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TOWARDS A META THEORY OF ACCOUNTING FOR KNOWLEDGE MANAGEMENT: REVIEW THE REALITIES TO STAGE THE CRITICAL THINKING OF KNOWLEDGE BUSINESS MODEL

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Abstract: Knowledge management has always seen as an engine to convert tacit knowledge into explicit. Knowledge assets are facilitators to make such conversion. Knowledge management paradigm is a turning point in the management theories of business. When such paradigm has business dominance, it is time to question how to account for it ? Accounting for “how” and “why” has been largely neglected by the professional bodies and scholars of accounting. Accounting for knowledge management paradigm can be very critical in terms of questioning some of the fundamental assumptions of financial statements. The focus has been very narrow and anachronistic. Accounting for knowledge management is a problematic issue warrant further investigations. Its involves far more than the need to address the paradoxes and lacks of accounting model and practices. The extension of institutional accounting theories highlights how accounting against knowledge management is totally different from accounting for operations? Yet, the failure is shaped by the areas of asset recognition and the appropriateness of the going concern assumption. The virtue of conflict is grounded in nature of key assets, materiality, agility, visibility, periodicity, creativity, connectivity, interactivity, continuity, and survival. This paper argues that accounting for knowledge management must be based on understanding the dynamic nature of knowledge management. This paper contributes to accounting literature by being the first to identify how knowledge management reality has shaken the theoretical logic of accounting.

Key words: Accounting, knowledge management, intangibles, intellectual, knowledge assets, and value paradox.

I. INTRODUCTION

Knowledge is an engine of business success and a unique survive asset, and accounting is the only business reporting system. Knowledge is the fuel of business value which supports market capitalization. The knowledge driven literature have placed much attention on

consequences of emergence of knowledge management. A new business management has shaken the assumptions and concepts of accounting. Accounting capital is no longer a driver of competitive advantages, rather knowledge capitals in terms of intellectual, technology, and customer capitals. The

engine of generating business revenues has been shifted from tangibles to intangibles assets. Accordingly, accounting has long been recognized as problematical for knowledge management and its model is no longer sufficient. The accounting model has been invented over hundreds of years to measure and report investment in tangible assets (Lev, 2001). The dilemma of accounting against knowledge management is about theory to practice. New knowledge practices are being innovated every day, but new accounting rules are not yet established and frame worked (Mohammad, 2013b). Unfortunately, accounting theorists and researchers have been very slow to recognize this fact. Accounting by its status qua is a fairly industrial intellectual discipline and has yet to demonstrate the maturity of knowledge management. The accounting literatures reviewed with reference to knowledge management clearly shown that accountant's community debate has focused on three issues: lacks and critics associated with the accounting model; nature of accounting practices required to deal with knowledge initiatives; and the rigid reporting format of the financial statements. Accounting reporting power against knowledge management is full of controversy associated with necessities of knowledge initiatives. The arguments have centered on the reliability of accounting information, gap of market value with book value, knowledge income, future cash flows, and logic of accounting equation (Lev and Zarowin, 1999). These arguments are further supported by the call to reform accounting rules because of intangible assets. As such assets are now the revenue engine of knowledge management. The absence of those assets from the financial statements leaves investors with irrelevant information to make critical business decisions. Lev, 2016 further claims that lack of intangibles has probably led to the systematic undervaluation of business assets. As a result,

insufficient investment in the core business assets has been made. The lack of accounting information for completeness and timeliness on Knowledge assets contributes to what can be titled "accounting asymmetry". The basic and most accepted truth is that the structural components of accounting with its recording philosophy and reporting mechanism have been established to match the requirements of the industrial management. The reality is that such model has been invented to calculate the cost of materials and wages. Thus, one of key critics against accounting model is a cost based and its calculations cope with the industrial management not the knowledge one. This reason in particular explains why the current format of financial statements does not disclose relevant and reliable information about knowledge initiatives. The nature of accounting theory especially logic in terms of assumptions, principles, and rules are primarily responsible for the ultimate absent of knowledge information. The problem of accounting against knowledge management is the huge uncertainty which produce volatility associated with risks and due to such fact; investments in intangibles are treated as expenses. In contrast, innovations in knowledge management are created primarily by investment in intangibles, when such investments are commercially succeeded; they are transformed into tangible assets creating more corporate value and growth (Lev, 2001). All these lacks incorporated in the practical body of accounting model cited accounting as inadequate for knowledge management. Further, globalization, fast-changing technologies, intensive investments in human resources, high accelerated research and development have doubled the crises of accounting with knowledge management and increased unreliability of accounting information (Goldfinger, 1997). This paper therefore goes beyond the extant literature

in the field of accounting against knowledge management. It's describing the status quo of accounting model and arguing how far is accounting from knowledge. The key purpose of this paper is to introduce set of the urgent research questions related to accounting against knowledge management. The research question remains: is current accounting model mature enough to account for knowledge? An open question is: do we have a theory of accounting against knowledge? If so, how much perfect this model? Could the lacks of knowledge necessities be explained by inadequacy of accounting practices, or unique characteristics of knowledge practices? What is required to overcoming the paradoxes associated with accounting against knowledge management? These questions cannot be answered by the current ignorance and weak understanding of knowledge management. This paper adopts the structural components analysis methodology to attempt answering those questions and to draw a proposed accounting ontology against knowledge. These structural components are acting as important measures to gauge the availability of existed accounting model to measure and report knowledge business initiatives. This paper contributes to the existing accounting research in several ways: First, it contributes to improve understanding of the current situation of accounting against knowledge management assumptions. Second, paradoxes and lacks identified in this study provide insights into the recognition and reporting problems of accounting model. These identified problems could be considered by various stakeholders, regulators, and standards-setting bodies as they may seek to improve accounting against knowledge. Third, the lacks and critics identified illustrate what required to restructuring a new accounting rules and practices to match knowledge necessities. Finally, this longitudinal analysis may contribute

to framework a new conceptual theory of accounting for knowledge management. To put this research paper into context, first both the nexuses of knowledge management theory and the realities of accounting model have been discussed. Further, in-depth overviews of the paradoxes and lacks of accounting model have been summarized. Finally, the proposed structure of meta-theory of accounting against knowledge management has been presented.

II. REVIEW OF LITERATURES

2.1 Understanding knowledge management nexuses

Knowledge-based economy is a reality. Its unique dynamics, relationships, and assumptions have set the basics of a new growth theory (OECD, 1996). The new economic game incorporates the role of both knowledge and technology in driving productivity and economic growth (Corrado et. al, 2006). The emergence of knowledge-based economy has laid the foundation stone of an effective management of knowledge. Knowledge is not just another resource like labor and capital, but is the only important resource. Knowledge management is a new technology rather than any specific new science or invention (Drucker 1985). Knowledge management is one of three practices that have brought the most unexperienced turns to business (Prusak, 2001). The essence of knowledge management is to connect technology, process, and people to leverage value creation (Omotayo, 2015). Knowledge management is a value based rather than value chain; customer success based not customer satisfaction; collaborative based not competitive (Amidon, 2003). As consequence, new ways of doing business associated with new business rules have been invented. However, development of knowledge-based performance has established new rules for gauging business

success. These new rules have entailed businesses to fundamentally rethink their past assumptions about management. Stewart 2007 argues that to understand the unique rules of knowledge economy especially how to create value, it is essential to identify the role of three assumptions. The first is knowledge and its management as the most important engine of production. The second is knowledge capital as a key pillar of the organizational capitals. The third is how to adopt new knowledge technologies, business practices, management techniques and strategies. Gorey *et al.*, 1996 proclaimed that there are four organizational enablers facilitate the management of the organizational knowledge. These enablers are leadership, culture, technology, and measurement (See Figure-1). The accounting measurement is the process that includes not only how the organization quantifies its knowledge capital, but also how resources are allocated to fuel its growth. Further, it's the connection process where accounting match knowledge management. This unique relationship has been depicted in Figure-1 below. Knowledge management has improved profitability by raising productivity and streamlining, downsizing, outsourcing, and out-



**Figure-1: Knowledge Management Arena
(Royalty Image)**

competing the competition (Kurzynski, 2009). Changing profit patterns and mechanisms has been considered one of the most fundamental changes due to the new practices of knowledge management. These practices are the engine

to translating creative thinking, new ideas, and innovation into valuable products and services to guarantee business survive. Value is the product of knowledge and companies cannot generate profits without these ideas, skills, and talent of people. The literatures especially knowledge oriented contextualize much of those knowledge strategies, models, and knowledge-profit relationship (Nonaka and Takeuchi, 1995; Kaplan and Norton, 1996; Edvinsson and Malone, 1997; Anderson, 2000; Prusak, 2001; Stewart, 2001; Amidon, 2003; Omotayo, 2015). However, beside it is concentrated on intangibles; the knowledge management is just as much about people, organizational processes, and information technology. It's more concerned with the flows of knowledge that take place as part of organizational processes rather than the stocks of knowledge presented in financial reports (Edwards *et al.*, 2004). For example, Nonaka and Takeuchi (1995), link knowledge management to the organizational success, and then making profit. They claim that knowledge companies are profitable because of their skills and expertise about how to translate the organizational knowledge into products and services. This dynamic represents the virtuous cycle of competition, invention, innovation, productivity, and growth. Further, such dynamic cycle combines three streams: value stream, revenue stream and the logistical stream. These streams entail that the knowledge business model has to address: investment and how it is funded, the ongoing costs, and the revenue and how it generated (Mohammad, 2013a). This conceals the fact that the organizational processes of knowledge management which center the knowledge business model have two and only two goals: to innovate and to market. All of their other processes are cost. Thus, any knowledge company to properly function in the knowledge era, it needs knowledge management

integrated with an accounting practices embodies these three components to cope with the implications of knowledge necessities (Huang, *et al.*, 2012). Expected trends in the business practices and the necessary changes of accounting model are reviewed in the light of recent literature of knowledge management. These trends suggest that compliance between two areas of knowledge shall extend to include knowledge management processes and the identification of the accounting metrics that support such processes. The problem of accounting against the value perspective is that accounting values are meaningful only if they represent a true picture of economic and legalistic reality. According to the information perspective, accounting is an organizational engine to provide information. Accounting is not primarily a tool for measuring or estimating value, but is a source of potential information. The information content school views the financial measures as measures of information events, not of value (Christensen and Demski, 2003). Researchers and practitioners have proposed a wide variety of models to support accounting for knowledge initiatives. Understanding the contribution of these various models may help integrate accounting in this area of business. The literatures reviewed indicate that there were three research questions to discover the required compliance: what nature of knowledge management processes that are currently used? How much reliable the accounting practices related to measurement and reporting of knowledge assets? What measures were currently used and those are required to account against knowledge management practices? Understanding the contribution of various knowledge management practices to solving business problems may help integrate accounting practices in this area. The key elements of accounting against knowledge management have to address the flows of the organizational process nexus.

These processes are three inter-related building blocks, broadly aligned with the different stages of the knowledge management: the development of new ideas (or invention of new business practices); the implementation and commercialization phase (or innovation and marketing of those practices); and reaping the benefits of new business practices through changes in market share and profitability (OECD, 2013). Understanding the above unique organizational process provides milestones for accounting against knowledge management.

2.2 Accounting for knowledge management

Accounting has long been described as “the language of business”, but unfortunately knowledge is the business of today and accounting cannot communicate such business. The interdisciplinary nature of knowledge management has turned the accounting model to be inadequate. Nowadays, questioning the validity of accounting rules, regulations, and practices in terms of nature as well as engines has grown considerably due to the emergence of knowledge management. The shift has altered the requirements of business and then declared the demise of accounting. Knowledge management research has been plagued by a variety of the accounting problems that can lead one to question the extent of validity of accounting model (Mohammad *et al.*, 2010).

2.2.1 *The early era of accounting studies (1950s-1970s)*

The seeds of accounting for knowledge have been planted in the fifties. This a new area begun to take roots by the recognition of accounting lacks. The initial awareness of role of technology in business has drawn a question mark about its existence in the balance sheet. The early literatures have

discussed many challenges that accounting regulatory questioned to prepare causal financial statements. According to the general understanding of this era, the problem of accounting is already attributed to its theoretical architecture and ontology. The theoretical lacks of accounting have perceived significant attention in the business literatures in terms of how to report business initiatives properly. The central premise of this era has addressed accounting as information management model with quite narrow recognition rules and reporting instruments. The old industrial logic of accounting has been recognized as problematic and need to be replaced under the pressure of business change. The core objective of these literatures was how to capture the differences of book value and make it measurable to the users in the financial statements. For the accounting literature, it was important to look for the new emergent gap between accounting and market values. Taken this fundamentally reporting issue, much of the discussion dealt with the empirical evidence of problematic measurement of business practices. In the early period of the sixties, the accountant's community has focused a great deal of interest to concept of accounting transaction. The new organizational models due to automation have created clear challenges to accounting definition of business transaction. Firmin and Linn (1968) have investigated how these models have expanded the accounting transaction concept. These new models are, introduction of information systems, changes in the organizational structure, and repaid growth in data processing technologies. Anton (1966) had explained another lack of accounting model in regard to missing integration with the planning and control systems. American Accounting Association (1966) has recognized the economic events which are not measured by accounting model such as price-level changes, employee skills

and intra-entity changes in assets values. The subsequent accounting literatures have paid visible attention on reliability of accounting information in terms of usefulness, accuracy, quality of format and reasonableness. All these research directions have initiated information technology based communication approach to enhance reliability of accounting information. In the early of the seventies, the discussions in the accounting literatures have been allocated to how to shift accounting interest from measuring transactions' data to report business value (Previts and Merino, 1999). Later, the awareness has been increased to start recognizing that the shift toward knowledge economy has altered the requirements of management, which in consequence rooted the wave of accounting lacks. The topic of accounting relevance has been of interest to both accounting and business specialists. Accounting research has been plagued by a variety of the evaluation problems that can lead one to question the extent of reliability of accounting numbers. Relevance of accounting information as a new area of critic has attracted the attention of business literature and thinkers (Burns and Stalker, 1961). The serious problem of financial statements is laid in its theoretical logic and structure. This matter has received much attention in the early literature, often in the form of discussions around validity of the accounting measurement rules. Accounting rules are key cause beyond accounting numbers' failure. As set of these rules were set up to evaluate static business transactions. These rules take out change from being recognized in the financial statements. These practices and treatments detract from the quality of financial information provided in the balance sheet. This theoretical logic of the accounting has been established five hundred years ago. This logic has been set up to match the requirements of industrial business transaction managed by machine technology (Lev, 2001).

The transactional approach of accounting measurement is based on highly restricted physical terms to accept and record economic events. The recording rules of business transactions have been defined and practiced according to the theory of visible logic. It has become apparent that accounting measurement is based on very flawed instruments in the context of evaluation. Its historical, periodical, cost and statements based measurement model (Curtiss, 1999). These features interpret why information provided by such model irrelevant to match business necessities. A critical distinction requires a greater awareness of value in contrast to cost management. Value management model is comprehensive, forward-looking, real-time, value-based, and actionable. The logical architecture of accounting with its current theoretical ontology has been established to report cost of business (Lev, 2001). The basic critical point against accounting logic is backward, transaction based, tangible assets centered and articulated to measure performance of high intensive machines technology. These assets such as physical capital, fixed assets, and inventory (the assets of the industrial revolution) have been considered driving engine of the industrial revenues. In the dynamic theory of balance sheet, these assets always appear at cost, which is the production side rather than customer side. As a result of such problems, the reported profit of accounting has become less or more than the generated or real profit. Further, the market value of business organizations has become more or doubles the accounting value (Kortelainen *et al.*, 2011). This situation raised critical questions about the nature and lacks that are specific to knowledge nature. Do accountability as a key nature of accounting under industrial era is no longer valid? Does accounting information still relevant under situation of knowledge management? The significant interdependence between

accounting measurement and recognition has duplicated its effect. These problems have created the paradox of accounting capital in front of business capital. For example, how business capital evaluated in reality is always more than the accounting capital in the companies' ledgers. In fact, the accounting transactional rules recognize only vouchered change in value. Tangible, visible, and documented change in value will be recognized. Accordingly, accounting has been defined as a transaction-based evaluation model. These recognition rules have always made accounting transactions of assets, liabilities, and equities to be reported in the balance sheet at cost; which is the production side rather than customer side. This situation has led a number of business practitioners to inquire into the accounting lacks that are specific to business change. Two general explanations have been formulated to summarize this era. The first is that accounting and its recognition rules has become inadequate when valuing unique business assets. The second is that financial statements are minimizing business value because it has been designed to report static assets on hold.

2.2.2 *The second era of accounting studies (1980s-1990s):*

The decade of nineties has been described as "age of innovation". Knowledge management as an academic discipline clearly began after unprecented development of information technology and information systems for business purposes. With the explosive growth of business assets and organizations, knowledge assets have become somewhat synonymous to intangible assets in accounting. Knowledge as a new economic phenomenon has attracted the attention of business literature and thinkers (Wiig, 1997; Haanes and Lowendhal, 1997; Sveiby, 1997; Roos *et al.*,

1997; Nonaka and Takeuchi, 1995; Davenport and Prusak, 1998). According to Wiig (1997), the company's viability depends highly on "the competitive quality of its knowledge based intellectual capital and assets and the successful applications of these assets in its operational activities to realize their value to fulfil the company's objectives". Through this era, the concept of intellectual capital has been used for the first time instead of the accounting term intangible assets (Edvinsson and Malone, 1997). The problem which has been highly recognized is how to report intellectual assets in systematic way in the absence of accepted accounting measurement methods and guidance of regulatory setters (Brennan, 2001). Knowledge research has been plagued by a variety of the accounting problems that can lead one to question the extent of validity of accounting model. In fact, this model looks backwards and focuses on tangible assets. Tangible (or hard) assets have considered driving engine of the industrial revenues such as physical capital, fixed assets and inventory (the assets of the industrial revolution). It is a transaction-based evaluation model. This has led a number of practitioners to inquire into the lacks that are specific to knowledge nature. In addition, in view of the growing emphasis on knowledge management and the related accounting problems, the urgent differentiation between accounting capital and flow of intellectual capital has been addressed (Corrado *et al.*, 2006). This a new theoretical perspective was necessary for analyzing revenue power of knowledge companies, because most of the accountant's community thinks that sale of inventory is more important than development of products. Accordingly, the interdisciplinary literatures analysis has indicated that knowledge-intensive companies have three major accounting-related problems: partial excludability; inherent risk; non-tradability (Lambe, 2002).

