality accounting information increase the competitiveness and enhance the market advantage of remaining stable in the region, thus, helping those countries to increase the GDP and economic growth.

This study is the first study to investigate the moderating role of accounting information quality in mitigating the negative effects of tax avoidance, especially in the GCC region. However, the current study has a number of limitations that can be addressed in future research. The first limitation is the small number of companies and the time period covered in the sample. Additionally, the current study has investigated the moderating effects of accounting information quality only on the tax avoidance and investment opportunities. Thus, further examination of other governance mechanisms that help to mitigate the tax avoidance activities by the companies in other countries can be employed by future researchers. Moreover, the study used only one measurement of accounting information quality, while previous research used other measurements such as earnings persistence, earnings predictability, smoothing and comprehensive index (Zhai & Wang, 2016), index of both IFRs mandatory and voluntary (Ofoegbu et al., 2018). Also, the findings of this research open up other researchers to conduct a qualitative study in exploring how companies implement tax avoidance activities, as that would give a deeper investigation for the legal loopholes of the tax system in the countries under study.

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Author details

Ahnaf Ali Alsmady¹ E-mail: aalsmadi@ut.edu.sa ORCID ID: http://orcid.org/0000-0001-9496-5265 ¹ Accounting Department, "University of Tabuk", Tabuk, Saudi Arabia.

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Correction

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

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Notes

1. MATER: manufacturing of building materials, building materials, aluminium, cement, petrochemical, leading

producer & trader of aggregates, steel products, construction materials industries & contracting, real estate, chemicals, gases, aluminium products, mining, wire factories, filling and packing materials manufacturing, metal manufacturing and casting, glass industries, paper manufacturing.

2. INDUS: aviation, air services, aviation lease and finance, construction and landscapes, courier and package delivery, warehousing, automotive distribution, ceramic tiles, abrasives manufacturing, real estate, power generation, manufacturers of voltage power cables, power transmission line conductors and building wires, port services, engineering, assembly, cables, transportation, printing and packaging, construction, development, "building, maintenance, repair, refitting, and conversion of naval and commercial vessels", ceramic and gres porcelain wall and floor tiles, rail & infrastructure, maritime, vitrified clay pipe.

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