

**RESOURCE CURSE REDUCTION
THROUGH INNOVATION:
THE CASE OF KUWAIT**

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The thesis is submitted in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in the Department of Human Resources and Marketing Management:

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DECLARATION

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

MESHAAL JABER AL AHMED AL JABER AL SABAH

SPECIAL DEDICATION

I dedicate this dissertation
in memory of my father Sheikh Jaber Al Ahmad Al Jaber Al Sabah
who firmly established in me a sense of moral and ethical thinking,
to my mother who gave me the love of life,
to my brothers and sisters who gave me a life of love,
and to my beloved country The State of Kuwait.

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A number of people have been influential in the preparation and completion of this study. While the author alone is answerable for the arguments advanced, it would be wrong and ungracious not to welcome this opportunity to thank those people who have given the benefit of their ideas, research, support and attention.

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ABSTRACT

The strategic issues surrounding the governance of oil resources and its implication for the growth and development of Kuwait through innovation are considered in this study – Resource Curse Reduction through Innovation. Within the large and growing body of work in this area a negative relationship between resource abundance and poor economic performance has often been empirically established. Many of the third world countries are richly endowed with significant natural resources. A plethora of research findings shows that these countries are scoring lower on human development, they exhibit pervasive corruption, display conflicts and a large percentage of their population live in dire poverty. Moreover, an enormous amount of their gross domestic income is spent on defence spending and manifests an autocratic form of governance. For the most part this evidence appears to support the “resource curse” hypothesis. The question that arises is whether there is any prospect of the “resource curse” being converted into a “blessing”. This study examines the role of innovation in this context as Kuwait considers moving away from its dependence on its natural resources which sustain the economy. Since, innovation is considered a result of numerous interactions between key organizations and groups in the economy including institutions of learning, government, firms and other organizations which together form an innovation system, it may be opportune to consider the reductive role of innovation related to the resource curse.

There are many unique cultural issues that confront Kuwait, and make it a fundamentally different case from other countries endowed with natural resources. The culture of governance in Gulf countries, and the norms and values within each individual Gulf country, become key determinants of innovation that impact on the various economic, political and social phenomena. By reviewing the extensive literature in both the field of the resource curse and innovation and collecting primary data, this study offers an overview of the challenges of promoting and supporting innovation in Kuwait, and the effectiveness of dissemination of innovative practices throughout the various economic sectors.

Numerous studies have considered whether a country's natural resources are a curse or a blessing. Emerging findings appear to suggest that at times, resource-based economic growth models have indeed inhibited growth rates. Development economics also presents numeric data to substantiate the view that the gifts of nature are non-renewable and cannot be replenished. The hypothesis that natural resources of a country might be more of an economic curse than a blessing needs to be tested at different stages of economic growth of a country. The rate at which natural resources are exploited has often been cause for concern. From an economic perspective, Kuwait should inevitably switch from dependence upon natural resources to the development of sectors based on knowledge, skills, capital and technology. A defining characteristic of many resource-rich countries is the discrepancy between the interest of the stewards of the resources and the owners of the resources. At times those in political office (the stewards) appear to work extremely hard to ensure that the rest of the population (the owners) receive little benefit from the resources with which their countries have been abundantly endowed, and so the governance of natural resources merits further research. The study shows that income accruing as a result of the discovery of oil in Kuwait rapidly changed Kuwait's economic priorities, bringing new opportunities and at the same time new challenges. The findings of the research highlight many important issues relating to innovation and the depletion of non-renewable resources indicating to what extent certain sectors of the economy are innovative. One of the unique challenges facing Kuwait is what collective action is necessary to safeguard time honoured traditions that combine economic prosperity with solidarity. Today Kuwait is in need of new commitments on the part of its citizens and decisive actions in political leadership. Instead of maintaining structures and organizations that have shown themselves unable to deal with the challenges that face Kuwait, Kuwait must be ready to support structural changes. This in particular requires a prioritisation of resources towards education, research and development. Kuwait can only become comprehensively innovative if all sectors support the development of innovative products and services. Strategic issues entailing

innovation require the involvement of all parties. These include businesses, the public sector, producers and consumers. A wide-ranging partnership for innovation is necessary, particularly when a country's resources are in question. To establish an optimal framework and develop potential for innovation, the prospect of an innovation-friendly market must be widely accepted and a national innovation system where the flows of technology and information among people, enterprises, and institutions that are the key to the innovation process at the national level are required.