According to the knowledge literatures, the problem of accounting against knowledge has two dimensions: the first is the asset (whether financial, technological, or intellectual) cannot be well determined. Further, the measurement of the critical success factors of knowledge business model cannot be defined in qualitative and quantitative terms (Hall and Mairesse, 2006). The accounting literatures have classified the knowledge critics against accounting into structural and contextual. The structural critics are related to the rigid reporting format of financial statements. In contrast, the contextual critics have discussed the practical aspects of accounting in terms of rules, regulations, and assumptions. The literatures reviewed indicate that the reporting power of financial statements is full of controversy associated with outdated reporting style of financial statements (Canibano *et al.*, 2000). The critics against reporting power have been allocated to accounting equation that has undermined the comprehensive reporting power of accounting. The underlying debate has created huge controversy on how to reconcile the reporting power to match the priorities of the knowledge management (Canibano *et al.*, 2000). The monetary-based nature has to be overcome because very little of knowledge has to do with money. The distinctive debate about knowledge problems of accounting has concluded that the priorities of knowledge management still cannot be disclosed in general-purpose financial statements (Hall and Mairesse, 2006). The reality is the serious problem of accounting is laid in its theoretical rules and reporting formats. This matter has received much attention in the literature, often in the form of discussions around validity of accounting model. Accounting rules are key cause beyond accounting model's failure. As set of these rules were set up to evaluate hard or (tangible) assets. The accounting standards either IFRS or GAAP recognize and report

only the contractual intangible that match the accounting terms of definition. That's mean each set of standards doesn't recognize and report business intangibles such as knowledge assets. According to such fact, these standards rules out knowledge assets from being recognized in the balance sheet. These standards and the underlying treatments detract from the quality of information provided in the financial statements. This because the theoretical logic of the accounting has been established in isolation of technology. However, this logic match more the requirements of machine technology rather than knowledge (Lev, 2001). Table-I presents comprehensive comparative for accounting of operations in contrast to accounting against knowledge. The differences are significant and relates to dynamic nature, recognition rules, reporting power, and theoretical objectives. Knowledge management represents an opportunity to derive accounting model to be intangible assets based with future orientation. The current accounting model is deficient and full of shortcomings in relate to knowledge. The key assumption of knowledge management is the migration of competitive advantages from tangibles to intangible assets. The physical assets are not providing a source of significant differentiation. The company's viability depends directly on the competitive quality of its knowledge assets, and the successful application of these assets in all its business activities (Holsapple, 2003). The competitive advantage of knowledge assets flows from the nature, creation, ownership, protection, and use of difficult ideas to imitate these assets. To be competitive, proactive, and dynamic, business companies must manage knowledge assets systematically. Two key characterizes has outlined the development of accounting against knowledge throughout this era. The first is that "accounting and its models has boiled to its bones and the theoretical bases of accounting are outmoded" (Stewart,

2001). The second is that "Accounting model has become something of an anachronism in knowledge management era. It is a legacy of the industrial age, and as a result, if the current situation of accounting is going to be continuing, prestige of accounting will be lost" (Drucker, 1999).

2.2.3 *The third era of accounting studies (2000s-Present)*

This era can be described as the move to find the hidden gold. It is vital to understand that throughout this era, the terms of intangibles, knowledge, and intellectual capital are usually used interchangeably in spite of the difference in the contextual content of these concepts. The terms of intangibles has been used in the accounting literature to define "an identifiable, non-monetary asset without physical substance" such as patents, trademarks, fishing licensees, and computer software. The term of identifiable means the contractual according to the accounting definition. The problem is not all the intangibles are identifiable such as internally generated good will. The term of knowledge assets has been addressed by economists to define the accumulated process resources as drivers of business success on a specific area of practice. Knowledge assets are less tangible and more depend on human cognitive and awareness (Nonaka, 1991). The term "knowledge assets" was first introduced in the Baldrige Glossary in 2003. The popular examples of knowledge assets includes process documents, guidelines, and templates. Finally, the intellectual capital has been used in the management and legal literature to refer essentially to the same thing: a non-physical claim of future benefits. The examples of intellectual assets include human resources and new organizational structures (OECD, 2008). The nature of knowledge assets is especially sensitive for number of reasons: first it's does

not have a physical or financial embodiment; second it's internally generated, developed, and practiced; and finally its non-tradable which means cannot be readily bought or sold (Austin, 2007). The virtual nature of knowledge assets was further complicated their management and accounting. Unlike the physical assets, the knowledge assets are unique assets expected to have value (because of its uniqueness) which play important role in increasing return on scale. A real understanding for the nature of these concepts has been developed (See Table-I). The virtual nature of knowledge assets further complicates their accounting. Accordingly, knowledge assets are reflected by investment in research and development. The imperatives of knowledge management entail a new accounting paradigms for measuring and reporting research and development. The reporting power has so beautifully disclosed the operational transactions for a half-millennium. The balance sheet is now failing to keep up with the wave of knowledge management. The accounting's failure to disclose knowledge capital is not just a theoretical problem. It costs all the stakeholder's money and time. Accounting does not recognize the internally generated intangibles such as research and development, brands, and employee talent. These assets are the engine of knowledge management (Lev, and Gu, 2016). This accounting treatments underestimate financial performance of successful knowledge management. Today, accounting face a situation in which it says that knowledge assets are valuable and tend to be the future of business organizations, but cannot say how (Blagu and Lekhi, 2009). The problem of accounting against knowledge lays in the ways of measuring and reporting knowledge assets. The financial statements have been the white and black screen to show the operational assets images for a half-millennium. Unfortunately, these statements are now failed

to show knowledge assets colored images. The accounting model is acting as convertor to turn these images. The accounting's failure to generally measure and disclose knowledge assets is a theoretical problem with dramatic side effects. Uncertainty is one of recognition problem and because of that, accounting recognizes poorly (or partially) knowledge assets such as research and development, brands, and employ talent. In contrast, these assets are considered the value engine of knowledge business model (Lev and GU, 2016). The problem of accounting is that does not recognize internal knowledge management initiatives such as technology under development, knowledge of the employees, manufacturing arrangements, and marketing and distribution systems (Canibano *et al.*, 2000). Accounting only recognizes knowledge assets purchased from others in spite of the internal investments is a key source of future profit. This evaluation rule underestimates figures of successful knowledge initiatives and business performance. The inconsistencies of accounting rules that related to knowledge assets under both GAAP and IFRS diminish the usefulness of the financial statements. These deficiencies have been empirically explored in several research projects that suggest loss of relevance, comparability, consistency, and neutrality (Smalt and McComb, 2016). The accounting model by its status qua is insufficient to match knowledge rituality. This view is circulated in most of the business and accounting literatures due to sum of the shortcomings and lacks. However, the discussions centered on the fact that the traditional accounting theory is not providing a source of significant differentiation (See Table-I). The company's viability depends directly on the competitive advantages of its knowledge assets (Holsapple, 2003). Extant researches that have discovered nature of knowledge assets served as the data source for conceptualizing the new

proposed framework. The value is generated by innovation (discovery) and enhanced by the unique organizational designs or human resources practices. Prusak 2001 identified three major nexuses of knowledge assets: discovery, organizational practices, and human resources. These assets are performing in

are often created by a unique combination of the innovation and organizational structure. Finally, human resources practices are generally identified as a communicator to guarantee continuity of value creation and survive of knowledge assets (Holsapple, 2003). Considerable research projects have

Table I: Accounting against knowledge vs. Accounting for operations

	Accounting Against Knowledge	Accounting for Operations
Dynamic Nature	<ul style="list-style-type: none"> ✓ Knowledge System. ✓ Horizontal. ✓ Financial and non-financial. ✓ Relationships ✓ Inter. ✓ Integrated, cross-disciplinary, ad hoc, fluid, and collaborative. ✓ Success in expanding relationships. 	<ul style="list-style-type: none"> ✓ Information System ✓ Vertical ✓ Financial ✓ Visible and physical activities. ✓ Intra. ✓ None integrated, closed, restricted, and has boundaries of single businesses. ✓ Success in control.
Recognition Rules	<ul style="list-style-type: none"> ✓ Invisible flow of knowledge. ✓ Value Creation. ✓ Flexible, collaborative, and dynamic. ✓ Strategic. ✓ Comprehensive. ✓ Technical. ✓ Centered on knowledge. 	<ul style="list-style-type: none"> ✓ Physical flow of resources ✓ Value Realization. ✓ Rigid, isolated, and static. ✓ Operational. ✓ Financial. ✓ Procedural. ✓ Centered on data
Reporting Power	<ul style="list-style-type: none"> ✓ Focused on technology process. ✓ Supporting collaboration with business partners. ✓ Networking. ✓ Extracted from e-business model. ✓ Reporting value. 	<ul style="list-style-type: none"> ✓ Focused on accounting process. ✓ Supporting performance of recording and reporting process. ✓ Blocking ✓ Extracted from t-business model. ✓ Reporting cost.
Theoretical Objectives	<ul style="list-style-type: none"> ✓ Creating and sharing knowledge ✓ Value proposition matrix: balancing performance, behavior, and technology. ✓ Reporting Dynamic: Instant and online. 	<ul style="list-style-type: none"> ✓ Measuring profitability. ✓ Value proposition matrix: cost, time, and quality. ✓ Reporting Dynamic: Periodical.

an integrated triangle for the value creation, updating, and commercialization. The unique discovery is acting as an engine of innovation process and updated by investment in research and development (Amidon, 2003). Moreover, brands as a major form of knowledge assets

been managed (individually and by bodies) to develop alternative accounting models that overcome the lacks of accounting against knowledge management. The key feature of those models is that none of these developed models in the accounting literature has

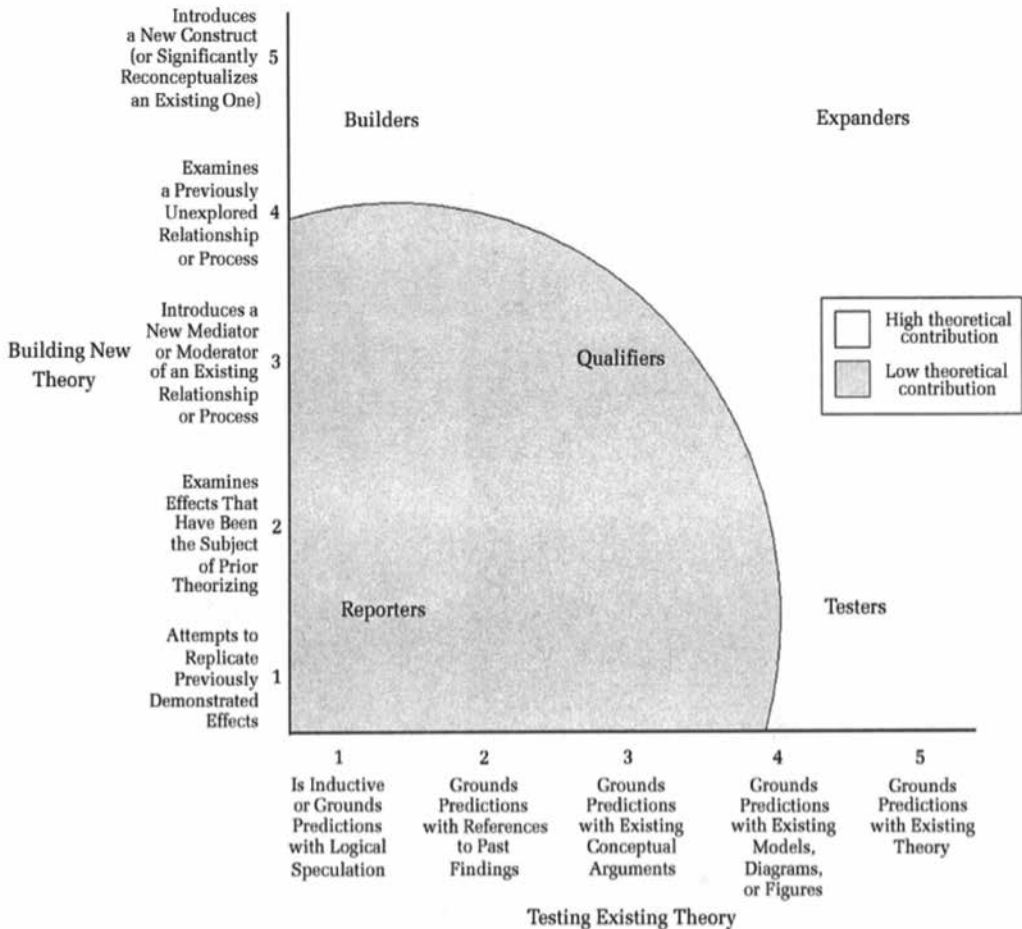
approved generally. In addition, these models provide only improvements by integrating more rules but are not replacing the existed accounting model. Further, these alternative models are based on new techniques (such as discounted present value) that match the managerial reporting more than the financial. However, these models are not that much relevant because it cannot provide comparable information about knowledge activities across industries and companies. Finally, no one of the proposed models adequately match the reporting requirements of the existed accounting model practices especially in the areas of uncertainty and risk quantification (Blaug and Lekhi, 2009). The imperatives of the knowledge management entail new paradigms for managing, measuring, and accounting of knowledge assets. A new accounting theory is really needed to support the development of knowledge management. The development of such theory will provide an opportunity to derive accounting to be knowledge assets based with future orientation.

III. THE RESEARCH METHODOLOGY: RADICAL, INTEGRATED AND VALUE PERSPECTIVE BASED

The accountant's community has debated for a long time the validity of accounting model against knowledge. The debate has been started by intangibles whether to be reported as expense or capitalized as asset (Gherai and Balaciu, 2011). This debate has triggered the necessity to update the accounting rules to communicate reliable business information. Information vs. value is the new argument in accounting (Hakansson *et al.*, 2010). According to the information perspective, accounting is an organizational engine to provide information. Accounting is not primarily a tool for measuring

or estimating value, but is a source of potential information. The information content school views the financial measures as measures of information events, not of value (Christensen and Demski, 2003). In business and knowledge management literatures, several research projects and reports have identified the serious criticisms against the accounting model. The main historical cause of the challenges and problems has been the logical architecture of the working mechanism (Anton, 1966; Drucker, 1999; Brennan, 2001; Blagu and Lekhi, 2009; Smalt and McComb, 2016). Thus, the current study is a qualitative explanatory research adopts value perspective to structure a theory of accounting against knowledge management. This paper introduces well defined paradigm to analyze the structural components of accounting in very critical sense to knowledge. The proposed research methodology combines the definitional expositions of Bukh, 2003; Marr and Spender, 2004; MERITUM Project, 2002; Mouritsen, 2003; Prism, 2003; and Howell, 2008. It's a radical and calling to shift the orientation of accounting from reporting value realization to value creation. Further, the conceptualization of theory building proposed by Colquitt and Zapata-Phelan (2007), has been followed when determining how a new theory has to be structured. Accordingly, re-engineering the structural components of accounting is a must to match the necessities of knowledge management. The implementation of the radical research methodology has taken five steps (See Figure-2 below). The first step was based on reviewing literatures to identify the problems in terms of paradoxes and lacks. The current body of literatures dealing with these problems is still fragmented. The reviewed literatures of business and knowledge management have identified the transactional rules and reporting format as two key obstacles of accounting for knowledge (Holsapple, 2003; Stewart, 2001). The theorists

Figure-2: A Taxonomy of the Theoretical Conceptualization
(Source: Colquitt and Zapata-Phelan, 2007)



of accounting also identified that the routine regulating mechanism of accounting needs radical restructuring-more than updating the measurement techniques (Howell, 2008). The dysfunctionality of these components was the key problem against accounting for knowledge initiatives. Thereafter, these transactional components have been analyzed and matched with necessities of knowledge management to examine the theoretical and practical validity of these components. The second step has investigated the whole side effects of all the above problems especially the gap between accounting and market capitalization. Thereafter, the radical research methodology

of this paper has been designed as more widely accepted approach to structure a new accounting theory against knowledge management. The typology of the research methods has been designed carefully to integrate all the literature trends whether in accounting, business or knowledge management. The practical solutions developed identify the criteria for solving these lacks and paradoxes that need to be reported. The knowledge management's literatures determines the format of the information required, its nature, its scope, and the accounting rules that need to be applied. The proposed format of financial statements may help to draw a milestone in the way of

constructing a new accounting theory against knowledge management. All these processes are clearly reflected in Figure-2 below. Finally, structuring a theory for accounting against knowledge management faces a unique challenges and critics. The first of all these challenges and critics, it may go contrary to the popular beliefs of the accountant's community. The second is that construction of an accounting theory needs more clarification in view of both GAAP and IFRS. Finally, this study is small and humble contribution in the way of constructing a new accounting theory against knowledge management.

IV. META-THEORY: GUIDELINES FOR PROSPECTIVE SETTING AND PRAGMATIC GROUNDING

4.1 Re-inventing rules of accounting recognition

As mentioned previously, the current paper is an exploratory research undertaken to explore the necessities of accounting against knowledge management. The adopted methodology has been based on analyzing the structural body of accounting in very critical way to knowledge nexuses. Large bodies of literature are surveyed to exploring lacks and shortcomings of the accounting model. However, analyzing these lacks is urgent and desirable to gauge the extent of validity. Accounting model has been under huge critics because of what can be called "preventing the wheel". The effective research clearly shows a perceived technical gap when investigating knowledge management literature. It is also evident from the literature that the problem of accounting is neither rules nor reporting format. Further, the conflict between accounting and knowledge is particularly high in recognition of intangible assets. A review of research into accounting dilemmas indicates that almost all the previous

researches have focused on problems of accounting rules that relate to recognition of knowledge assets. A second preliminary paradox that must be disposed is the invisibility of knowledge assets and revenues. Unlike the industrial, the knowledge business model does not care about owing assets. It's promotes the idea the fewer assets the better and as a consequence strip off balance sheet of non-current assets (Holsapple, 2003). A traditional business model is a collection of hard (or physical) assets that bought and owned as a measure of the capital health. Accounting against operations is pushing to enhance the size of the balance sheet. In contrast, knowledge management is based on totally different ideas, mechanism, and does not care about owing assets. Its strips balance sheet of non-current assets. This phenomenon has been called the victories of information over inventory. At bottom, accounting terms to define and recognize asset still same as were set up throughout the industrial era. The accounting rules of recognition ignore the investment in discovery and learning as a driver for creating knowledge assets. This problem in consequence reduces the reliability of accounting to provide relevant and timely information about knowledge initiatives (Haskel, 2007). The operational accounting ignores the implementation phase of value chain where value usually created or destructed (Lindsey, 2001). The successful development for the new generated ideas is creating considerable value, but actual transactions may take years to materialize. As a result, disconnection between market and book values is happened (Pandian, 2011). The generally recognized problem is knowledge assets in terms of how to be recognized, measured, reported, and interpreted. Unfortunately, only few researches have addressed the accounting theoretical settings. The failure of accounting model to address knowledge management initiatives can

be divided into: 1. the failure to master the specialized vocabulary of knowledge management; and 2. the failure to reflect the systematic process of knowledge management. Understanding the logic which underlies the knowledge management should not be a professional judgement based, but broader in scope and more specialized in nature. According to the methodology of this paper, it could be said that the advent of knowledge management has shaken the recognition rules and in consequence the relevance and reliability of accounting information. The accounting rules by its state qua have become outdated, and no longer valid to absorb assets of knowledge management. The treatments of knowledge initiatives by the existed recognition rules and practices have become inadequate. However, ignoring knowledge assets as result to rules of accounting (in particular, discovery and learning of the value chain) contributes to phenomena of information asymmetry of accounting. The current situation of accounting model facilitates the release of biased and even fraudulent financial information. The tangible recognition rules have been considered the driving engine of the operational revenues. Thus, emergence of knowledge business model entails a new accounting recognition rules that perfectly match necessities of knowledge management. It could be said that “reinventing the wheel” is urgent to cope with knowledge assumptions. Accounting theory needs to measure what is matter instead of how does measurement matter is? Investigation of accounting logic is needed, including the effectiveness of measurement techniques, timing of the measurement, and use of changing reporting formats. The role of accounting is imperative in articulating any shift for business change. Accounting change and reform need to address the conflicting issues with the transformational style of knowledge management. The preference for “replacing”

over “improving” in accounting for knowledge management means that the accountant’s community has to deal with assumptions of knowledge management seriously to develop a new accounting model. This paper contends that the extensive exploration of the various dimensions of lacks and shortcomings is an appropriate approach for judging validity of accounting model. The narrowness of accounting scope and recognition rules has restricted the accounting change. Accordingly, accounting has become outdated and no longer valid to absorb recognition of the knowledge management. This situation has driven the financial reporting to be away from business value. As consequences, gap of market value has been increased and accounting lost its direct influence on management decisions. This gap has created what can be called value paradox. It’s a concept of knowledge management which compares knowledge extraction to knowledge embodies (Boisot, 1998). It has emerged since the last two decades because of the differences between accounting and knowledge management in terms of interests, measurement techniques, and knowledge assets evaluation. This value paradox is denying the role of accounting as a communicator of business information. In accounting, value paradox concept has taken different context and applications. Initially, knowledge management is eighty percent about customers and culture changes (Leibowitz, 1998). The practices of knowledge are directly linked with organizational performance and measured based on customer loyalty, product differentiation, and operations excellence (Zack *et al.*, 2009). Generating new knowledge is a key source of competitive advantages and profit, while lack of knowledge may lead to the failure (Mietlewski and Walkowiak, 2007). The dynamic of knowledge process was always the center of the theoretical arguments. Knowledge management is a value

and future based model. In contrast, the accounting researches have addressed the issue of intellectual as a key reason beyond the value paradox. Accounting model is a static and cost-based evaluation model designed to reflect results of the operational process. Thus, accounting assets always appear in the balance sheet at cost, which is the production side rather than customer side (Amidon, 2003). This key difference must be taken when reviewing the validity of accounting model for knowledge management (See Table-II). The old logic looks backwards and focuses on tangible assets. This may match the generation of the industrial revenues. Accounting for knowledge management entails new accounting theory as the theoretical bases of industrial accounting have been outmoded. The problem of the value paradox lays in how to translate the future into an asset, not a liability (Amidon, 2003). This reflects the conflict between accounting values and knowledge values. The industrial accounting values were reasonable, quick, and easy ratio to guide investment decisions. The reliability of these values always restricted to very rigorous economic rules. The infusion of knowledge management has broken down the accounting values. The nature of knowledge values are largely hidden with less market capitalization recognized in the financial statements (Holsapple, 2003). The huge investment in knowledge assets coupled with the partial accounting recognition rules have much declined the accounting values and then usefulness of accounting information (Austin, 2007). The recognition rules sharply distinguish between accounting and knowledge assets (Stone and Warsono, 2003). This distinction is done to meet the requirements of asset definition, and as a result for such accounting treatment, ignorance of knowledge assets is created. The absence of knowledge assets is contributed to the huge gap between market capitalization and book value of

equities. The demise of accounting has come as a result for ending the marriage between the historical cost of accounting assets and market value of knowledge assets. Boulton *et al.*, (2000) have set stages for the paradigm shifts in the accounting model. They have compared accounting and knowledge values for more than three thousands five hundreds of US companies over a period of two decades. The decade of fifties has entitled as the era of perfectibility because the accounting model used to provide more than ninety five percent of the market value of the industrial companies. That was valid when accounting values were a reliable measure of the industrial assets and accounting rules are performance metrics of the industrial businesses. Later, every value has gone astray to its own way. The accounting values now provide only thirty percent of the market value of knowledge companies (Lev, 2001). The accounting values are not matching knowledge values precisely, because financial statements tell what has happened not what expected. The increasing irrelevance of accounting information is indicated by the paradox of accounting model cost vs. value. However, ignoring knowledge assets as result to rules of recognition contributes to phenomena of information asymmetry of accounting. That is, since the ignorance is at the heart of accounting model, restructuring accounting rules is a must to overcome the problems of the partial recognition. Finally, integration of the recognition rules with the practices of knowledge management is urgent for structuring a meta-accounting theory for knowledge management. For example, capitalizing research and development and internally generated goodwill. This rule can lead to subsequent changes in earnings and then improving relevant of accounting information (Hall and Mairesse, 2006).

4.2 *Re-designing revenue power on technology bases*

It is generally admitted that the emergence of knowledge business model has transformed the old realities of accounting. Knowledge management are technology intensive, inter-organizational, visionary, value added, and customer-based. The high obsolescence of knowledge had made it increasingly difficult for any company to survive. As technology transforms the economics of doing business, a knowledge business model is driven by disintermediation and connectivity. The transaction values have been replaced by interaction values (Amidon, 2003). Thus, business revenue power has become a function of interactivity and connectivity (Barnes and Hunt, 2000). As for interactivity, intensive use of information technology has established real-time and more interactive relationship between companies and customers. This creative interactive is enhancing customer satisfaction and creating new paradigms of product design and customer service (See Figure-3). The fast pacing of technology and high obsolescence of knowledge had created another paradox for the accounting model. The going concern assumption of accounting has come under a stream of discussion (Keen and Balance, 1997; Prusak, 1997; Barnes and Hunt, 2000; Janszen, 2000). In recognition of such reality, the dynamic nature of information technology has transformed both the economics and ways of doing business. Growing around this issue, the accelerated changes have resulted in the globalization of markets and emergence of new organizational forms. As a result, the organizational boundaries have been shifted and the organizational revenue power has been transformed (McKeown and Philip, 2003). However, the dramatic shifts happened in the drivers of business revenues towards greater flexibility and responsiveness (See Figure-3).

The growing popularity of e-commerce and e-business technologies has transformed the drivers of knowledge business model especially in terms of disintermediation and connectivity. Further, reengineering business infrastructure has largely increased traceability in consequence of interactivity and connectivity applications (Barnes and Hunt, 2000). However, application of lean/JIT technologies has significantly led to high level of standardization, formalization, and integration within and outside business organizations (Rondeau *et al.*, 2000). Thus, improve customer architecture has successfully incorporated customer's community into the companies through sophisticated real-time and more interactive applications. This creative paradigm has enhanced customer partnerships, engagement, satisfaction, and loyalty especially in product design and customer service (Despres and Chauvel, 2000). The new transactions based relationships have been very energizing to increase business opportunities and revenues (Cohan, 2000). The success of integration process reduced lead time and increased relationships of supply chains practices. The ubiquity of the internet technology and new forms of businesses has fostered the creation of shared global market space (Evans, 2003). These integration based practices have improved the operational efficiency and facilitated markets integration which in result enabled the horizontal growth (Hakansson *et al.*, 2010). In attempting to investigate the impacts of these technologies on accounting model, the extant literatures indicate that these challenges are not easy questions to be answered. The business trend detailed above is figuring out a key fact that a real shift happened in the mechanism of revenue power in terms of style and nature of transactions. Together all these technology innovations have shifted the drivers of revenue power from the financial assets to knowledge

assets. A new challenge is how to manage, measure, report, and maximize the new revenue assets such as customer's loyalty. As has been mentioned previously, the problem of the accounting model is a tangible one in terms of it account to the cost of raw material and labor. These realities are the production side (cost realities) rather than the customer side (value realities). There is, however, another dimension of the problem is that how to account for the time lag between invention and innovation which can be lengthy. The knowledge management literatures posit a logical assumption that is successful knowledge investments should improve financial performance by increasing sales and decreasing expenses or both (Stone and Warsono, 2003). Unfortunately, this time lag produces large and immediate expenses which lower earnings of companies investing in knowledge assets. Perhaps this practice reduces the accounting reliability as a business communicator of financial information. Paradoxically, the accounting model used to report the traditional profit rather than the electronic profit. The nature of both is totally different in terms of drivers, transactions, and mechanism of recognition (Cohan, 2000). Furthermore, the same level of change happened to cost of goods sold as a key component of calculating the accounting profit. The cost of goods sold of the traditional profit has been designed to accommodate both the cost of the raw materials and direct labor. The two cost elements are a mile stone of the cost of the industrial products. Further, the size of those two cost elements reaches approximately seventy percent of the traditional revenue. The logic of this operations oriented formula is no longer valid under the assumptions of the knowledge management. The priorities of knowledge companies produce different arguments for the logical adequacy of the cost of goods sold. The research and development associated with customer loyalty

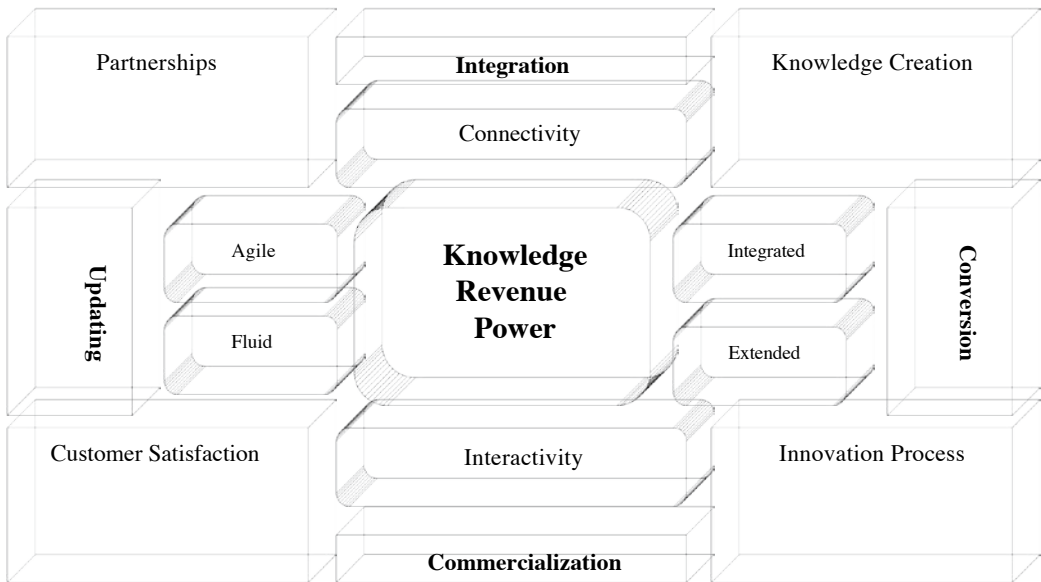
is the key engine to create the knowledge profit. Accordingly, the costs of raw material and direct labor are no longer vital to reflect the realities of old-line business model. The same fact is also valid to the working capital as one of the old realities which drive earnings of the traditional profit (Mohammad, 2013). In contrast, the expenses of research and development associated with knowledge creation have become significant and urgent for the existence of any knowledge company. The notion to be highlighted here is that the accounting model has been built on drivers of the traditional profit rather than the electronic. However, a different perspective of cost of revenues or cost of managing knowledge's base needs to be replaced instead of cost of goods sold. Another dimension of the problem is that successful knowledge management should improve financial performance by increasing sales and decreasing expenses or both. In view of the new situation, accounting revenue power has to be redesigned to combine technology, market, customer's base, and business practices to create the desirable value and growth. These applications take the form of new products and services, the development of new markets, and the introduction of new organizational form (Amidon, 2003). This systematic cycle increases net value for customers. Increasing customer loyalty can be a source to create extra cash flows and then increase shareholder value. Thus, the structure of statement of cash flows has become useless for knowledge management initiatives. The cash flows of knowledge companies are triggered by introducing new technology which acts as a driver for new applications in the form of new products and services. The effective marketing of these products and service develops new markets and in consequence increasing the market shares locally and globally. Such dynamic process always contributes to growth and survives of which

entails the introduction of new organizational forms (Janszen, 2000). The success of this innovation processing cycle always increases net value for customer's community and eventually their loyalty. The interesting advantage to note is that the result of the above process can be a source to create extra cash flows and then increasing shareholder value (Holsapple, 2003). Not surprisingly, the major final impact will extend to affect both dividends and share prices through shareholders value. Creating value is a must to create knowledge cash and increasing shareholder value. The comprehensive innovation process above entails a new accounting logic match nature, dynamicity, and final overall objectives. Paradoxically, the logic of knowledge management is based on generating cash through value creation process. These cash flows have unique drivers in term of technology, product quality, and customer's loyalty. Traditionally, business activities have been considered as drivers and key sources of accounting cash. The drivers of accounting cash are growth of sales, exploitation of profit margin, and tax percentage. However, the other group of drivers is related to investment in working capital and fixed capital. In consequence of such fact, the reporting format and structure of statement of cash flows has become meaningless for managing knowledge cash (See Table-II). The knowledge cash flows have different generation drivers which require re-consideration for sources to provide more reliable and relevant information. The logic of innovation process clearly highlights a gap exists between accounting capital and knowledge capital (Atkeson and Kehoe, 2005). The logic of knowledge as a source of cash is resulted from the nature of knowledge as an engine of value for customer base which creates loyalty. As already noted knowledge cash is a result of the successful value creation process and survive of knowledge companies.

Unlike the traditional change in cash, calculating free cash flows is more matching the dynamic of knowledge process. The philosophy of free cash flows highlights the fact that innovation is the only business for knowledge companies to survive. Therefore, free cash flows match knowledge cash earned with knowledge cash invested. Accounting for knowledge cash is less about individual or collective sales and costs and more about investment and returns. Knowledge investments are mainly intended to acquire future earning power through innovation. Thus, knowledge assets are defined as expenditures made with the intention of earning future revenue power through enhanced technology and knowledge process (Austin, 2007). Under the knowledge situation, the logic is totally different with varied business rules in terms of engines and ways to create the knowledge profit. In the technical sense, the intensive use of information technology has increased the agility and reduced the accounting assets through the integration with suppliers. Cash and sources to produce this important asset, is one of these issues that used to shape the accounting against knowledge. This paradox has been generated from the difference between accounting cash and knowledge cash. Knowledge is a critical enabler of cash through technology as key enablers of innovation. This reciprocal cycle has significantly affected the items of working capital to leverage value creation and streamline cash flows. Then, increase the probabilities of continuity and survival of knowledge businesses (Holsapple, 2003). The unique mechanism of knowledge business model has replaced physical capital by the high level of visibility and transmission of information (See Table-II). Accordingly, the overhead has been reduced by shifting the responsibility for managing and replenishing inventory to vendors. Further, the intensive use of e-commerce technologies has agile accounts

receivables by accelerating the collection process (Reynolds, 2001). In consequence of a new technology applications, working capital has been shifted. The replacement philosophy reflects huge investment in discovery and learning as a driver for creating virtual assets. These and other applications have initiated a new approach of the technological analysis of financial statements and decision making (Atkeson and Kehoe, 2005). As has been mentioned previously, this approach does not care about owing assets because knowledge management strip off balance sheet of non-current assets (Holsapple, 2003). The business literature addresses this approach under the technology management of business. Reducing the size of accounting assets and transforming the balance sheet to be a business liability are two assumptions of a new approach (Keen and Balance, 1997). The most important contribution among the several is reporting business value creation to provide relevant and timely information about knowledge initiatives (Haskel, 2007). In spite of transactions of value creation may take years to be materialized (Lindsey, 2001). The virtual process of knowledge management enabled the value creation through collaboration among all the stakeholders community. This in turn has affected the mechanism of how value creation transactions are happened and managed. The accounting model does not have an agile dynamic to follow these transactions and as a result, virtual assets are ruled out from being recognized as assets (Pandian, 2011). The virtual paradox also detracts from the quality of financial information provided in the balance sheet. Ignorance of virtual assets provides an example of the virtual paradox of accounting model. The literatures of knowledge management have called to redesign the accounting revenue power as a cornerstone to

deal with the impacts of such paradox. For example, capitalizing research and development, in-house built software is associated with subsequent changes in earnings and then improving relevant of financial information (Hall and Mairesse, 2006). The replacement of accounting assets by virtual assets has put an end to the role of the accounting model in managing business assets. In the move towards accounting for knowledge management, the accountant's community must also consider the virtual assets to sustain the new architecture of revenue power. In front of such situation, business managers need to know how much cash will be produced over what needed to manage the knowledge process. The accounting cash-flows calculated in Table-II will not be enough to match needs of knowledge management. The real concern of knowledge companies are producing cash and creating value. These jobs are function of continuity of knowledge companies. To match these goals, knowledge management needs to know free cash flows which need different assumptions. Accounting for knowledge revenues or accounting for relationships is less about individual or collective sales and costs within each relationship. It's more about investment and returns. The problem is no straightforward relationship links between investment in knowledge initiatives and business performance. Instead there is a complex relationship (Carlucci and Schiuma, 2006). This has been considered a turning point towards initiating knowledge and technological approach in building financial statements (Keen and Balance, 1997; Shaw, 2003). The essence of such approach is based on re-innovating recognition rules and redesigning financial statements to match knowledge assumptions. Figure-3 in below shows the new architecture of knowledge revenue power.