In light of these issues this study recommends the reduction of a resource curse through targeted innovation initiatives. The exploitation of natural assets is a matter of grave concern. Exploration and exploitation are costly and risky exercises in terms of growth and profitability. Kuwait needs to cultivate a culture that fosters creative ideas associated with, among others, safety and security of its natural and human resources, morality, employment and health within the context of an increasingly global environment. A lack of a shared vision, purpose and strategy reduces the vital role that innovation can play. Investment in innovation is therefore critical and Kuwait needs to reinvent itself economically, politically, socially, ethically and morally in this regard. Failure to achieve this would result in Kuwaiti governments failing to fulfill its mandate, and thereby reducing the return to private effort and dampening private initiatives.

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CHAPTER ONE

INTRODUCTION AND OVERVIEW OF THE STUDY

"The jar of meal will not be emptied and the jug of oil will not fail" (The Holy Bible)

1.1 INTRODUCTION

This study: "**resource curse reduction through innovation: The Case of Kuwait**" considers the strategic issues surrounding the governance of oil resources and its implication for the growth and development of Kuwait through innovation. Within the large and growing body of empirical work in this area a negative relationship between resource abundance and poor economic performance has often been empirically established. For the most part this evidence appears to support the "resource curse" hypothesis. The question that arises is whether there is any prospect of the "resource curse" being converted into a "blessing". This study places innovation into context within the confines of the natural resource that sustains the Kuwaiti economy. There are many unique issues that confront Kuwait, and make it a fundamentally different case from other countries endowed with natural resources. The culture of governance in Gulf countries, and the norms and values within each individual Gulf country, become key determinants of innovation that impact on the various economic phenomena. By reviewing the extensive literature in both the field of the resource curse and innovation and collecting primary data, this study offers an overview of the challenges of promoting and supporting innovation in Kuwait, and the effectiveness of dissemination of innovative practices throughout the various economic sectors.

1.2 PURPOSE OF THIS STUDY - INNOVATION IN THE "CURSE-BLESSING" CONTEXT

Research by Auty and Mikesell (1998) on sustainable development in mineral economies focuses on the determinants of innovation. Several authors, among whom one could include Freeman (1982), Porter (1990), Lundvall (1992) and Nelson (1993) describe the link between innovation

and competitive economic outcomes and their results have been widely adopted in the policy research domain. However, the necessary preconditions in formulating and implementing its strategic framework as a curse reductive for oil rich countries has still to be explored, particularly in oil rich Gulf countries. This view is taken on board by Van der Panne and Van Beers (2006) who ask, what favours regional innovation? Economies are inextricably linked to the type of governance and political policies that states have endured over time, with Collier and Hoeffler (2000) eloquently addressing these issues in terms of greed and governance. Wilson (2010:5) in his seminal work – “is it possible to build sustainable innovation capacity in oil rich Gulf Countries” – presents a pessimistic picture and suggests that there is very little scope currently for Gulf States to become more internationally competitive with respect to innovation and knowledge fundamentals.

In this study in Kuwait, any contribution to knowledge must be interdisciplinary, taking into consideration the politics of the region, socio-economic issues, history, and the nature of business conducted on the part of the private and the public sector. Failure to address the issues from an interdisciplinary perspective may result in stakeholders being antagonized and the consequences could be disastrous. Furthermore, an interdisciplinary approach ensures a process of solving broad and complex problems adequately since most significant issues have multiple causes and effects. A range of perspectives should ideally be considered providing a more comprehensive understanding of issues and challenges. The thought that innovation is vital for socio-economic growth and human development was long recognized by Adam Smith and even Karl Marx. As much as the global socio-economic and political environments are in a state of dynamic change, these have a major impact on economies. Economies are in different stages of economic growth. Through oil revenues Kuwait has achieved a status of high mass consumption and at the same time, has faltered in terms of innovation.

Within the context of innovation, countries must nevertheless equate the changes that are taking place in the external environment with time-honoured traditions in order to maintain a certain sense of cohesiveness (Afsaruddin, 2002). Success for any country comes from adopting appropriate changes. Any change that is effectively and consistently managed, presents the country with opportunities for sustained growth and ultimately human and social development. To address the challenges and opportunities presented by today's complex, and often unpredictable markets, an organisation must be able to combine resources in novel ways, dispose of or reconfigure resources that are no longer relevant and acquire new resources. An organisation's ability to manipulate resources continuously and rapidly becomes a competitive capability that is not easily imitated by competitors. This capability to innovate is critical to an organisation's viability since it enables the development and introduction of new products and services. It thus enables an organisation to maintain, or improve its current market position.