Figure-3: Architecture of Knowledge Revenue Power

4.3 Re-structuring knowledge financial statements

In order to present a birds'-eye view of the problems of accounting against knowledge management, the reporting formats of the financial statements shall be considered. The rigid reporting formats have fueled serious critics against accounting for knowledge management. The reporting formula of the financial statements does not match the basic assumptions of knowledge management. This formula was valid under the assumptions of the industrial management. The reality is that financial statements don't explicitly show any technological content whether in the theoretical philosophy or conceptual building block. As a result, the reporting format of financial statements is a data, backward, historical, physical, monetary, actual, and operations oriented. A major critic against accounting in terms of technology is that the procedural rules and standards have been theorized in isolation

of the technology. Fundamentally, these realities reflect a deeper problem in the theoretical assumptions and reporting structure of accounting. The critical theorists think that because of this logical lack, the accounting model was always static, complex, unrealistic, inefficient, and full of shortcomings. These logical weaknesses have generated undesirable consequences especially that related to financial statements and the information produced. In contrary, the emergence of knowledge business model has dramatically changed the way of doing business. This is very reflected in knowledge management as one of the key driving engines of this model. Thus, this paradox has emerged from the great gap in technology setting between accounting for operations and accounting against knowledge management. The meta-analysis of the technological context of accounting has identified a non-relationship between the technology and the theoretical philosophy of accounting (Hakansson *et al.*, 2010). At this point, accounting theory of operations is a

technology isolated discipline. It's a transactional engine of highly restricted non-technology terms, certain standards, and routine rules. As outlined earlier, knowledge management is a technology intensive, inter-organizational, visionary, value added, and customer-based (Carlucci and Schiuma, 2006). Value is created by innovative use of technology and fostered by interconnections. Also, technology enables value process to be more fluid, flexible, and global scale. The important idea is that the intensive use of knowledge technologies reflects the reality of value creation since it has replaced the transaction values by interaction values (Amidon, 2003). The failure of technology to create value means it will be cost intensive, useless, and counterproductive (Omotayo, 2015). The integrated set of interrelated factors such as technology, market, and organizational change has identified much of the controversial issues in financial statements (Janszen, 2000). This innovation arena has shifted the rules of the game. The logical shift draws a roadmap that goes far beyond operations and investment activities. In addition, risk and uncertainty are the core characteristic of knowledge cash, and without the adequate care, the crises may happened. These two key characteristics impede the accounting for knowledge cash. Similarly, the innovative management of working capital provides a source of knowledge cash (Keen and Balance, 1997; Shaw, 2003). The practices of knowledge approach have been designed to absorb the advantages of knowledge technologies to improve items and contents of financial statements (See Table II). This approach has been started since the mid of nineties to overcome lacks and shortcomings of operational accounting. In the 1995s, the questions have been voiced to show how the accountant's community should steer the available technologies to re-theorize accounting theory. The practices of this approach begin to

be matured through re-structuring knowledge balance sheet in consequence of the above calls for changes. As a reaction to these practices, the accounting practitioners, consultants, and researchers have proposed new models for measuring and reporting intangibles: The invisible balance sheet (Sveiby, 1997a), balanced scorecard (Kaplan and Norton, 1996) and IC (Stewart, 1997; Edvinsson and Malone, 1997) just to mention a few. Also, there are other practices have managed in Europe and U.S.A. to develop models for measuring, managing and reporting intangibles (see Johanson *et al.*, 2001, Larsen *et al.*, 1999). As a result, assets of knowledge financial statements have been reduced and less working capital managed. A new set of knowledge financial statements is formulated through combination of knowledge technologies and accounting theory. The features of this new matrix are evident in transformation of the traditional items of these statements. The financial assets have been shifted to business liability. In addition, managing zero or even negative working capital is a new reality of knowledge accounting (Keen and Balance, 1997). The development of sales technologies has reduced accounts receivables through rapid collection process. The result of such application is a balance sheet that reflects accounts receivables with period of many days and accounts payable with time period of months (Barnes and Hunt 2000). Inflation of current assets directly indicates that investments in knowledge technologies is inadequate. These technologies are the electronic payment, electronic data interchange, networking, and just in time. For example, doubling the accounts receivable indicates the inadequacy of the collection process because poor use of technology. However, the very low rate of inventory disposition is evidence of poor customer-supplier electronic links, and ignoring tools of just-in-time production and distribution (Young

**Table II: Financial Statement vs Knowledge Financial Statements
(Source: Stewart, 2001)**

Income Statement vs. Knowledge Statement	
Revenues Cost of goods sold Gross Margin EBIT Interest and Taxes Net Income	Revenues Innovation Cost Customer Cost Products/Services Cost Administrative Costs EBIT Taxes +/- None-cash adjustments Cash earnings
Balance Sheet Equation vs. Knowledge Equation	
Assets = Liabilities + Equities	Investments = Financing
Statement of Cash Flows vs. Knowledge Cash Flows	
+/- Operating cash flows +/- Investing cash flows +/- Financing cash flows Change in cash	Cash earnings Investing cash flows Free cash flows

and Tsai, 2012). It is widely accepted that, the efficient and intensive use of knowledge technologies to track manufacturing process, inventory, and sales opportunities has replaced physical assets by the organizational assets. As a consequence, knowledge companies have been reduced in terms of size and staff (Boulton, 2000). The above realities reflect the imperatives of the technology approach to construct knowledge accounting. These imperatives entail new paradigms for managing and measuring the financial statements. This new approach is not surprising since the technology has disrupted the traditional philosophy of accounting. To strengthen and being highly influential in knowledge discipline of business, the technology approach has extended to construct knowledge income statement (Blaug and Lekhi, 2009). The technology income assumes that the different stages of technical readiness shape the uncertainty and future profit of knowledge companies. The growing challenges of knowledge technologies provide real drivers

for the improvement and growth of each item of income statement (Martin and Leurent, 2017). This is valid for sales revenue, cost of goods sold, and all sorts of expenses such as research and development, selling, and administrative expenses. The above differences in accounting setting and the paradox related has to be considered because its create conflict that affect accounting information in terms of reducing reliability, relevance, and understandability. To bridge the theory of accounting to practices of knowledge management, it is urgent to mention that accounting information by its traditional formats is no longer useful and relevant for managing knowledge cash flows (Austin, 2007). The absence of knowledge assets provides reasons for not using financial statements by knowledge investors. The technological management of balance sheet is related to working capital and non-current assets. The dramatic growth in knowledge business has re-organized the priorities of companies. The accounting assets are no longer

the profit engine nor reporting priorities of knowledge business model. Further, the equity is no longer matching the requirements of the accounting definition in terms of ownership and effectiveness. Knowledge equity is not only owned to shareholders, but to stakeholders and based on customer's and employee's equities. These seismic logical changes have raised the critical questions about the validity of accounting equation and the reporting formats of financial statements. The critical theory of accounting clearly declared those two out of three components of the accounting equation is no longer valid and effective to reflect knowledge initiatives result. The critical theorists of accounting argue that the terms of assets definition have become inadequate and no longer valid to match the realities of knowledge management. It is inconceivable to address knowledge performance by the equation and financial statements of the industrial management. According to those theorists, the philosophical theory of accounting does not drive the practices of knowledge companies. The advocates of accounting essentialism have judged by consequences the validity of accounting against knowledge management. Consequently, they assessed the feasibility of creating knowledge financial statements to replace the industrial set (Amidon, 2003). The great emphasis of the new set has been centered on knowledge assets and value reporting to match assumptions and necessities of knowledge management. Applying the new models of business technologies has been started since the mid of nineties. As a result, assets of knowledge financial statements come down and less working capital is presented. A new set of knowledge financial statements is mingling knowledge, technology, and intellectual capital as a matrix of business success. A key feature of these statements is transformation of working capital from being financial asset to

business liability. In knowledge financial statements, business goal is zero or even negative working capital (Keen and Balance, 1997). For example, in knowledge financial statements, sales policies of companies aimed at rapid collection of accounts receivables. The result of such action is a balance sheet that shows accounts receivables with period of many days and accounts payable with time period of months. The cash surplus means that companies are probably not using adequate business technologies of investment and commerce. The large accounts receivable is an indication of the inadequacy of electronic payment, electronic data interchange, networking, and other concerned systems. However, large inventories, material and manufacturing goods are evidences of poor customer-supplier electronic links, and ignorance of just-in-time tools. Using information technology was not confined to substitute information with inventory or zero working capital. But using high speed data communication networks to track production, stock, and orders has replaced physical assets by virtual assets. As a result for such replacement, knowledge companies have been reduced in terms of size. The problem of the accounting model, is that accounting balance sheet or tangible assets sheet has taken its present format in 1868. Its format portraits the old realities of accounting for industrial management. The fundamental implication of the balance sheet equation is that total assets of business have to be equal to both liabilities and equities. The architecture of this equation has been tailored to match the management of accounting assets. More specifically, in terms of working capital (receivables and inventory), and non-current assets (machines and stores). Use of knowledge assets has changed the rules of the game and priorities of companies. As hard assets is no longer considered profit engine of knowledge business model. Further,

the equity of such model is no longer owned to shareholders. It's mostly founded in customer's and employee's equities. These solid reasons of change have provided the call for redesigning the architecture of balance equation to be: investments equal financings (See Table II). The money invested in knowledge businesses has to equal the money raised for it. In consequence, the terms of assets definition have become inadequate and no longer valid to match the realities of accounting against knowledge. All the previous reasons has acted as a driving force to assess the feasibility of creating 'knowledge financial statements' to replace the accounting set. Table-II below shows the accounting financial statements in comparison with proposed knowledge financial statements.

V. CONCLUSION

Knowledge management with its unique and dynamic assumptions has become a reality. It's a multidisciplinary paradigm in terms of technologies, practices, culture, and driving forces. Unfortunately, the floods of white water of knowledge management have sunk the accounting ship. A review of the extant literature highlighted the problem of the intangible assets as the only obstacle of accounting for knowledge initiatives. This

paper contributes to the accounting literature by identifying how accounting against knowledge management is totally different from accounting for operations. Exploring the serious notable lacks and shortcomings creates space for understanding the sources of the differences whether in the theoretical logic or business practices. Portraying the realities and paradoxes is critical in the way of constructing a new theory for accounting against knowledge. It is argued that the philosophical theory, conceptual framework, and structural formats are no longer adequate to match logic of accounting for knowledge management. In particular, recognition of assets, revenue power, and technology setting need to be re-considered to update accounting theory in knowledge era. The implications of the conflicting paradoxes are detailed in very comparative way to depict the current situation of accounting theory and practices. A creative destruction process is needed to reframe a cognitive theory for the knowledge accounting. Finally, it's appropriate to conclude that accounting has to move from being data discipline to be information arena to better matching knowledge necessities. Future research might examine how a new accounting theory for knowledge management should be structured in terms of the logical philosophy, conceptual building block, and reporting practices.

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THE NEW SILK ROAD: CHINA' ENERGY POLICY AND STRATEGY IN THE MENA REGION

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Abstract: China is in dire need of energy resources to sustain its growth. In recent years, China has been turning more to Saudi Arabia and Iran in the Middle East as well as Sudan in North Africa as trade partners to secure its energy supply and fuel its increasing growth. This paper explores China's energy policy in the Middle East and North African (MENA) region by studying three cases: Sudan in North Africa, and Saudi Arabia and Iran in the Middle East. Data was obtained from review of relevant literature. It is found out that China's oil policy is very much driven by the Beijing Consensus. China has applied an equity ownership strategy to have more control over oil flows as a shield against price fluctuations and to reduce supply interruption. Civil unrest and conflicts in the MENA region threatens to disrupt China's energy supply channels, which implies that China should work for peace in the MENA region to achieve its sustainable energy supply.

Keywords: Chinese diplomacy, energy policy, Middle East, North Africa, oil politics

I. INTRODUCTION

With more than 800 billion barrels of crude oil reserves, the Middle East has already made a name for itself. In North Africa, Sudan, Algeria, and Libya have also experienced increasing number of oil discoveries in the recent decades. As the second largest economy in the world, China is in dire need of energy resources to sustain its growth. Hence, China and MENA countries encounter mutual interests. Trying to secure its energy supply and fuel its increasing growth, China turned to Saudi Arabia and Iran

in the Middle East as well as Sudan in North Africa as trade partners. In 2013, China was a dominant trade partner to Saudi Arabia, Iran, and Sudan: China was the largest of Saudi Arabia's trade partners and the third largest importer of Saudi crude oil; China was the largest trade partner both of Sudan and Iran, as well as the largest importer of Sudanese and Iranian oil.

Since China's ascension to the world's top economies, China's energy needs have been studied as part of a growing literature.

Sager, Olimat and Kemp¹ have underlined the complexity of the relationship between China and oil-rich MENA countries, the direct benefits of such relationship for the states in partnership, as well as its global impact for other MENA oil-importers. Well known to protect Middle Eastern oil-sources to ensure that American energy needs are satisfied, one cannot analyze China's involvement in the region without touching on the United States' role. In *The Vital Triangle: China, the U.S., and the Middle East*, John B. Alterman and John W. Garver look at the trilateral relationship between China, the U.S., and the Middle East, arguing that all three regions' economies are intrinsically connected like the three sides of a triangle. The authors contextualize this complex relationship where each region's decision impacts the other two. China's trade relationships with some of the traditional U.S. allies (Saudi Arabia) and simultaneously with contested candidates (Sudan and Iran) has led to a deep politicization of China's involvement with these countries. Combined with the nature of oil as the most traded commodity in the world, China's oil interests has sparked discussions to say the least.

This paper explores China's energy policy in the MENA region by studying three cases: Sudan in North Africa and Saudi Arabia and Iran in the Middle East. We argue that China's oil policy is very much driven by the Beijing Consensus which advocates pure economic growth, and that Sudan, Saudi Arabia, and Iran

¹ Sager, Abdulaziz, 'GCC-China Relations: Looking beyond Oil-risks and Rewards', in Abdulaziz, Sager, Geoffrey, Kemp (eds), *China's Growing Role in the Middle East*. Washington, DC: Nixon Center, 2010, Pp. 1–22. Yuan, (2010); Olimat, Muhamad S. "The Political Economy of the Sino-Middle Eastern Relations." *Journal of Chinese Political Science* 15 (2010): 307–35, and G. KEMP, *The East moves West: India, China, and Asia's growing presence in the Middle East*, Brookings Institution Press, 2010, Pp. 232.

all have important mutual oil interests with China. Where necessary, we incorporate the concerns of the United States on diverse faces of the Sino-Sudanese, Sino-Saudi Arabian, and Sino-Iranian partnerships. We find that despite the apprehension exhibited by the United States regarding the increasing relations between China and the Middle East, China wishes to avoid direct confrontation with Washington and vehemently avoids the use of threat for economic gains. China's Middle East policy aims to mitigate or circumvent potential tensions with the US. Wu argues that China's involvement in the Middle East is only motivated by energy interests and is absolutely not going to weaken its relationship with the United States². Likewise, Chubin argues that China has constantly been cautious with the United States and has avoided provoking Washington³. By expanding its reach in MENA, China is also diversifying its trade relations—a concept that is encouraged by the Beijing Consensus—and so are simultaneously Sudan, Saudi Arabia, and Iran. Hence, the web of oil partnerships is shifting from an omnipotent bilateral relationship between the United States and oil-rich developing states to a more diverse arena where multidimensional relationships are possible between developing states.

We first examine China's growing need for oil, its strategy to ensure a steady supply, and its reasons for expanding its influence to the MENA. Since Chinese oil politics take place within the framework of the Beijing Consensus, we explain the dynamics underlying it and

² Wu, L. *The Middle East Oil and the Sino-U.S. Relations*. Cambridge: *Journal of Middle Eastern and Islamic Studies (in Asia)* 3(4), 2007. Pp-34.

³ Chubin, S. *Iran and China: Political Partners or Strategic Allies, in China's Growing Role in the Middle East: Implications for the Region and Beyond*. Washington: The Nixon Centre (2012). Available from <http://cftni.org/full-monograph-chinas-growing-role-in-me.pdf> [Accessed 21 November 2015].

compare it with the Washington Consensus that has dominated the second half of the twentieth century. Second, we look at China's involvement in North Africa through the case study of Sudan and analyze how this approach differs from its strategy in the Middle East. Next, we show that China has common interests with both Saudi Arabia and Iran. Thanks to the Beijing Consensus—which focuses exclusively on economics and consistently ignores political and cultural circumstances—Chinese energy security policy in the MENA has been particularly appealing to developing states. This is in contrast with the Washington Consensus, which frequently advocates political change in exchange for economic relations. Third, we provide an overview of the current partnerships and contracts between China and Saudi Arabia and Iran. Finally, we look at the challenges China faces in securing oil supplies and potential tensions it may encounter with the United States.

II. THE APPEAL OF THE MIDDLE EAST

Historically, the Middle East has always been the subject of strategic attention for various global powers all the way up to the modern times. After the First World War and the fall of the Ottoman Empire, Great Britain and France took control of the region and the infamous Sykes-Picot Agreement, which fragmented the region as a result of contrasting colonial influences, was signed. The Middle East was already known for its abundant natural resources, which had been exploited in the past. However, it was during this period of colonialism towards the early 20th century that technological advances led to modern armies assuming the hunt for oil as the newly coveted fuel of automobiles, aircraft, and other uses. Its rich natural reserves of easily extractable crude oil caused large-scale drilling operations to emerge, with the British taking the lead in Iran

in 1901 and the Anglo Persian Oil Company discovering oil in 1908⁴.

This structure of influence was sustained until the aftermath of the Second World War, where the Middle East experienced a shift in terms of the dominant external power. At that point, the United States had a growing economy and global political clout. The nation expanded its presence in the Middle East during the post-war period with an agenda, on which oil supply was a priority. Indeed, the need to fuel growth and compensate for what the United States could not provide from within its own domicile became a centerpiece of the country's foreign policy⁵. The United States saw a potential for secure oil supply in the oil-rich states of the Persian Gulf and the latter saw an opportunity to transform their vast oil reserves into direct wealth for their economies. American foreign policy continued to place an emphasis on strategically increasing its ties with the Middle East, as the country's dependency on oil grew for both domestic and military purposes.

III. CHINA'S FAST-GROWING NEED FOR OIL

With 1.3 billion people and one of the world's largest economies—second only to the United States.— China has a fast-growing need for oil. This need is not only driven by China's economic growth rate, but also by domestic factors like the increasing number of vehicles in the country, which jumped from one million a decade ago to more than 22 million⁶. China

⁴ Keddie, N. *Iran: Religion, Politics, and Society: Collected Essays*. London: Routledge. (1983).

⁵ Little, D. *American Orientalism: The United States and the Middle East since 1945*. University of North Carolina Press. (2008); Cooper, Andrew S. *The Oil Kings: How the U.S., Iran, and Saudi Arabia Changed the Balance of Power in the Middle East*. Simon & Shuster. (2011)

⁶ Olimat, M. *China and the Middle East: From Silk Road to Arab Spring*. New York: Routledge. (2013)

is, however, still a major producer of oil (and other natural resources). China holds Asia's largest oil reserves⁷. The problem is that its demand is so high and increasing, China still needs to import oil because its own reserves are not sufficient. Datta and Vigfusson fore see that due to its size and rapid economic growth, China will continue to be of primary importance in determining the path of global oil demand. China's future demand for oil will depend on both its economic growth and its energy choices. A high level of growth combined with energy-intensive choices could result in Chinese oil demand doubling by 2025. Even in a scenario with more moderate growth and less energy-intensive choices, China's oil demand would still grow by over 30% by 2025⁸.

In 1959, the discovery of the Daqing oilfield in Chinese territory had initially reassured China that oil supply would not be an issue for the Chinese economy and would help maintain self-sufficiency. However, due to intense economic growth in the 1970s, China became an importer of oil by 1993⁹. In addition, reformist leader Deng Xiaoping was convinced that the only path forward for China was economic modernization—which is fuelled by petroleum—and made his idea the centerpiece of China's domestic and foreign policy¹⁰. According to the International

⁷ Daojiong Zha and Meidan Michal, *China and the Middle East in a New Energy Landscape*, The Royal Institute of International Affairs, 2015. Pge 26

⁸ Datta D Deepa and Vigfusson Robert J., *Forecasting China's Role in World Oil Demand*, FRBSF Economic Letter, Research from Federal Reserve Bank of San Francisco, 2017. Pg 5

⁹ Sager, A. "GCC-China Relations: Looking Beyond Oil-Risks and Rewards," in *China's Growing Role in the Middle East: Implications for the Region and Beyond*. Eds. A. Sager and G. Kemp. Washington, DC: The Nixon Center. (2010)

¹⁰ Shirk, S. L. *How China Opened Its Door: The Political Success of the PRC's Foreign Trade and Investment Reforms*. Brookings. (1994); Olimat Muhammad S.,

Energy Agency (IEA), China's oil demand reached 10-12 million barrels per day in 2017¹¹ and Bloomberg reported in 2013 that China had overtaken the United States as the world's highest energy-using economy, with imports and exports reaching \$3.87 trillion USD¹². Similarly, British Petroleum Statistical Review of World Energy 2014 indicates that China was the world largest producer and consumer of energy overall in 2013¹³. However, China only produces 44 percent of the oil it needs¹⁴. As energy shortfalls could slow down and even stop China's growing economy, China's top priority since the 1990s has been to secure steady foreign oil supplies to fuel its economy¹⁵.

With its large oil reserves and its geographical proximity to Asia, the Middle East is a logical candidate to sustain Chinese economic growth. The Asian continent imports more crude oil than any region in the world and is currently the single most important market for Persian

China and the Middle East: *From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 53

¹¹ Gross Samantha, *Lower for Longer: The Implications of Low Oil and Gas Prices for China and India*, Foreign Policy At Brookings. 2017, pg 17)

¹² Bloomberg Business., "China Eclipses U.S. as Biggest Trading Nation." (2013) [Online] Available from: <http://www.bloomberg.com/news/2013-02-09/china-passes-u-s-to-become-the-world-s-biggest-trading-nation.html> [Accessed 21 November 2015].

¹³ British Petroleum. *Statistical Review of World Energy Workbook, Oil: Trade Movements*, Statistical Review of World Energy Workbook. London. (2014) <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy/review-by-energy-type/oil/oil-trade-movements.html> [Accessed 21 November 2015].

¹⁴ Al-Tamimi, N. "China-Saudi Arabia Relations: Economic Partnership or Strategic Alliance?" Durham: University of Durham (*HH Sheikh Nasser al-Mohammad al-Sabah Publication Series 2*). (2012).

¹⁵ Alterman, J. and Garver, J. (2008). *The Vital Triangle: China, the U.S., and the Middle East*. Washington, D.C.: CSIS Press. (2008)

Gulf oil producers¹⁶. While Asia is becoming the centre of the emerging global economic order, the Middle East is becoming its primary source of energy¹⁷. China is no exception; it is drawn to the Middle East because of its thirst for oil. When it became evident that China's energy production was insufficient to meet its growing needs, Deng Xiaoping extended its trade relations and economic ties with Middle Eastern and North African countries, including Saudi Arabia in the 1980s, and Iran and Sudan in the 1990s.

China considers the Middle East as a viable source to secure its energy imports, relies heavily on the Middle Eastern oil, and wishes to establish durable economic ties with Middle Eastern states on the long-term¹⁸. Yet, the 9/11 attacks and the context of the war on terror have given China a sense of vulnerability regarding its oil imports from the Middle East and forced the political leadership to consider new energy sources to ensure China's energy security. Furthermore, Zhao points out that China used to receive most of its energy supply from the Middle East and the Asia Pacific region, but the shift of Indonesia from an oil exporter to an oil importer in 2004 has left a gap among China's usual suppliers¹⁹. Therefore, China's spread of economic ties with the oil-rich countries of North Africa is driven by a desire to further diversify its oil supply. It should be noted that before the emergence of ISIS, almost half of the oil Iraq was exporting was destined for China. President Xi Jinping

condemned the horror attacks in Paris. The terror group brutally murdered 129 people in Paris (November 2015). He vowed to step up the fight in the wake of the "barbaric" attacks by militants linked to ISIS. Xi's comments have led to speculation that China is set to bomb the terrorists to oblivion in Iraq and Syria. China's leaders see terrorism—as well as separatism and extremism—as posing significant potential threats to a wide range of China's national security interests. These interests include almost every one of China's "core" interests such as social stability, national unity, sovereignty and territorial integrity, and sustained economic growth. However, it also includes several of China's emerging interests like protecting its citizens abroad, energy security, maritime security, and China's ability to shape an international environment that is conducive to pursuing China's national interests. China pursues a broad range of bilateral and multilateral efforts in support of its counterterrorism objectives. This includes the strengthening of cooperation through multilateral organizations such as the Shanghai Cooperation Organization and its Regional Anti-Terrorism Structure. China also cooperates, including with the United States, on issues such as port security, trafficking in international materials, and money-laundering to help support the development of conditions in the international environment that make it difficult for terrorism to thrive. This cooperation supports the U.S. National Strategy for Combating Terrorism. China is also pursuing wide-ranging bilateral security cooperation. This includes meetings of law enforcement and intelligence leaders, military exercises, security force training, border security agreements, and agreements for some Chinese partners to remove anti-PRC terrorist groups from their soil²⁰.

¹⁶ Sager, A. (2010) "GCC-China Relations: Looking Beyond Oil-Risks and Rewards," in *China's Growing Role in the Middle East: Implications for the Region and Beyond*. Eds. A. Sager and G. Kemp. Washington, DC: The Nixon Center. (2010)

¹⁷ Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 65

¹⁸ Wu, 2007. Pp 45

¹⁹ Zhao, H. "China's Oil Venture in Africa." *East Asia* 24.(2007)

²⁰ Tanner Murray Scot and Bellacqua James. *China's Response to Terrorism*, U.S.-China Economic and Security

Since China lost its self-sufficiency in oil supply, China's concern about oil supply and energy security has become widespread²¹. In this context, Muhamad S. Olimat argues that China's continuing growth and modernization is dependent finding and securing oil supplies²². China has three oil corporations through which it ensures that national energy security interests are secure: the China National Petroleum Corporation (CNPC), the China Petrochemicals Corporation (Sinopec), and the China National Offshore Oil Corporation (CNOOC)²³. With the Middle East's rich oil reserves, which make up over 60% of the world market²⁴, China's energy security and oil strategy are intrinsically linked to the region.

IV. CHINA'S EQUITY OWNERSHIP STRATEGY

To ensure steady oil supply, China has applied an equity ownership strategy: Chinese companies have tried to seek equity shares in oil projects abroad, hoping that this would allow them to have more control over oil flows and possibly reduce supply interruption²⁵. In the Middle East, China's first upstream investment and acquisition were made in Iraq. Since then,

Review Commission. 2016, Pg 5-7 available at: https://www.uscc.gov/sites/default/files/Research/Chinas%20Response%20to%20Terrorism_CNA061616.pdf

²¹ Hongtu, Z. (2010). "China's Energy Interest and Security in the Middle East." In *China's Growing Role in the Middle East: Implications for the Region and Beyond*. Eds. A. Sager and G. Kemp. Washington, DC: The Nixon Center. (2010)

²² Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 68

²³ Meidan, M. (2016). "The structure of China's Oil Industry: Past Trends and Future Prospects." *The Oxford Institute for Energy Studies*, WPM 66: 1-55. (2016)

²⁴ Sun, D. (2011). "Six Decades of Chinese Middle East Studies: A Review" *Bustan: The Middle East Book Review* 2: 22. (2011)

²⁵ Alterman, J. and Garver, J. *The Vital Triangle: China, the U.S., and the Middle East*. Washington, D.C.: CSIS Press. (2008)

China has been consistently investing in the oil sector, including engineering and drilling in Gulf Cooperation Council (GCC) states, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The China Petroleum Engineering and Construction Corporation (CPECC) started to get involved in Kuwait and Iraq in 1983 through subcontracts whereas the Great Wall Drilling Company (GWDC) captured drilling opportunities in Egypt, Qatar, Oman, and other parts of the Middle East²⁶. Qatar, the largest liquefied natural gas producer, recently strengthened a strategic partnership with China, including its participation in China's Silk Road Economic Belt; Kuwait has had strong economic ties with China since the 1970s (Sager, 2010); Oman has received \$600 million from Chinese investments in several sectors, including oil, petrochemicals, upgrading oil transportation's efficiency²⁷.

In North Africa, China has more or less applied similar strategies. China started its "going out strategy" to Africa in the late 1990s²⁸. In Africa, China has been involved at many levels through the Chinese Communist Party, which created multiple institutions specialized in African matters, involved agents of the party on the ground, ensured consultation with both central and local governments (when seen necessary), and even attempted to create bounds with some African civil society groups²⁹. Through official partnerships such

²⁶ Hongtu, 2010; Romano, G. C. and Jean-François Meglio (2016). *China's Energy Security: A Multidimensional Perspective*. Routledge Contemporary China Series. (2016)

²⁷ Sager, Abdulaziz. 2010. 'GCC-China Relations: Looking beyond Oil-risks and Rewards', in Abdulaziz, Sager, Geoffrey, Kemp (eds), *China's Growing Role in the Middle East*. Washington, DC: Nixon Center, 2010, Pp. 1-22.

²⁸ Zhao, H. "China's Oil Venture in Africa." *East Asia* 24. (2007), Pp.401.

²⁹ Raine, S. *China's African Challenges*. London: Routledge.2009, Pp 54

as the Forum on China-Africa Cooperation (FOCAC), China has also ensured a constant dialogue with African countries in order to implement Chinese promises in the continent. At the 2006 summit of FOCAC for example, various policies were established such as the creation of the China-Africa Development Fund and the creation of trade and economic cooperation zones³⁰.

Despite its obvious interest in African oil and natural resources, China refrained from over-emphasizing it as it prefers to project itself as a reliable and long-term economic partner for Africa, thus expanding its interests on a broad range of economic exchanges³¹. Aid, for example, has been one of the main channels used by China to improve its prestige and influence in Africa, including “[g]rant aid, interest-free loans and concessional loans are all deployed, as are non-monetary forms of aid, such as technical assistance and training, and other simulative tools such as debt relief and tariff exemptions”³². FOCAC and the China Export-Import Bank (China ExIm Bank) are also involved in several projects focusing on energy, infrastructure (with the construction of hospitals and rural schools) and transportation (especially related to oil facilities in oil-rich countries like Sudan). Thus, China is looking at a long-term relationship and is already thinking ahead, helping some African states to develop economically and to become stable partners in the future.

³⁰ Ibid. pp. 67

³¹ Large, D. “Beyond ‘Dragon in the Bush’: The Study of China–Africa Relations.” *African Affairs*, 107/426: 2008, Pp. 45–61. ; Sun, Y. “China’s Increasing Interest in Africa: Benign but Hardly Altruistic.” Brookings. URL: <https://www.brookings.edu/blog/up-front/2013/04/05/chinas-increasing-interest-in-africa-benign-but-hardly-altruistic/> (2013); Ayodele, T. “Misconceptions About China’s Interests in Africa.” *Georgetown Journal of International Affairs*. URL: <http://journal.georgetown.edu/misconceptions-about-chinas-interest-in-africa/>, 2015

³² Raine, S. *China’s African Challenges*. London: Routledge. 2009, pp. 65.

On the other hand, China has been implementing its usual ‘win-win’ strategy, ensuring that both trade partners have (real) mutual benefits. By developing the oil sector in Sudan, China secured important oil supplies and the Sudanese government secured one steady economic partner—it has only a few—along other compensations (i.e. arms). Since many African countries are particularly in need of infrastructure development, China also followed a coalition investment strategy; Naidu and Davies summarize: “Multiple Chinese state-owned companies across diverse industries are politically orchestrated to engage a recipient African economy in a way that can include tying energy acquisitions to funding for infrastructure development.”³³. Overall, China’s goal is obviously long-term but similar to the Middle Eastern case, it has focused on purchasing assets to avoid over-reliance on the global oil market and protect its access to oil at all times³⁴.

China is taking its commitment to Africa very seriously and has explored new venues for cooperation in addition to natural resources. Furthermore, China’s equity ownership strategy has proven to be very efficient in terms of control over foreign oil supplies but has raised immediate concerns in Washington who worried about China’s growing influence. Among others, Washington has been particularly interested in China’s economic strategy, known as the Beijing Consensus, in order to determine whether it could become a threat to American business strategy and United States’ energy security in the Middle East and North Africa. I will briefly explain the the Beijing Consensus and the Washington

³³ Naidu, S. and Davies, M. *China Fuels its Future with Africa’s Riches*. Johannesburg: *South African Journal of International Affairs* 13: 69-83. (2006), pp. 80.

³⁴ Taylor, I. “China’s Oil Diplomacy in Africa.” John Wiley & Sons. New York: *International Affairs* 82: 942. (2006)

Consensus. The Beijing Consensus is a term coined in 2004 by Joshua Cooper Ramo, Professor at Tsinghua University, Beijing, China and former Foreign Editor for *Time* magazine. In his famous piece titled *The Beijing Consensus*, Ramo offers an analysis of the Beijing Consensus, which he argues, can be an appealing alternative to the Washington Consensus. The Beijing Consensus is founded on three “axioms”³⁵. First, China focuses on constant innovation while the Washington Consensus abhors drastic change. Second, sustainability, equality, and quality-of-life are as valid indicators of successful economies as per-capita GDP. Lastly, unlike the Washington Consensus, which is thirsty for power and advocates a hegemonic world system dominated by the United States, the Beijing Consensus places full self-determination as the greatest priority and value. In practice, self-determination has been translated by increasing multilateralism *inter alia*. In the case of China’s oil policy, China created new bounds with Middle Eastern oil-rich states such as Saudi Arabia and Iran but also reached out to other partners such as North Africa, Sub-Saharan Africa, and South America to diversify its oil supply. In Ramo’s words, “China’s new development approach is driven by a desire to have equitable, peaceful high-quality growth”³⁶.

Unlike the Washington Consensus, the Beijing Consensus has sought to prioritize economics over political and cultural differences especially in energy policy. In other words, China has focused on finding good trading partners regardless of their political and cultural diversity. From China’s point of view, China’s approach to MENA is mercantilist, thus, motivated by, and targeted solely for,

markets, profits, and securing oil provisions³⁷. On the other hand, the Washington Consensus is famous for using economic relations to influence its partners’ political and cultural practices. The Beijing Consensus is rooted in realism and *realpolitik*, while the Washington Consensus is driven by neo-liberal principles. One can easily see that some of Washington’s trading partners who struggled to adapt to Washington’s standards appreciate the Beijing Consensus. This has regularly frustrated the United States who feared that the appeal of the Beijing Consensus would diminish Washington’s chances of exerting political influence by preventing it from spreading its neo-liberal model in exchange for strategic partnerships with developing countries—particularly the Middle East.

In *The Beijing Consensus*, Stefan Halper states that China definitely threatens American interests—economic interests in particular. He recognizes that the Chinese model strongly appeals to developing countries, the latter preferring “market authoritarianism and its high growth” rather than “market democracy and its freedoms”³⁸. Recent military interventions in the Middle East, such as the United States initiating war in Afghanistan and Iraq in 2001 and 2003 respectively, have left painful memories of foreign mediators in the region. China’s lack of demand for political reform in exchange for aid or investment was received as a welcome new opportunity for oil-rich Middle Eastern countries who saw an opportunity to govern and conduct politics in their own manner without external questioning. A similar

³⁷ Feng, Z. “Oil Nexus vs. Diplomatic Crux: China’s Energy Demands, Maritime Security and the Middle East Aspirations.” In *China’s Growing Role in the Middle East: Implications for the Region and Beyond*. Eds. A. Sager and G. Kemp. Washington, DC: The Nixon Center. Pp. 31-42. (2010)

³⁸ Halper Stefan. *The Beijing Consensus: How China’s Authoritarian Model Will Dominate the Twenty-First Century*, 2010 , pp. iii.

³⁵ Ramo, J. *The Beijing Consensus*. London: The Foreign Policy Centre. (2004), Pp.8.

³⁶ *Ibid.*, Pp. 6.

argument can be applied to North Africa, especially in the case of Sudan. Still, concerns have been raised with regards to the Chinese approach, some arguing that democratic values are looked down upon, if not endangered by progressive preference for China's model of economic development and that "Beijing's example illuminates a path around the West"³⁹.

Furthermore, the Beijing Consensus is not only unique, but it is also highly controlled by the state. In fact, although neo-liberal economic policies allow the private sector to flourish, the state is keeping a firm grip on their development, along with a grip on courts, the military, and information flow. According to Halper⁴⁰, China is operating "state-guided capitalism" by ensuring that powerful companies are instruments of the Party's foreign policy. Some fear that market authoritarianism, including its economic liberalization coupled with authoritarian politics, may be appealing to developing states, thus endangering the Washington's Consensus' agenda⁴¹. Exploring the different national effects of the Consensuses is beyond the scope of this paper but it is important to keep the key characteristics of each consensus in mind, as well as the fact that many MENA states are authoritarian in nature.

- In relation to MENA, there are two key dimensions to China's economic strategy. First, China seeks to expand friendly, multidimensional relations with Middle Eastern states and to remain politically neutral especially with regards to conflicts. China adheres to its foreign policy of non-interference in other countries' internal affairs, but at the same time we can observe that China is getting more actively involved in the conflicts in the

region, adopting a certain stance at the UN Security Council and making efforts for intermediation, for instance between Israel and Palestine. China has proactive stance towards political issues in the Middle East, which surely affects its oil business⁴².

Second, China wishes to access Middle Eastern resources by exploiting markets, capital, and petroleum to fuel its own economic drive⁴³. However, the Chinese elite knows that in the last decades, the Middle East has been considered as the United States' economic fief⁴⁴, and therefore, by trading with the Middle East, China exposes itself to closer surveillance by Washington. Further, China perceives American concerns about the proliferation of weapons of mass destruction, terrorism, and democratization as pretexts for interventions on the ground, accusing the United States from engaging in a "new kind of imperialism" through the control of natural resources.⁴⁵ Yet, China is driven by its wish to become the "friend of all and the enemy of none"⁴⁶ by trying not to directly confront Washington. In the same vain the Silk Road Economic Belt is grand initiative of China in the entire Eurasian region. China's Silk Road Economic Belt and 21st Century Maritime Silk Road initiative aims to connect Asia, Africa, Europe, and their near seas. The Silk Road promotes China and Middle Eastern States' Common Interests.