Acknowledging that innovation in any economy requires a thorough understanding of its social fabric, geographical environment and political economy, an examination of the potential resultant changes accruing to an economy needs to be considered within a curse-blessing context. Kuwait's blessing, in the form of oil, is placed in the context of the study and can underpin the transformation of Kuwait from a welfare economy to one where free market innovations prevail, resulting in sustained growth and development, with its oil revenues becoming the driver of innovation. The "curses" are in the form of a dependence syndrome that was created as a result of previous forms of governance that pre-date the discovery of oil. Generation upon generation of Kuwaitis have benefitted from the wealth in numerous ways. The lump-sum government hand-outs in the form of donation to the nation, debt-wipe off and free medical care abroad and many social and philanthropic gestures by the government are primary causes of concerns since many of these are not sustainable. Innovation

initiatives in Kuwait open a new chapter in the conflict over time-honoured traditions and modernity. A haphazard approach in using innovation as a curse reduction tool may have disastrous consequences. Embracing an all-encompassing concept of innovation, this study considers innovation as an idea, as theory and rhetoric, and as a political and socio-economic practice, sustaining an economy and at the same time improving productivity. Moreover, this study places innovation in Kuwait as a policy driven movement, and as a process that shows every sign of reconstituting major institutional sectors of contemporary society. The implementation of innovation becomes a critical component within this definition. In ultra-conservative societies the inertia for change comes from certain policy initiatives created by the government. A mandate by the government to change its *modus operandi* is indeed an impetus for change. An innovative solution by the government in the form of policies and procedures for migration to innovation is the start of change in a mindset towards innovation. In this regard four major institutions have been established by the government to ensure that there is diffusion of innovation in terms of a comprehensive policy and procedure. The institution includes: Kuwait Foundation of Advancement of Science, Kuwait Institute of Scientific Research, Kuwait Investment Authority and the Arab Development Fund. These institutions are considered in greater detail in Chapter Three.

As a result innovation has become a central feature of economic policy in Kuwait and indeed in a variety of economies in the Arab world. Governments worldwide are looking to innovation as a possible solution to their political needs. Innovation in Kuwait should therefore be seen as a process of embracing efficient and competitive initiatives. Effective programmes of innovation in the economy involve many elements, both macro and micro in character. These programmes include the introduction of new goods and new methods of production, the opening of new markets and the sourcing of new material, as well as managing and restructuring enterprises, establishing an appropriate business environment, building

financial intermediaries and promoting competitive market conditions. This all-encompassing definition helps to avoid ambiguity and facilitates comprehensive analysis of the issue in all its aspects.

An investment in innovation is an investment in security. The spread of democracy continues throughout the world. Spectacular innovation is affecting the technology of production and the organization of firms as well triggering social and cultural changes. A widely accepted hypothesis is that people are motivated by a hierarchy of needs. Safety and security of the body, morality, employment, health and resources is the second level of human needs identified by Maslow. Satisfaction associated with these issues is said to lead to a sense of belongingness and love and finally to other higher order of needs. An investment in security becomes critical when one considers the broadened view of security in relation to countries endowed with rich natural resources. Since the gifts of nature are not renewable and cannot be replenished, Kuwait needs to align itself to economic, political, social, and ethical strategies that enhance sustainable socio-economic and political development. Insecurity in its broadest definition reduces the return to private effort and destroys private initiatives.