⁴² Daojiong Zha and Meidan Michal, China and the Middle East in a New Energy Landscape, The Royal Institute of International Affairs, 2015. Pg 25

⁴³ Alterman & Garver, The Vital Triangle, China, The United States and the Middle East, CSIS, Centre for Strategic and International Studies, Washington DC. 2008, Pg 82

⁴⁴ Shen, D. (2006). "Iran's Nuclear Ambitions Test China's Wisdom." *The Washington Quarterly* 29, 2: 55-66. (2006); Salman, Pieper, and Geeraerts, 2015; Li, 2015

⁴⁵ Cited in Alterman, J. and Garver, J. *The Vital Triangle: China, the U.S., and the Middle East*. Washington, D.C.: CSIS Press. (2008), pp.12

⁴⁶ Ibid, pp.4.

³⁹ Ibid. Pp. v

⁴⁰ Ibid., Pp 102

⁴¹ Ibid., Pp.139

The Silk Road Economic Belt is creating—or at least offering the potential to create—new shared benefits and common interests for China and the countries in the region⁴⁷. Related to this, the Silk Road invigorates Chinese investments in the region. Chinese and Middle Eastern economies complement each other in the field of merchandise trade, foreign direct investment. China also has several investment projects in the region, not only in energy, but also other areas, such as transportation, infrastructure. Under the definition contained in Xi Jinping's New Security Concept that 'development equals security', China's One Belt One Road initiative can be conceptualized as both the most ambitious infrastructure and security initiative today. Linking to the Road and Belt project will enable member states to not just compete for the benefits of increased Chinese investments on their own territories, but embed China's initiative in their own strategic goal of gaining a larger security footprint in the Asian region⁴⁸.

Overall, Hongtu summarizes China's energy security policy in three points. First, China acts strategically with MENA. Not only does China wish to import oil, but also to secure oil provisions. Thus, China has increasingly been involved in upstream investments and obtaining equity oil in foreign enterprises. Second, China's oil companies are largely "instruments of the State" and treated as "an arm of the government's international expansion"⁴⁹. Finally, a growing dependence on Middle Eastern oil has led China to rethink its policy

⁴⁷ Miller, T. Investing Along the New Silk Road. *Gavekal Dragonomics*. Ideas March 4., 2015. Pp25

⁴⁸ Verlare Jikkie, In *EU-China Security Ties; The One Belt One Road Initiative*. 2017, pp. 14 Available at: <https://www.clingendael.org/sites/default/files/pdfs/Thesis%20-%20Jikkie%20Verlare%20-%20A%20New%20Opportunity%20In%20EU-China%20Security%20Ties-%20The%20One%20Belt%20One%20Road%20Initiative.pdf>

⁴⁹ Hongtu, "China's Energy Interest," pp. 54-55.

and strategy by exploring new energy sources in North Africa, and to adjust its international behaviour to ensure that its domestic interests do not come in conflicts with its foreign policy, especially with regards to the United States.

As the great hegemonic power of the last century, the United States has extensive interests in virtually all energy-rich regions of the world. Thus, similar to its involvement in the Middle East, China is very conscious of American interests and wishes to maintain good relations⁵⁰. However, tensions have heightened since the 2000s. Following pure economic interests, China has repeatedly disregarded the international community's attempts to undermine North African dictatorial regimes with poor human rights records. Despite being optimistic regarding U.S./China relations, U.S. House of International Relations Committee Representative Christophe Smith still expressed some concerns stating in 2005: "the Chinese intend to aid and abet African dictators" and "gain a stranglehold on precious African natural resources."⁵¹

One of China's great advantages compared to Western private oil companies in North Africa is the fact that most Chinese oil companies are state-owned. Consequently, China is able to outbid competitors in major contracts without the short-term concerns of private companies that are bound by considerations of profits and shareholders⁵². Overall, China also has a political advantage because it is not associated with colonialism and imperialism. In North Africa, unlike the scramble for Africa led by the European powers two centuries ago, "economic engagement is accompanied by investment in and upgrading of infrastructure and transport facilities, which are central to

⁵⁰ Raine (2009)

⁵¹ Zhao, (2007), pp. 408.

⁵² Taylor (2006)

Africa's development trajectory."⁵³ China tries not to act like a 'grab-it-all' power, but rather like a trade partner exclusively interested in conducting business. Furthermore, as Taylor underlines, "China's renewed interest in Africa coincided with an upsurge of western interest in promoting liberal democracy and human rights,"⁵⁴ a measure perceived as neo-imperialism by developing countries, especially authoritarian regimes. China took advantage of this context and re-assured many of its African trade partners that its sole interest is in business transactions. Beijing has also avoided framing its approach from a human rights standpoint and preferred emphasizing "economic rights" and "rights of subsistence" of developing countries.⁵⁵ Consequently, many African powers view China's presence as a chance to disengage from the West and its constant political demands, leaving China to balance its need for resources with "diplomacy to court African leaders."⁵⁶

The advantage of not being associated with colonialism and imperialism could have been a double-edged sword and disadvantaged China because it does not possess the historical linkages with strategic oil-exporting countries like European powers. However, China made the best of it by approaching its African partners as an independent business relationship. In the same vein, China has had access to countries where American and European companies are absent due to political instability and human rights violations. Some North African countries like Libya and Sudan have been isolated by American foreign policy; yet, as

with the Iranian case, China has tremendously benefited from this vacuum to seize important deals and gain assets⁵⁷. Unlike the Middle East, oil upstream markets are wide open for foreign investments in North Africa. As exploration is more risky, China has seized opportunities to invest in upstream markets, often becoming the most important investor⁵⁸. Indeed, North Africa is particularly in need of investment. Unlike its Middle Eastern counterpart where the oil sector is saturated, Africa has mostly been enthusiastic, and welcomed Chinese foreign direct investment to invigorate its neglected sectors, especially oil.

Given the uniqueness of the Middle East in relation to oil sustainability, geographical proximity, and strategic location, it is difficult for China to move away from the Middle East. The Beijing Consensus is especially appealing to developing states because it does not involve immediate political change. Unlike the Cold War era, current Chinese foreign policy is more concerned with economic development than ideology.⁵⁹ Both China and the Middle East have a clear preference for "a faster pace of economic reform compared to political change,"⁶⁰ which creates space for increasing cooperation.

In addition to oil, both economies complement each other because Persian Gulf states are huge markets with medium populations, striving for articles of production and daily use, which China produces cheaply and efficiently. The oil states are major consumers of Chinese

⁵³ Naidu and Davies, 'Who was the real winner in China?' China Monitor 13, Centre for Chinese Studies, University of Stellenbosch, 2006, pp. 70.

⁵⁴ Taylor (2006), pp. 939.

⁵⁵ Ibid, p. 939.

⁵⁶ Naidu and Davies, China fuels its future with African riches, South African Journal of International Affairs 13(2). 2006, Pp 80.

⁵⁷ Salman, M., Moritz, P., and Gustaaf Geeraerts. "Hedging in the Middle East and China-U.S. Competition." *Asian Politics & Policy* 7, 4: 575-596. (2015)

⁵⁸ Zhao (2007)

⁵⁹ Hontu (2010)

⁶⁰ Sager, Abdulaziz. 2010. 'GCC-China Relations: Looking beyond Oil-risks and Rewards', in Abdulaziz, Sager, Geoffrey, Kemp (eds), China's Growing Role in the Middle East. Washington, DC: Nixon Center, 2010, Pp.21.

light manufactured goods, machinery and equipment, vehicles, foodstuffs, and engineering labour services⁶¹. Furthermore, China has the capacity to export labour service to Arab countries because of the relative insufficiency of labour in these nations. Therefore, China's complementarity to Middle Eastern states has made it a major trade partner in the region.

From a Middle Eastern standpoint, China is a huge market for oil exports. With the decrease in oil demand after the global economic crisis and the growing desire of Western states to diversify their oil supplies, the GCC States have found a great trading partner in China: Saudi Arabia, Oman, United Arab Emirates and Kuwait alone have collectively constituted 43% of Chinese crude oil imports in 2013⁶². The GCC cluster owns some of the most oil wealth in the world in conjunction with relatively politically stable environments, an appealing combination for Chinese interests.

From a Chinese standpoint, diversifying China's oil sources is essential: Russia, Central Asia, Africa, and Latin America are all trading partners with China. China is practicing oil diplomacy, defined by Olimat as "the foreign activities with explicit involvement of the central government aiming to secure foreign oil and gas resources or promote interstate oil and gas business cooperation"⁶³ and has realized the importance of diversifying the source of its oil imports. Yet, despite trying to diversify its oil imports by trading with Eurasia, the Asia-Pacific region, and Africa, China is still very

reliant on the Middle East for crude oil. One thing for sure, both parties wish to move away from Western supremacy in the energy market. Asia-and China in particular-has become more reliant overall on Middle Eastern oil. Consequently, this shift in oil demand from West to East has created tensions between the United States and China. In fact, the Asian continent is expected to account for much of the growing demand in the next decades, and already, two-thirds of Saudi Arabia's oil exports go to Asia. As the United States and other Western countries search for new alternatives to oil consumption, Middle Eastern oil-rich countries are looking for steady, long-term demand. Asia and the Middle East have consequently found a ground for cooperation: while Asia wants to secure energy supplies, Middle Eastern oil-exporting states are eager to build a long-term relationship, ensuring regular and constant oil supply. Consequently, by expanding ties with China, Saudi Arabia, and Iran and Sudan to a lesser extent, diversified their international exports and reduced their dependence on Western powers, especially the United States⁶⁴.

V. SINO-SAUDI OIL POLICY

Although Chinese firms are participating actively in oil projects in other countries such as Kuwait, Oman, Qatar, Syria, the UAE, Yemen, and Iraq, their focus is mainly on two major oil producing countries: Saudi Arabia and Iran⁶⁵. China is well positioned to build an energy partnership with Saudi Arabia because unlike other oil-producing states in the Middle East, Saudi Arabia is well-established and well-resourced in oil industry. Saudi Arabia needs steady consumers and China provides a great

⁶¹ Alterman & Garver, *The Vital Triangle, China, The United States and the Middle East*, CSIS, Centre for Strategic and International Studies, Washington DC. 2008, Pg 66

⁶² EIA (2014)

⁶³ Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, NewYork, Routledge, 2015. Pp. 37.

⁶⁴ Sager, Abdulaziz. 2010. 'GCC-China Relations: Looking beyond Oil-risks and Rewards', in Abdulaziz, Sager, Geoffrey, Kemp (eds), *China's Growing Role in the Middle East*. Washington, DC: Nixon Center, 2010, Pp. 20.

⁶⁵ Hongtu (2010)

alternative to the “seemingly capricious”⁶⁶ consuming markets of the United States. Saudi Arabia exports more than half of its crude oil to Asia and less than fifth to the Americas. Yet, in 2012, Saudi Arabia was the second-largest petroleum exporter annually to the United States after Canada. Although the United States remains an important partner, Saudi Arabia has an even more important market in Asia.

Historically, relations between China and Saudi Arabia started with the ascendance to power of Deng Xiaoping in 1978. Xiaoping was determined to accelerate economic reforms, growth, productivity, and efficiency in order to rebuild China and Saudi Arabia became part of the solution.⁶⁷ Later on, several political exchanges and diplomatic visits between China and the Kingdom took place. In 1999, Chinese President Jiang Zemin visited Saudi Arabia and signed the Strategic Oil Cooperation Agreement. In 2006, Chinese President Jintao Hu visited the Kingdom as well, and Chinese Middle East envoy stated that the visit “laid a solid foundation for the growth of bilateral ties in the years ahead.”⁶⁸ President Jintao made another visit in 2009, and another agreement was signed, including a partnership in oil, gas, and mining. In 2012, Chinese Prime Minister Wen Jiabao went to Saudi Arabia; at the same time Saudi Arabia’s state-run oil company Aramco signed an agreement with China’s Sinopec to build an oil refinery in Yabu, Saudi Arabia. That agreement became the first major Chinese investment in Saudi oil industry. Saudi Arabia also found a great trading partner in China regarding its heavy crude oil. Saudi’s

heavy crude oil consists of a “distressed medium-grade crude oil,”⁶⁹ consuming a viscous, acidic, and often sulphurous product that Saudi Arabia has in abundance but that has few buyers internationally. In fact, although it sells 15% to 25% cheaper than premium grade of oil, heavy crude oil is hard to refine and only a few refineries have the capacity to transform it into usable products such as heating oil or gasoline. The United States has refused to buy heavy crude oil as processing it into usable oil has great environmental concerns, while China saw a great opportunity to obtain oil at a cheaper price. Consequently, Saudi Arabia has been trying to develop new partnerships with China by investing in specific refineries in Chinese territory, allowing China to purchase inexpensive oil and Saudi Arabia to ensure a steady demand.

The Enduring Rivalry between Saudi Arabia and Iran

Despite a long history of supplying oil to Western powers, one of Saudi Arabia’s policies is to isolate Iran. Through “petro-political partnerships,”⁷⁰ Saudi Arabia has been trying to contain Iran’s political and economic influence. Saudi Arabia is ready to do whatever it takes to dismiss Iran and strengthen its own ties with China. For example, Saudi Arabia’s ability to increase its oil production is certainly a card that Saudi Arabia could use to marginalize Iran, but also to calm world markets and boost economic growth during crises⁷¹.

As per China, when Saudi Arabia finally opened up its upstream sector, Chinese investments

⁶⁶ Alterman & Garver, *The Vital Triangle, China, The United States and the Middle East*, CSIS, Centre for Strategic and International Studies, Washington DC. 2008, Pg 57-58.

⁶⁷ Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 43

⁶⁸ Al-Tamimi (2012), pp. 5.

⁶⁹ Alterman & Garver, *The Vital Triangle, China, The United States and the Middle East*, CSIS, Centre for Strategic and International Studies, Washington DC. 2008, Pg 58.

⁷⁰ Al-Tamimi (2012), pp. 10.

⁷¹ Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 62

poured in while Saudi Arabia invested in China's downstream refining business. In fact, Saudi Arabia planned to develop supply contracts through mutually beneficial joint-venture investments in exploration, refining, petrochemicals, and infrastructure projects⁷². As energy sits at the core of Saudi-Chinese cooperation, it covers a wide umbrella of oil processes, whether oil imports, upstream, downstream, oil reserve tank building, and refining petrochemical industries. In sum, Saudi Arabia provides oil while China offers consumer goods, services, markets, and oil imports. While China is increasing its oil imports from Saudi Arabia, the latter is "more than delighted" to increase its oil exports and production capacity as it announced its "willingness, ability, and desire to increase production capacity to meet any demand caused by the decline in Iranian oil export."⁷³

The New Rivalry between China and the United States

The U.S. and Saudi Arabia have long had a privileged relationship mainly based on trade partnership, and especially oil. However, the 9/11 attacks and the proven involvement of Saudi citizens in international terrorism caused tension in the Saudi-U.S. relationship. At the same time, Sino-Saudi relations intensified and Saudi leaders began to view China as a convenient alternative, especially with regards to the Beijing Consensus and its policy of strict non-interference in Saudi Arabia's internal affairs, which contrasted with Washington's drive for constant political reform. Politically, both China and Saudi Arabia felt threatened by U.S. insistence on global political norms, as

both countries maintain state control over the media and civil society on grounds of political and social stability⁷⁴. However, Saudi Arabia still maintains a special relationship with the United States and both governments continue to cooperate on several security issues. Nonetheless, the economic reality is that United States' demand for oil is constant and the Washington Consensus constantly raises tensions. These factors increasingly push Saudi Arabia to rely more on China.

VI. SINO-IRANIAN OIL POLICY

Due to decade-long economic sanctions under United States' watch, Sino-Iranian relations have received particular attention. As one of four countries that imported Iranian oil in 2014, China has been receiving the largest share of the pie. On Iran's side, the collapse of the Soviet Union combined with international sanctions, slow economic growth, and under-developed oil and gas industries, have all encouraged Iran to look east for new partners⁷⁵.

China's oil imports from Iran started in the 1960's. After the Iranian revolution, China assisted Iran in rehabilitating its oil and gas fields especially by importing some of its oil technology. China helped Iran maintaining and upgrading three of its oil refineries in 2000, tapping into oil reserves in the Caspian Sea Basin and the gas fields of the Persian Gulf⁷⁶. Since then, China has been following two major projects in Iran: the North Pars gas field and the Yadavaran oil field. In 1997, China entered the Iranian energy sector by bidding

⁷² Sager, Abdulaziz. 2010. 'GCC-China Relations: Looking beyond Oil-risks and Rewards', in Abdulaziz, Sager, Geoffrey, Kemp (eds), *China's Growing Role in the Middle East*. Washington, DC: Nixon Center, 2010, Pp. 18.

⁷³ Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, NewYork, Routledge, 2015. Pp.159.

⁷⁴ Alterman & Garver, *The Vital Triangle, China, The United States and the Middle East*, CSIS, Centre for Strategic and International Studies, Washington DC. 2008, Pg 64

⁷⁵ Chubin . 2010. Pp 24

⁷⁶ Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, NewYork, Routledge, 2015. Pp. 42

on 43 projects worth \$8 billion⁷⁷. In January 2001, Sinopec and the National Iranian Oil Company (NIOC) signed an agreement to exploit Zavareh-Kashan oil field, and Sinopec took charge of the operation. Simultaneously, the two companies also signed an agreement worth \$150 million to upgrade two NIOC refineries⁷⁸. On December 9, 2007, Sinopec signed an agreement with the Iranian Ministry of Oil to develop the Yadavaran oil field in southwestern Iran, which turned out to be one of the most significant deals that China signed with Iran so far.

China also applied its equity ownership strategy in Iran through Sinopec who holds a 51% equity share of the Yadavaran field. As a side note, the field is supposedly the largest untapped oil field in the world, with an estimated oil reserve of over 300,000 million barrel of crude oil. By 2009, Iran provided 11% of China's oil import, ranking third after Saudi Arabia and Angola. According to Chubin⁷⁹, Chinese oil companies have signed long-term contracts with Iran worth \$200 billion. More than a hundred Chinese companies are currently operating in Iran's oil and gas facilities. The essence of Sino-Iranian relations comes from the abundance of Iranian oil and gas reserves, associated with Western withdrawal from Iranian markets and economic sanctions. China simply moved into the economic vacuum created by U.S. policy,⁸⁰ which helped Iran obtain a reputation of "reliable supplier,"⁸¹ weakening the impacts of sanctions, and allowing Iran to create new bonds with China.