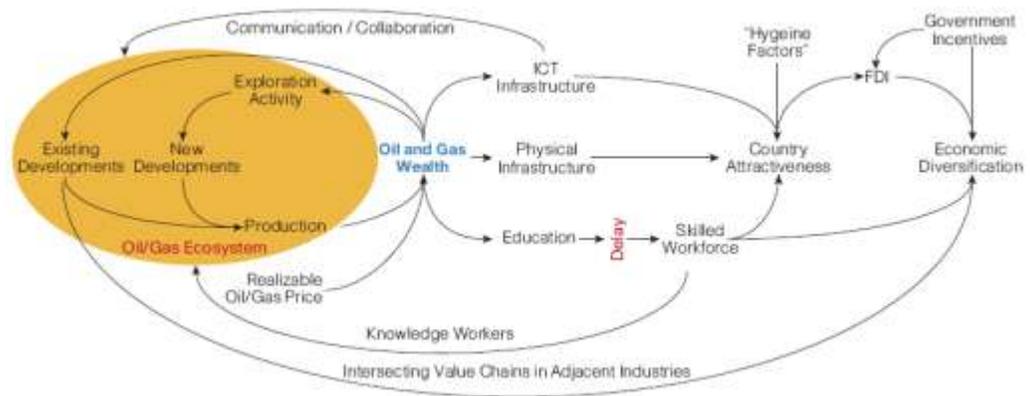
The accompanying Figure 1.1 shows the diffusion of innovation in terms of a wider definition of security that should ideally encompass: the improvement of social relations; the fostering of economic growth, financial development and independence; reducing political, social and financial volatility; fostering employment growth; promoting a sustainable environment; restructuring social security systems; delivering food security, ensuring fiscal discipline; and embracing trade agreements. Education plays a pivotal role in the pursuit of creating this awareness.

A wider definition of innovation should ideally encompass: the improvement of social relations, the fostering of economic growth, financial development and independence; reducing political, social and financial volatility; fostering employment growth; fostering sustainable environment; restructuring social

security; re-focus on food security, ensuring fiscal discipline; and re-energizing trade agreements. An investment in all forms of governance of innovation plays a pivotal role in the pursuit of country attractiveness.

FIGURE 1.1

DIFFUSION OF INNOVATION – A BROADENED VIEW



Source: *The Natural Wealth of Nations: Transformation of Oil and Gas Producing Economies*, Cisco Internet Business Solutions Group (IBSG) (Wood, 2007).

Oil and gas-based economies have an opportunity to use the wealth derived from mineral assets to create societies capable of sustaining growth and diversity, with infrastructure and education taking priority, as illustrated in the figure. Infrastructure will provide the platform for linkages across the oil and gas community, fostering creativity and innovation. Education will help to create an environment where innovation can take place, and will also provide the labor pool so desperately needed by an industry whose specialized knowledge and talent are currently dwindling instead of growing. By creating an ICT infrastructure, educational and research institutions become connected to community and industry. Connected cities become part of the network, providing access to data and enabling collaboration and cooperation among communities, companies, institutions, and government. When the workforce becomes connected, even while mobile or in remote locations, and manufacturing and production are tightly tied to business

analysis and decision making, the benefits become tangible and quantifiable.

The purpose of this study is therefore to consider the reductive role of innovation in combating a resource curse situation within Kuwait.

1.3 DEFINING INNOVATION WITHIN THE CONTEXT OF THIS STUDY

Innovation is one of those words that suddenly seem to be all around us. Firms care about their ability to innovate, on which their future allegedly depends (Christensen and Raynor, 2003), and many management consultants are busy persuading companies about how they can help them improve their innovation performance. Politicians care about innovation too, how to design policies that stimulate innovation has become a hot topic at various levels of government. The European Commission, for instance, has made innovation policy a central element in its attempt to invigorate the European economy (see Chapter 2). A large literature has emerged, particularly in recent years, on various aspect of innovation and many new research units focusing on innovation have been formed (Fagerberg and Verspagen, 2009).

Innovation is the management of all the activities involved in the process of idea generation, technology development, manufacturing and marketing of a new or improved product. There is a distinction between an innovation and a product. Product is an output of innovation. This is consistent with what Drucker(1992) posits: “.... In a knowledge economy knowledge is a product, in a knowledge-based economy, knowledge is a tool”. Today, the idea of innovation is widely accepted. It has become part of our culture – so much so that it verges on becoming a cliché. But even though the term is now embedded in our language, to what extent do we fully understand the concept? Moreover, to what extent is this understanding shared? A scientist’s view of innovation may be very different from that of an accountant in the same organisation.

A brief analysis of economic history, especially in the United Kingdom, will show that industrial technological innovation has led to substantial economic benefits for the innovating *company* and the innovating *country*. Indeed, the industrial revolution of the nineteenth century was fuelled by technological innovations (see Table 1.1).