Iran's Nuclear Program and International Sanctions

The Sino-Iranian relationship has worried many actors in the region. Giving the lack of trust between the Kingdom and Iran, Saudi Arabia is concerned about the current state of affairs between China and Iran. Thanks to China's growing investment in hydrocarbons, it is evident that Chinese companies have successfully obtained several oil contracts in Iran, strengthening the ties between two countries. However, Beijing has been cautious in its approach towards Tehran: China's foreign policy is driven by commerce and China has carefully separated its oil interests from rising nuclear concerns in Iran⁸². As suspicions rose regarding Iran's potential nuclear programs, China's support for Iran became a significant source of conflict in U.S.-Sino relations in the 1990s. Later on, as confrontation with Iran intensified in 2004, Washington pressured Beijing to cease its cooperation with Iran on the Yadavaran oil field. In 2005, when the International Atomic Energy Agency (IAEA) determined that over a period of eighteen years, Iran had conducted nuclear activities without reporting them, China attempted to delay and soften U.S. measures against Iran. In particular, China opposed U.S. efforts to send the matter to the United Nations Security Council and insisted that the IAEA was the adequate venue for dealing with the issue. In 2006, China repeatedly urged Iran to respond "positively" and "flexibly"⁸³ to the proposals made by the European Union or Russia.

However, when Iran declared that it would continue uranium enrichment and ignored the deadline specified in Resolution 1696, China finally agreed to join the other permanent

77 (Hongtu, 2010. Pp 21

78 Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 56

79 Chubin .2010 pp. 31

80 Alterman.2008. Pp. 21

81 Chubbin (2010), pp. 65-66.

82 Feng .2010.Pp 23

83 Alterman & Garver, *The Vital Triangle, China, The United States and the Middle East*, CSIS, Centre for Strategic and International Studies, Washington DC. 2008, Pp 43.

members of the United Nations Security Council and Germany (P5+1) in implementing gradual sanctions against Iran. Thus, while China delayed the imposition of sanctions, it was also fundamentally opposed to Tehran's acquisition of nuclear weapons due to its potential negative impacts for China's economic well-being. In fact, some Chinese analysts argue that allowing Iran to obtain nuclear weapons would make several other states of the Middle East more likely to obtain their own arsenals. This would then weaken China's status as a major nuclear power. Proliferation of nuclear weapons could also lead to political instability in the region, which would be disruptive for Chinese business⁸⁴. Consequently, the Iranian nuclear issue provides a good example of Beijing's attempts to balance its policy of cooperation with the U.S. and with the Middle East, especially with oil-rich states such as Iran.

For a long time, China had been concerned about the tension between Iran and the West and had opposed a military strike against Iran⁸⁵. These fears were mollified in 2015 when Iran and the P5+1 reached a landmark deal over the nuclear program of Iran. Accordingly, Iran agreed to reduce its nuclear capabilities and provide greater access to the International Atomic Energy Agency in exchange for the removal of the sanctions⁸⁶. This agreement is likely to have substantial implications for the relations between China and Iran.

From the Iranian perspective, it is obvious that during the long period of sanctions, China replaced the West as a source of investment and support. In fact Sino-Iranian relations

had worried the United States as it made total isolation of Iran unattainable. These relations allowed Iran to survive from the economic sanctions imposed on its nuclear program and kept Iran "independent."⁸⁷ Furthermore, Iran certainly had political goals in maintaining strong ties with China. According to Chubin, Iran wished "to use China as a balancer against the U.S., to use it as a source of technology in defence and energy fields, and to create a deep and reliable commercial relationship which can translate into a more substantial strategic relationship."⁸⁸ Thus, Iran's focus had been on short-term relations while China focused on long-term. Whereas Iran may wish to use its natural resources as a political instrument, China's foreign policy is primarily focused on economic relations.

Overall, the end of the sanctions creates several opportunities and challenges for Chinese influence in Iran. Firstly, it is clear that Iran would start enjoying the sudden increase in investments and commerce with the United States and the EU. However, with Donald Trump as president of the United States in office, circumstances may be different as he pursues his presidential promise to put "America First" policies that are critical of world liberal order. Donald Trump's conservative nationalist approach to foreign policy, no matter how skillfully presented, has been noted to be flawed. The U.S. cannot be strengthened through a process of even partial withdrawal from the vicissitudes of international politics and trade⁸⁹. Meanwhile China would benefit from the increase in the production of oil and gas in Iran. On the other hand, Chinese companies would now have to compete with their Western counterparts. Particularly, various Eastern

⁸⁴ Ibid.

⁸⁵ Feng 2010..Pp 47

⁸⁶ BBC News. "Iran's Nuclear Deal: Key Details." January 16, 2016. URL: <http://www.bbc.com/news/world-middle-east-33521655>

⁸⁷ Chubin .2010. pp. 64-65.

⁸⁸ Ibid, pp. 67.

⁸⁹ Thompson Jack. American Affairs and U.S. Foreign Policy, *Policy Perspectives*, Vol. 5/3, June, 2017. Pp 2

European countries would be highly interested in the natural gas reserves of Iran as a means to address their energy dependence to Russia. Overall, China now has to take into account a complex geopolitical chessboard when playing in the Middle East energy arena.

VII. THE CHINESE CHALLENGES OF SECURING STABLE OIL SUPPLIES

Energy security is critical for economic security and can influence the sustainable development path, peace, and stability of a country. One of the crucial points of energy security is securing a stable oil supply. China, like many other Asian countries, has felt the impact of civil unrest and conflicts in MENA because political instability threatens to disrupt energy supply channels. As a large importer and consumer, China is very sensitive to the volatility of oil price and supply. Olimat recommends that China avoid a nationalist approach towards energy security and/or establishing military bases in the region⁹⁰ while Sager argues that because China's policy is to protect energy routes, it will increasingly engage in the security debates, seeking to have a say regarding issues over oil transportation (maritime security) and supply security⁹¹.

Energy security is not as simple it may sound. Olimat discusses three main impediments to energy security of China: (1) insufficient domestic oil production; (2) China's lack of control over oil transport routes (sea and land); (3) price fluctuation⁹². China's lack of

⁹⁰ Schenker, D. "China-Middle East Relations: A Change in Policy?" Washington DC: Carnegie Endowment for International Peace. 2013. Pp 68.

⁹¹ Sager, Abdulaziz. 2010. 'GCC-China Relations: Looking beyond Oil-risks and Rewards', in Abdulaziz, Sager, Geoffrey, Kemp (eds), *China's Growing Role in the Middle East*. Washington, DC: Nixon Center, 2010, Pp. 11.

⁹² Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 82.

self-sufficiency has been discussed earlier; however, we could add that Chinese presence in MENA's oil market creates a balance against the United States' omnipresence. Regarding China's lack of control over transportation, China has attempted to move forward with the creation of new pipelines, which would ensure a relatively safe transport of oil. China is moving away from maritime transportation, as the Malacca Straits have limited waterways and cannot meet the demand of oil tankers.

Pipelines are faster and provide a sustained volume of transiting oil; they are also more reliable and economically more efficient. China is directing three pipelines in particular: the Sino-Burmese oil and gas pipeline from China to the Middle East; the Sino-Kazakh pipeline from China to the Caspian Sea; and the Sino-Russian pipeline from China to Russia. China is hoping that through pipelines and its multiply-routes strategy, it will increase the security and reliability of its oil supply.

Finally, a fluctuation in oil prices could be disastrous for China—and it has been. In 2008, when prices of oil spiked at \$147.50 per barrel, China struggled to meet its growing need for energy. Yet, the 52% fall of oil prices later⁹³ has played in China's advantage. To balance unstable oil prices, China adopted a strategy of equity ownership in order to have more control over the management of oil resources and used it as a shield against price fluctuations. However, this strategy created tensions with Western states engaged in oil partnership in MENA as they saw it as "a deceptive practice seeking to place Western consumers in a less

⁹³ Friedman, N. and Kantchev, G. (2015). "Oil Prices Post Biggest One-Week Gain since 2011." *The Wall Street Journal*, February 6, 2015. Pp 52

Available from <http://www.wsj.com/articles/oil-prices-rise-again-in-volatile-week-1423218645> [Accessed 21 November 2015].

favourable position.”⁹⁴ China's other move has been to diversify its supply sources by entrusting other oil-rich regions of the world such as Sub-Saharan Africa and South America. Although more costly, it could provide an interesting alternative to unstable oil markets and allow China for more control over its energy investments.

VIII. CONCLUSION

China's energy policy in the MENA follows the agenda of the Beijing Consensus and has mostly been prudent, yet far-reaching. As a major growing economy, China needs concrete energy strategy to fuel its continuous growth. To ensure stable and steady oil supply, China did not hesitate to diversify its sources in MENA, sometimes even challenging economic sanctions in the case of Sudan and Iran. But China has also been a loyal partner to Saudi Arabia and both states have found common interests, strengthening their relationship overtime. China promised to be a secure oil importer and Saudi Arabia proved eager to become a regular oil-exporter. The Beijing Consensus has been especially appealing to Saudi Arabia and Iran because both states are increasingly displeased by the American approach, which is often seen as too intrusive. However, Sino-Saudi Arabia and Sino-Iranian relations are not all that simple. Although Saudi Arabia and Iran have proven to be perennial rivals, their expectation regarding their relationship with China is quite similar: they both wish to escape from, or at least balance, Western influence. Saudi Arabia has felt the growing tensions with the United States on the issue of global terror while Iran had been under international sanctions until last year. Similarly, Sudan was completely isolated after

the American government forbade American companies to invest in the area. In all cases, China has been a convenient alternative: Sudan developed its oil industry and obtained arms from China, Saudi Arabia diversified its exports by bringing in a new dependent client, and Iran was able to export its oil during the sanctions. Consequently, there has been a gradual shift from the West and diversification has been the primary focus of both suppliers and demanders.

As a relatively 'new' player in the game, China has had the opportunity to develop a prudent strategy, which could succeed in ensuring the country with a steady flow of oil without destabilizing its relationship with other powers in the international arena. While the United States certainly disagrees with China's equity sharing policy, it is not yet fully convinced that China represents a threat to its national interests in the region⁹⁵. In fact, although Washington opted for alternate energy sources such as shale gas and renewable energy, the United States remains reliant on Middle Eastern oil supplies. Accordingly, the United States still prioritizes political stability in the Middle East for the sake of its own national security. The United States has historically been vigorously active in protecting its energy security in the region, resulting in plenty of military interventions in the past. China has opted to maintain its non-interference foreign policy strategy to date, aware that the United States is as involved, but the feasibility of maintaining this approach into the future is questionable.

Furthermore, findings reveal that while the United States is a significant player in the oil arena, China's rise could slowly narrow the sphere of American influence in favour of multilateral relationships between developing states. However, China does not

⁹⁴ Olimat Muhammad S., *China and the Middle East: From Silk Road to Arab Spring*, Reprint Edition, New York, Routledge, 2015. Pp. 46.

⁹⁵ *Ibid.* Pp. 62

wish to increase tensions at the international level and has been trying to follow its own agenda and chose a detached and unimposing take on foreign policy. Its conventional approach as a growing superpower has been unobtrusive, opting to avoid involvement in any nation's political affairs but its own, and mostly concentrating on trade relations and investment agreements. This is in stark contrast to the historically more forceful nature of Western economies' involvement globally. After colonialism was over, the West took to democracy and capitalism as its respective political and economic models. Their implementation became perceived as recurring items on the agenda when a Western nation was involved with a MENA nation. While trying to gain, regain, or maintain security of its own economic interests and political influence

abroad, military intervention was increasingly used by the United States, particularly in the Middle East. In effect, the West demanded that certain political and economic conditions be met with regards to the rule of law and good governance in exchange for formal relations, whereas China's approach has been virtually unrestricted with regard to a regime's own affairs, and has been, for the most part, strictly about business. The relevance of China's presence in the MENA is crucial at such a rapidly changing and interconnected world, and the nature of its foreign policy will have to evolve with it. For now, China's energy security policy—although aggressive—has been successful; time will tell whether China will be subtle enough to avoid conflict in the MENA region.

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THE RELATIONSHIP BETWEEN INTERNAL AUDITING AND EXTERNAL AUDIT FEES: EVIDENCE FROM KUWAIT

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Abstract: Although audit pricing has been one of the most studied topics in the audit literature for more than three decades now, to date, very little research has been conducted on this important issue in the Middle East Region. One important question in this line of audit research has been related to whether audit fees are influenced by the contribution of client's internal auditing (IA) to the external audit work. Much of existing research investigating this issue has been conducted in well-developed English-speaking countries, with almost no empirical evidence provided about this issue within the context of other parts of the world. The purpose of the current study is to examine this issue using data from the Kuwaiti audit market. In particular, the current study uses a sample of audit engagements performed in the Kuwaiti market, to examine whether external audit fees are influenced by the contribution of the client's internal audit function. The results show that IA contribution in the external audit work is negatively related to the amount of external audit fees.

Keywords: audit fees, internal auditing, audit markets, Kuwait.

I. INTRODUCTION

Due to the growing competition in audit markets, and the increasing complexity in the required audit procedures, one of the major challenges external audit firms have been facing in recent years is the need to be cost-efficient and at the same time preserve adequate audit quality. One way for audit firms to achieve that has been through the utilization of audit client's internal audit (IA) in the performance of the external audit work. The contribution of the client's IA department to external audit work can be beneficial not only for audit firms but also for audit clients as well. That is true since this kind of cooperation is expected to result in some synergic outcomes including high audit

quality and cost efficiency (Gramling *et al.*, 2004; Sarens, 2009). Audit clients are expected to cherish such cooperation since it can lead to reducing the cost of their external audit (Zain *et al.*, 2015). In addition, and especially in light of the recent emphasis on the promotion of effective and strong corporate governance and control, having a better understanding of how internal and external audit interact is very useful for the enhancement of integrity and reliability of corporate financial reporting (Spira and Page, 2003; Goodwin-Stewart and Kent, 2006).

The impact of IA contribution to external audit work on audit fees has been an interesting research issue for several audit researchers.

Studies in this line of audit research have typically been interested in examining whether external audit fees are influenced by the contribution of IA to the external audit work. Empirical results offered by these studies are mixed. In particular, prior research examining the IA-fees relationship has reported a negative relationship, a positive relationship, and no significant relationship between external audit fees and IA. For example, Felix *et al.* (2001) provide evidence suggesting that audit fees are reduced as a result of IA involvement in external audit. Goodwin-Stewart and Kent (2006), on the other hand, report evidence of a positive relation between external audit fees and internal audit contribution. On the other hand, both Stein *et al.* (1994) and Carey *et al.* (2000) could not find a significant relationship between audit fees and IA.

The current study aims at extending this line of audit research by examining this important yet rarely examined research issue in the context of the Kuwait audit market. Much of the existing empirical evidence about this relationship stem from developed countries' markets, with very limited research examining this issue in the context of less developed countries. Research based on data from these markets may not be applicable to other parts of the world where the market structure, firms' ownership, and the regulatory environment are quite different. The current study aims at filling this gap in the international audit literature by examining the relationship between external audit fees and IA contribution using data from the Kuwaiti audit market. Such examination seems to be warranted as it could help knowing whether empirical findings documented and conclusions drawn from prior developed markets-based studies about the IA-fees relationship prove to be relevant to a developing country's market, like the Kuwaiti market.

While similar in some aspects, the audit market in Kuwait is distinct from audit markets of developed markets in a number of different ways. First, unlike in most developed countries where the degree of regulation and official audit guidance is thorough and well-structured, rules and regulations governing the audit profession in Kuwait are still immature and underprovided. Audit pricing in Kuwait, therefore, is expected to be different from that in other markets as audit fees are expected to be influenced by the market's regulatory settings (Kim *et al.* 2012). Second, unlike in developed countries where prior related studies were conducted, there are no regulations requiring firms to disclose audit fees paid to their external audit firms. This makes the pricing of audit services in the Kuwaiti market less transparent than audit pricing in these markets where audit fees are publically known. Third, unlike in Western and well-developed audit markets, where the business environment is highly litigious, the potential for economic or reputational losses audit firms may incur as a result of audit failures is quite remote in a developing market, like the Kuwaiti market (Habib and Islam, 2007). Finally, unlike in developed markets where audit firms operate in a highly competitive environment, competition is quite insignificant in the Kuwaiti audit market. Prior research (e.g. Boone *et al.* 2012; Francis *et al.* 2013) suggests that external auditors' behavior is influenced by the level of competition in the marketplace. Hence, the reduced level of competition audit firms face in developing markets compared to that in developed markets may result in fewer incentives for audit firms to reduce their audit costs via seeking IA contribution in their external audit work. These differences between the Kuwaiti audit market and other markets where prior related studies were carried out raise the need for further

examining the relationship between audit fees and IA contribution in a setting that has not been explored before.

After controlling for some key factors related to external audit fees, the results show a negative relationship between external audit fees and IA contribution in the external audit work. The empirical evidence provided in the current study is supportive of IA as a substitute of substantive audit procedures performed to carry out the external audit work. The results provided by the current study should be of value to audit firms interested in comparing the level of their coordination with their clients' IA to that in the market. The current study's findings may also be informative to firms' audit committees when supervising the coordination between the external audit team and the firm's IA department. Empirical findings offered in the current study should also be of use to audit regulators, especially in the Kuwaiti market, for better understanding and supervision of the relationship between external auditors and their clients' IA functions.

The major contribution of this study is that it complements prior related research by carrying out an investigation of the relationship between audit fees and IA in a developing market's settings. This research endeavor, therefore, is valuable as it is, to the author's knowledge, the first to provide empirical evidence about this important research issue from the Middle Eastern region.

II. LITERATURE REVIEW

The relationship between audit fees and IA contribution has been an issue of interest for several audit researchers for the last thirty years. Understanding the interaction between internal and external auditing is important as both functions serve as monitoring mechanisms

for corporations (Stein *et al.*, 1994; Felix *et al.*, 2001; Goodwin-Stewart and Kent, 2006; Singh *et al.* 2013). In addition, investigating the relationship between internal and external audit functions is of value as it has some economic implications for companies and external audit firms (Singh *et al.*, 2013). Empirical findings obtained about this relationship have been mixed and inconclusive, though. While results obtained by some prior studies suggest a negative relationship between audit fees and IA contribution (e.g., Felix *et al.*; 2001), evidence reported in other studies show a positive relationship (e.g., Goodwin-Stewart and Kent, 2006; Hay *et al.*, 2008).

The professional audit guidance encourages external auditors to rely on work performed by the audit client's IA function when it when it is of adequate quality. In particular, International Standard on Auditing 610, *Using the Work of Internal Auditors*, maintains that "the external auditor shall consider the nature and scope of the work that has been performed, or is planned to be performed, by the internal audit function and its relevance to the external auditor's overall audit strategy and audit plan" (IFAC, p. 7). Using the work of internal auditors can be useful in conducting more efficient and effective external audit. That is true since using such a work would help lowering the cost of performing the external audit work, and enables the external audit team to make use of internal auditors' familiarity and understanding with the client's activities and operations.