TABLE 1.1

NINETEENTH-CENTURY ECONOMIC DEVELOPMENT FUELLED BY TECHNOLOGICAL INNOVATIONS

Innovation	Innovator	Date
Steam engine	James Watt	1770–80
Iron boat	Isambard Kingdom Brunel	1820–45
Locomotive	George Stephenson	1829
Electromagnetic induction dynamo	Michael Faraday	1830–40
Electric-light bulb	Thomas Edison and Joseph Swan	1879–90

Technological innovations have also been an important component in the progress of human societies. Anyone who has visited the towns of Bath, Leamington and Colchester will be very aware of how the Romans contributed to the advancement of human societies. The introduction over 2,000 years ago of sewers, roads and elementary heating systems is credited to these early invaders of Britain.

Innovation has long been argued to be the engine of growth. It is important to note that it can also provide growth almost regardless of the condition of the larger economy. Innovation has been a topic for discussion and debate

for hundreds of years. Nineteenth-century economic historians observed that the acceleration in economic growth was the result of technological progress. However, little effort was directed towards understanding *how* changes in technology contributed to this growth. Schumpeter (1934, 1939, 1942) was among the first economists to emphasise the importance of *new products* as stimuli to economic growth. He argued that the competition posed by new products was far more important than marginal changes in the *prices* of existing products. For example, economies are more likely to experience growth due to the development of products such as new computer software or new pharmaceutical drugs than to reductions in prices of existing products such as telephones or motor cars. Indeed, early observations suggested that economic development does not occur in any regular manner, but seemed to occur in 'bursts' or waves of activity, thereby indicating the important influence of external factors on economic development.

This macro view of innovation as cyclical can be traced back to the mid-nineteenth century. It was Marx who first suggested that innovations could be associated with waves of economic growth. Since then others such as Schumpeter (1934, 1939), Kondratieff (1935/51), and Abernathy and Utterback (1978) have argued the long-wave theory of innovation. Kondratieff was unfortunately imprisoned by Stalin for his views on economic growth theories, because they conflicted with those of Marx. Marx suggested that capitalist economies would eventually decline, whereas Kondratieff argued that they would experience waves of growth and decline. Abernathy and Utterback (1978) contended that at the birth of any industrial sector there is radical product innovation which is then followed by radical innovation in production processes, followed, in turn, by widespread incremental innovation. This view was once popular and seemed to reflect the life cycles of many industries. It has, however, failed to offer any understanding of *how* to achieve innovative success.

After the Second World War economists began to take an even greater interest in the causes of economic growth (Harrod, 1949; Domar, 1946). One of the most important influences on innovation seemed to be industrial research and development. After all, during the war, military research and development (R&D) had produced significant technological advances and innovations, including radar, aerospace and new weapons. A period of rapid growth in expenditure by countries on R&D was to follow, exemplified by US President Kennedy's 1960 speech outlining his vision of getting a man on the moon before the end of the decade. But economists soon found that there was no *direct* correlation between R&D spending and national rates of economic growth. It was clear that the linkages were more complex than first thought (this issue is explored more fully in Chapter 8).

There was a need to understand *how* science and technology affected the economic system. The neo-classical economics approach had not offered any explanations. A series of studies of innovation were undertaken in the 1950s which concentrated on the internal characteristics of the innovation process within the economy. A feature of these studies was that they adopted a cross-discipline approach, incorporating economics, organisational behaviour and business and management. The studies looked at:

- the generation of new knowledge;
- the application of this knowledge in the development of products and processes;
- the commercial exploitation of these products and services in terms of financial income generation.

In particular, these studies revealed that firms behaved differently (see Simon, 1957; Woodward, 1965; Carter and Williams, 1959). This led to the development of a new theoretical framework that attempted to understand how firms managed the above, and why some firms appeared to be more

successful than others. Later studies in the 1960s were to confirm these initial findings and uncover significant differences in organisational characteristics (Myers and Marquis, 1969; Burns and Stalker, 1961; Cyert and March, 1963). Hence, the new framework placed more emphasis on the firm and its internal activities than had previously been the case. The firm and how it used its resources was now seen as the key influence on innovation.

Neo-classical economics is a theory of economic growth that explains how savings, investments and growth respond to population growth and technological change. The rate of technological change influences the rate of economic growth, but economic growth does not influence technological change. Rather, technological change is determined by chance. Thus population growth and technological change are exogenous. Also, neo-classical economic theory tends to concentrate on industry or economy-wide performance. It tends to ignore differences among firms in the same line of business. Any differences are assumed to reflect differences in the market environments that the organisations face. That is, differences are not achieved through choice but reflect differences in the situations in which firms operate. In contrast, research within business management and strategy focuses on these differences and the decisions that have led to them. Furthermore, the activities that take place within the firm that enable one firm seemingly to perform better than another, given the same economic and market conditions, has been the focus of much research effort since the 1960s.

The Schumpeterian view sees firms as different – it is the way a firm manages its resources over time and develops capabilities that influences its innovation performance. The varying emphasis placed by different disciplines on explaining how innovation occurs is brought together in the framework in Figure 1.1. This overview of the innovation process includes an economic perspective, a business management strategy perspective and organisational behaviour which attempts to look at the internal activities. It

also recognises that firms form relationships with other firms and trade, compete and cooperate with each other. It further recognises that the activities of individuals within the firm also affect the process of innovation. While there are many arguments and debates in virtually all fields of management, it seems that this is particularly the case in innovation management. Very often these centre on semantics. This is especially so when innovation is viewed as a single event. When viewed as a *process*, however, the differences are less substantive.

The collection of quantitative data of a study of this nature immediately requires an explicit definition of fundamental terms. Innovation is one such term in this study and “resource curse” is another. Bakken (2002) identifies innovation as a fuzzy concept that evokes sharp political reactions. According to Schumpeter “radical” innovations shape big changes in the world, whereas “incremental” innovations fill in the process of change continuously. The term innovation certainly covers a vast range of ideas and policies relating to change. This may include privatization which Star (1988:1) considers may vary from the “eminently reasonable to the wildly impractical”. Varied, and at times unclear in its meaning, innovation has unambiguous political origins and objectives too. Innovation goes far beyond research and development. The impact of innovation extends beyond the confines of research laboratories to users, suppliers and consumers. Governments, private businesses, non-profit organizations and other institutions are beneficiaries of innovation or innovators themselves. According to the Oslo Manual of 2005 which is the foremost international source of guidelines for the collection and use of data on innovation activities across the OECD countries (Organisation for Economic Co-operation and Development) contend that the ability to determine the extent of innovation initiatives and the characteristics of innovators are prerequisites for the pursuit and analysis of policies aimed at fostering innovation. The Manual investigates the field of non-technological innovation and the linkages between different innovation types. Furthermore, it includes an annexure on the implementation of innovation surveys in developing countries. Innovation is at the heart of economic change. Schumpeter proposed a

list of various types of innovations. These include: introduction of a new product or a qualitative change in an existing product; process innovation new to an industry; the opening of a new market; development of new sources of supply for raw materials or other inputs; and changes in industrial organisation.

The first issue related to innovation is product innovation. This involves a good or service that is new or significantly improved which may include significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics. The second refers to process innovation and relates to new or significantly improved production or delivery methods. Marketing innovation, the third form of innovation includes significant changes in product design or packaging, product placement, product promotion or pricing and finally, organisational innovation relates to a new organisational method in business practices, workplace organisation or external relations.

The characteristics of innovation suggest that innovation is the result of numerous interactions between key organizations and groups in the economy including universities, government, firms and other institutions, which together form an innovation system (Wilson, 2010). Wilson (2010) goes on to add that innovation does not take place within a vacuum and that there is an interaction between numerous stakeholders. According to Yam et. al. (2011) a national innovation system consists of flows and relations which exist among industry, government and educational institutions in the development of science and technology. Moreover, they consider Technological innovation as a learning process that results in enhancement of the knowledge and skills firms need to choose, install, operate, maintain, adapt, improve, and develop their technology requirements. Yam et. al. (2011) add that in a world of increasing competition and technological change, the generation and diffusion of innovations increasingly rely on new technological knowledge generated not only through internal research and development department, but also by the firm's interaction with external sources of innovation, particularly in the region in which the firm operates.

1.4 INNOVATION AND THE RESOURCE CURSE HYPOTHESIS

It is widely acknowledged that revenues resulting from natural resources should generate wealth for an economy, promote economic progress, and increase the wellbeing of each citizen. The logic behind this assertion can be based upon simple common sense, which suggests that while money cannot buy happiness, it is a good "down payment". A large windfall of revenues accruing to an economy from an abundance of natural resources ought to place that economy in pole position economically compared with others. While not a central concern of this study, the question as to whether resource-rich countries have experienced a worse performance (in terms of economic progress and poverty reduction) than countries without such apparent "benefits" is an important issue. However, this study concentrates on understanding innovation as a strategy that converts the blessings into a common good for all. Much of this conversion process relies upon configuring governance structures that make innovation possible. The "Resource Curse" phenomenon is not an immutable law, but the study considers it a strong recurrent tendency.