The impact of external auditors' use of IA work and external audit fees has been a subject of investigation by several researchers. Existing related research reports findings revealing a positive, negative, and no relationship between using IA work and audit fees. Researchers suggesting a significant positive association between IA contribution and audit fees interpret

such a positive relationship as a demonstration of the conception that the IA function is a complementary tool that enhances the overall corporate monitoring and control (Singh *et al.*, 2013). Research suggesting a negative relationship between IA contribution and audit fees maintains that the IA function can be viewed as a substitute, at least partially, for the external audit work. This would happen as a result of (i) the reduced external audit hours resulting from internal auditors' participation in the actual conduct of the external audit work, or (ii) the reduced audit risk assessment resulting from internal auditors' knowledge and involvement in internal controls (Singh *et al.*, 2013). Research failing to report a significant relationship between IA contribution and external audit fees suggests a number of possible reasons for that¹. Firstly, there could be no causal relationship between IA and audit fees in reality. Secondly, there could be a positive relationship that is not observable as the audit firm may decide to absorb the increased audit costs for client retention reasons. Thirdly, there could be a negative relationship between IA contribution and audit fees that is not evident as the audit firm may decide not to pass the cost 'savings' on to the audit client.

Empirical auditing research has long discussed the determinants of external audit fees. Although this research has examined various factors and their potential influence on audit fees, auditee's size, complexity, and risk were conventionally thought of as the primary determinants of audit fees. The contribution of audit clients' internal auditors to external auditors' work was long believed to have the potential to reduce the costs of performing the external audit work (and consequently audit fees). Yet, only few studies have directly investigated the contribution of IA functions

as a determinant of external audit fees. Elliott and Korpi (1978) paper was among the early studies that directly investigated the clients' internal auditors' participation in the external auditor work as a determinant of audit fees. They found that the percentage reduction of the external audit work due to the participation of internal audit was significant in predicting external audit fees. Stein *et al.* (1994) is another study that explicitly examined the IA contribution as a determinant of audit fees. A dichotomous variable, with the level of IA participation represented as either "extensive" or "limited", was used to test the significance of the contribution variable in the audit fees model. The results failed to find such variable significant, probably due to the use of a dichotomous variable to capture the contribution of IA. Felix *et al.* (2001) further examined this issue using a continuous variable to measure the IA participation in the external audit work, and found this variable to be a significant determinant of external audit fees. As Felix *et al.* (1998) indicated, the main reason external auditors rely on clients' IA work when performing financial statement audits is to lower external audit costs. This suggests the presence of an inverse relationship between IA contribution and the costs of performing financial statement audits due to the cost savings external auditors retain when relying on such IA work.

Goodwin-Stewart and Kent (2006) examined the relationship between audit fees and IA using data related to Australian listed firms. In particular, using data related to a sample of 401 financial statement audits, they predicted and found evidence of significantly positive association between external audit fees and the use of client's IA. They interpreted their result as an evidence of the complementary nature of the relationship between internal and external audit as corporate monitoring mechanisms.

¹ See Singh *et al.* (2013) for further discussion.

Hay *et al.* (2008) used data related to a sample of 130 companies listed on the New Zealand Stock Exchange, and studied among other things, the relationship between audit fees and IA. Their results revealed a positive relationship between audit fees and IA. Singh *et al.* (2013) performed a further examination of the fees-IA relationship in the Australian market using data related to a sample of 272 publicly listed firms. Their results revealed a positive association between audit fees and the existence of IA function as a proxy for IA usage. Using data related to a sample of 53 audits from the Hong Kong market, Ho and Hutchinson (2010) carried out a similar investigation. Their results showed a negative relationship between audit fees and IA. More recently, Zain *et al.* (2015) recently performed similar examination in the Malaysian market, using data related to 74 listed firms. They found evidence of a significantly negative relationship between audit fees and IA contribution in external audit.

In sum, empirical findings about the relationship between audit fees and IA contribution are mixed and are still inconclusive. Moreover, it appears that much of prior related research examining this issue stem from well developed countries with only little research conducted in other parts of the world. Besides, to the author's knowledge, empirical research about this relationship is virtually nonexistent in the context of the Middle East region. Given the mixed and inconclusive empirical findings reported about the relationship between audit fees and IA contribution, this relationship remains 'anomalous' (Hay *et al.*, 2006), and, hence, further examination of this relationship seems warranted. Therefore, and as indicated earlier, the current study aims at empirically examining the relationship between audit fees and IA contribution using data from the Kuwaiti market. Such research endeavor aims at filling the shortage of empirical research on

the IA-audit fee relationship in the context of developing countries' markets.

III. RESEARCH METHODOLOGY

Sample:

To obtain data needed to test the research questions of interest, a data-gathering instrument was designed for the purpose of gathering the needed information. Audit partners/managers in six audit firms operating in the Kuwaiti market were contacted and were requested to provide some information about a random sample of 15 financial statement audits for which they have had a supervisory role. The study's initial sample consisted of observations related to 57 audit engagements (63 percent). Due to missing data, nonetheless, 22 were discarded from the analysis of the current study. Hence, the study's final sample consists of 35 audit engagements.

Model:

As indicted earlier, the main objective of the current study is to examine the impact of IA contribution on external audit fees in the Kuwaiti audit market. The following OLS regression model is used to examine the research questions of interest:

$$\text{FEE} = b_0 + b_1 \text{IA} + b_2 \text{SIZE} + b_3 \text{LOCAT} + b_4 \text{QUICK} + b_5 \text{LEVER} + b_6 \text{ROA} + b_7 \text{NAS} + b_8 \text{BIG4} + b_9 \text{TENURE}$$

Where:

FEE : the natural log of total audit fees;

IA : External auditor's assessment of the percentage of external audit work performed by the audit client's internal audit staff.

SIZE : the natural log of the audit client's total assets;

LOCAT : the natural log of the number of audit locations visited by the audit team;

QUICK : the audit client's current assets

minus inventories to current liabilities;

LEVER : ratio of client's total long-term debt to the total Assets.

ROA : ratio of the audit client's net income to total assets.

NAS : a dummy variable, taking the value of one if the audit firm provides non-audit services to the audit client, and zero otherwise.

BIG4 : a dummy variable taking the value of one if the audit firm is EY, PWC, KPMG, or Deloitte.

TENURE: the number of years the audit client is continuously auditing the audit client.

The dependent variable in the model is the external audit fees charged by the audit firm to perform the external audit and is measured in Kuwaiti Dinar². Consistent with previous related research (e.g., Simunic, 1980; Gist, 1992; Craswell and Francis, 1999; Felix *et al.*, 2001; Whisenant *et al.*, 2003; McMeeking *et al.*, 2007; Zain *et al.*, 2015) the natural log of external audit fees is used as a measure of the dependent variable.

Control variables:

Research examining the external audit fees has typically included a set of control variables representing factors believed to have an impact on the amount of external audit fees. In general, these variables include the size of the audit client, the complexity of the audit client's activities and operations, and the amount of risk associated with the audit client. Audit client size is typically measured using the client's total assets. It is intuitive to expect that when the audit client is a large firm it would need more audit work to be performed and hence will be charged higher amounts of external fees. Such a positive relationship between audit fees and audit client size is documented in much of

the existing related empirical research (e.g., Simunic, 1980; Chan *et al.*, 1993; Craswell and Francis, 1999; DeFond *et al.*, 2000; Gonthier-Besacier and Schatt, 2007; Goodwin-Stewart and Kent, 2006; Hay *et al.*, 2008; Zain *et al.*, 2015). Due to the economies-of-scale effects, however, the relationship between audit fees and audit client size is expected to be non-linear (Gerrard *et al.*, 1994). Hence, the natural log of the audit client's total assets (SIZE) is used in the current study as a measure of audit client size.

As indicated, client complexity is also expected to be influential in determining the amount of external audit fees. That is true because more complex activities and operations would need more audit work to be performed, and consequently more fees to be charged. Much of prior audit fees research (e.g., Francis and Stokes, 1986; Che Ahmad and Houghton, 1996; Carcello *et al.*, 2002; Hay *et al.*, 2008; Zain *et al.*, 2015) report evidence of such a positive relationship between audit fees and audit client's complexity. Consistent with some prior related studies (e.g., Gist, 1992; Davis *et al.*, 1993; Chan *et al.*, 1993), the current study uses the natural log of the number of locations visited by the audit team (LOCAT) as a measure of the complexity of the audit client.

Prior audit fees research (Simunic, 1980; Chan *et al.*, 1993; Firth, 2002; Whisenant *et al.*, 2003) suggests that the amount of external audit fees is significantly influenced by the riskiness of the audited firm. Previous studies have used a number of measures of the riskiness of the audit client. Yet, audit client profitability, liquidity, and debt ratio have been among the most commonly used proxies of audit client risk. Accordingly, the current study uses three measures of audit client risk; the client's return on assets (ROA), client's quick ratio (QUICK), and client's financial leverage ratio (LEVER).

² At the time of the study, the exchange rate was: 1 Kuwaiti Dinar = 3.3 US Dollars.

While the relationship between audit fees and both client's profitability and liquidity is expected to be negative, it is expected to be positive with client's financial leverage³.

Test variable

As indicated, the current study is interesting mainly at examining whether IA contribution in the external audit work affects the amount of external audit fees. The IA variable is added to the research model to examine this research question. Similar to prior related research (Felix *et al.*, 2001), this variable is measured as external auditor's assessment of the percentage (from 0% to 100%) of external audit work performed by the client's internal audit staff. If IA contribution is positively (negatively) related to the amount of external audit fees, we would expect this variable's regression coefficient to show a positive (negative) sign.

IV. RESULTS AND ANALYSIS

Descriptive statistics:

Panel A of Table 1 demonstrates the descriptive statistics related to the study's variables. As shown, the mean total assets of the audited firms included in the sample is KD123,698,961, ranging from as low as KD301,441 to KD772,016,000. The mean of the external audit fees for the study's sample is about KD4,854. Table 1 also shows that audited firms included in the sample has a mean quick ratio of 2.48, a financial leverage of 0.25 and a mean ROA of -0.6. Panel A of Table 1 also shows that, on average, the audit firms of the sampled firms were tenured for about 2.4 years. This table also shows that, on average, internal auditors contributed in about 28 percent of the external audit work in the sample of audit engagements. Panel B of Table

1 shows some statistics about the categorical variables included in the research model. As shown from this section of Table 1, external audit firms concurrently provided non-audit services in only 11 percent of the sample of audit engagements, while providing only audit services in about 89 percent of the audit engagements. Panel B in Table 1 also shows that 40 percent of sample of audit engagements were performed by one of the Big4 audit firms, while the rest were performed by non-Big4 audit firms.

Table 2 shows the Pearson correlations among the study's independent variables. As shown in this table, the correlations among the study's independent variables are not substantially high, with the highest correlation coefficient value less than 0.60. However, and to check for any possibility of multicollinearity among the study's independent variables, the Variance Inflation Factors (VIF) were computed, and are shown in Table 3. As the results demonstrate, the highest VIF value reported equals 2.543, which is less than the critical value of 10 (Neter *et al.*, 1983). Hence, multicollinearity does not appear to be a problem in this case.

Empirical Results:

Table 3 shows the results of the audit fees regression model of the current study. As indicated, this regression model regresses the natural log of the total amount of external audit fees (FEE) on a measure of IA contribution in the external audit work (IA), in addition to proxies for client's size (SIZE), client's complexity (LOCATE), client liquidity (QUICK), client's financial leverage (LEVER), client's profitability (ROA), concurrent provision of non-audit services (NAS), external auditor's type (BIG4), and audit firm's tenure in years (TENURE). As Table 3 shows, the model is significant with F-statistic of 3.244 (p-value < .000), and R-square of about 0.54.

³ Some related studies, however, produced mixed results and conclusions about the relationship between audit fees and client's liquidity and profitability ratios.

Table 1. Descriptive statistics

A s

<i>Panel A. Continuous Variables:</i>	N	Minimum	Maximum	Mean	S. D.
Total Audit Fees (KD)	35	1,000	20,000.00	4,854.29	4,601.05
IA	35	0.00	100.00	28.14	33.74
Total assets (KD)	35	301,441	772,016,000	123,698,961	198,894,416
LOCAT	35	1.00	3.00	1.11	0.40
QUICK	35	0.19	11.42	2.48	2.26
LEVER	35	0.00	0.83	0.25	0.26
ROA	35	(26.41)	0.77	(0.60)	4.49
TENURE	35	1.00	3.00	2.40	0.85

<i>Panel B. Categorical Variables:</i>	Value	Frequency	%
NAS	0	31	88.6
	1	4	11.4
CPA	0	21	60
	1	14	40

Table 2: Pearson Correlations

	IA	SIZE	LOCAT	QUICK	LEVER	ROA	NAS	CPA	TENURE
IA	1	(0.06)	0.09	0.14	0.19	-0.117	0.02	-0.007	.351*
SIZE		1.00	0.25	(0.08)	0.06	.394*	0.259	.526**	.392*
LOCAT			1.00	(0.04)	(0.10)	0.051	0.154	0.195	0.214
QUICK				1.00	0.09	0.145	-0.055	-0.073	-0.168
LEVER					1.00	-0.217	0.053	.505**	.377*
ROA						1	0.063	0.135	0.075
NAS							1	0.073	0.043
CPA								1	.587**
TENURE									1

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

shown in Table 3, the regression coefficient of the IA variable is statistically significant (p -value $< .057$), and has the expected negative sign. This result provides support to the research hypothesis that IA contribution in the external audit work would be associated with a reduction in the amount of external audit fees.

As for the other independent variables, except for the SIZE variable, the coefficients of the control variables included in the research model are statistically insignificant. In particular, the regression results show that the coefficient of the SIZE variable is statistically significant (p -value $< .006$) and has the predicted positive

Table 3. Regression Results

$$\text{FEE} = b_0 + b_1 \text{IA} + b_2 \text{SIZE} + b_3 \text{LOCAT} + b_4 \text{QUICK} + b_5 \text{LEVER} + b_6 \text{ROA} + b_7 \text{NAS} + b_8 \text{BIG4} + b_9 \text{TENURE}$$

Variable	Predicted Sign	Estimated Coefficient	<i>t</i> -statistic	<i>p</i> -value	VIF
Intercept		4.001	3.252	0.003	
IA	-	-0.007	-1.997	0.057*	1.383
SIZE	+	0.22	2.985	0.006***	1.878
LOCAT	+	0.408	0.865	0.396	1.184
QUICK	-	0.037	0.728	0.473	1.188
LEVER	+	0.376	0.685	0.499	1.83
ROA	-	-0.028	-1.009	0.323	1.382
NAS	?	0.507	1.473	0.153	1.118
BIG4	+	-0.135	-0.402	0.691	2.543
TENURE	-	0.156	0.863	0.396	2.123

Regression summary statistics:

$n = 35$

R-square = .539

F-statistics = 3.244

***, **, * p -value of statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Note:

FEE : the natural log of total audit fees;

IA : External auditor's assessment of the percentage of external audit work performed by the audit client's internal audit staff.

SIZE : the natural log of the audit client's total assets;

LOCAT : the natural log of the number of audit locations visited by the audit team;

QUICK : the audit client's current assets minus inventories to current liabilities;

LEVER : ratio of client's total long-term debt to the total Assets.

ROA : ratio of the audit client's net income to total assets.

NAS : a dummy variable, taking the value of one if the audit firm provides non-audit services to the audit client, and zero otherwise.

BIG4 : a dummy variable taking the value of one if the audit firm is EY, PWC, KPMG, or Deloitte.

TENURE : the number of years the audit client is continuously auditing the audit client.

sign. Such a result is consistent with findings of prior related empirical studies (e.g., Simunic, 1980; Chan *et al.*, 1993) suggesting that external audit fees increase as the size of the audit client increases. Contrary to expectation, however, the regression results indicate that the regression coefficient of the other control variables are insignificant. The insignificant results related to these control variables is similar to results reported in prior related research. For example, the lack of significance related to the ROA and QUICK variables can be explained in light of the opposing arguments that corporate financial characteristics such as profitability and liquidity can be viewed both as proxies of firm's risk and firm's ability to pay higher amounts of audit fees at the same time. While the risk manifestation suggests a negative relation to external audit fees, the "deep pocket" representation suggests a positive relation to audit fees.

In sum, the results reported in the current study provide empirical evidence from the Kuwaiti audit market that IA involvement in the external audit fees is associated with a reduction in external audit fees. This result is similar to findings reported in several similar studies (e.g., Felix *et al.*, 2001; Ho and Hutchinson, 2010; Zain *et al.*, 2015) and is consistent with the idea of IA as a substitute for external audits.

IV. SUMMARY AND CONCLUSION

As indicated, the main objective of the current study is to examine whether IA contribution in the external audit work is significantly related to the amount of external audit fees. Competing arguments have been offered in the audit literature about the direction of such a relation. On the one side, some audit researchers argue that IA should be looked at as a complementary function that add to the overall corporate

monitoring and control activities, suggesting a direct relationship between IA contribution to the external audit work and the amount of external audit fees. On the other hand, other audit researcher view IA contribution as a substitute to the external audit function, and therefore, expect this type of engagement to be inversely related to the amount of external audit fees. Empirical research examining the relationship between IA contribution and audit fees has produced mixed results, leaving the door open for further examination about this issue. Moreover, much of the previous empirical research examining the IA-fee relationship stems from well developed countries, with very little research examining this issue in the context of a developing country.

Using data related to a number of audit engagements performed in the Kuwaiti market, the current study performs an examination of the relationship between IA contribution to the external audit work and the amount of audit fees. This research seems to be warranted especially in light of the obvious shortage of empirical research about this issue in the context of developing countries' markets. This study, therefore, fills the gap in the international audit literature by providing empirical evidence about the IA-fees relationship from the Middle East region, namely the Kuwaiti market. The results reported in the current study provide evidence of a significant and negative relationship between IA contribution in the external audit work and the amount of external audit fees.

The current study's empirical findings have some policy implications. For example, the empirical evidence that IA contribution does substitute for some substantial audit procedures may be insightful for audit profession regulators, especially in Kuwait when establishing guidance for the relationship

between external audit teams and audit clients' IA functions. In particular, rule-making bodies can take the findings offered in this study into account when regulating the type and extent of external auditors' utilization of clients' IA staff for a better supervision of the coordination and interaction between external audit and IA teams. The empirical evidence provided in this study also calls for an increased regulatory attention to the role and functioning of corporate IA departments given their practical significance to the external audit profession.

The current study is subject to a number of worth noting limitations. First, the study's sample is relatively small. This was mainly due to the lack of any publically available

data about audit fees in Kuwait, which makes the data set used in the current study unique in some way. Hence, future similar empirical examination is needed to re-investigate the IA-fees relationship using a larger sample size, possibly when audit fees data become publically available in the Kuwaiti market. The use of the regression method given the low number of cases is inevitably another limitation of the current study. In addition, the empirical analysis of the current study is focused on the IA-fee relationship, with no implications made on the possible effect of this relationship on audit quality. Future research, therefore, should be carried out to investigate the impact of the IA contribution in the external audit work on audit quality.

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