Berkhout et al. (2006), in their seminal work, identify the changes that are taking place in the so-called *innovation economy*, in which - besides capital, labour and knowledge - creativity is identified as the fourth principal factor of production. The authors go on to describe the activities in an innovation economy as creative enterprise with knowledge. Creativity is an important aspect of human endeavour, particularly in distressing economic times. The assumption of the study is that together with creativity, innovation creates added value. This may be central to converting curse effects into blessings. Whether innovation is an imperative for the survival of economies endowed with natural resources and whether it is a solution to the political, social and economic woes of Kuwait are considered in this study.

For much of the contemporary period the Kuwaiti economic system entailed the provision of free housing and other welfare services to Kuwaiti nationals.

Security in the form of jobs in the public sector is a privilege that is accorded to Kuwaitis and the private sector is not in a position to offer the same salaries. This has created a dependence syndrome resulting in a “financial duty” and the state’s obligation to fulfill this dependence syndrome. This is becoming untenable as a result of the increasing population and the fact that Kuwait’s fiscal revenues remain limited to the revenues generated by oil. Between 1990 and 2009 the Arab Planning Institute shows that the population increased by 2.44%. Many of the stateless community are being incorporated in the State of Kuwait. In this regard the Arab Planning Institute suggests that the continued welfare system will become unsustainable. Oil price fluctuations make government revenues unstable and therefore this study considers whether innovation can help combat the adverse effects of this volatility.

On a no-change scenario, the future of this country will be uncertain, possibly bleak. The population is set to more than double by 2035. Four-fifths of Kuwaiti citizens are employed in the public sector. Oil reserves are large, but will decline over time. Kuwait has now reached a stage where its entrepreneurs feel so constrained that they look abroad, and not at home, for opportunities, (Rt. Hon. Tony Blair, 2010).

It is widely believed that Innovation serves as an effective economic mechanism for achieving greater efficiency, strengthening the role of the private sector, improving the public sector financial health, and freeing up resources for allocation to other important areas of government. Kuwait, like many countries around the world, has already taken these views into account and started revitalizing its public enterprises.

1.5 METHOD OF STUDY

The process of resource-curse reduction (or resource-blessing enhancement) through innovation requires a methodological approach. Key decision makers must base their decisions on both their goals associated

with curse reduction and the respective socioeconomic and institutional environment which determines the strategies adopted. In this regard, it was essential that individual interviews or focus group discussions with key stakeholders be held. (Nine major stakeholders were interviewed. These stakeholders are identified in Chapter Five.)

Individual interviews or focus group discussion is a research technique that collects data through interaction with the interviewer on a specific topic. These interviews were particularly useful as empirical evidence and resources relating to curse-blessing effects in Kuwait are limited. In this study, the individual interview method was firstly used to gain an in-depth understanding of key stakeholders' perceptions relating to Kuwait's oil production and its implications for innovation. Secondly, the interview identified the challenges that face the economy. This assisted in formulating the hypothesis for the study, and helped develop a questionnaire that reflects the sentiments of key stakeholders from the private and public sectors.

The findings of the preliminary study provided insights on:

- The extent to which resource abundance (in the form of oil) shaped the Kuwaiti Economy;
- Whether Kuwait uses its natural resources in effective ways;
- Perceived weaknesses of an oil dependent State;
- Options to reduce oil dependency in Kuwait;
- Thoughts of stakeholders regarding the Kuwait Investment Authority's policies and roles;
- Whether privatization should be an option;
- Kuwait's potential for innovation; and
- Factors associated with a well-diversified and technologically advanced economy.

1.6 THE MAIN STUDY: QUESTIONNAIRE AND PILOT SURVEY

Despite certain limitations, the individual interviews formed the basis for the major research project. A semi-structured questionnaire (Appendix 1.1) was used to elicit the required information. All interviews were conducted in Arabic as this allowed the interviewees to express themselves freely in a language they best understood. The observations and discussions were then translated into English.

The questionnaire was then given to a randomly selected group of twenty individuals. These individuals were students, housewives, people working in the private and public sectors and English and Arabic Professors. The purpose of this was to determine the appropriateness, relevancy and reliability of the questionnaire. A revised questionnaire (Appendix 1.3) which was translated into Arabic – Appendix 1.4) was then constructed and administered randomly to 125 respondents. The sample for the main survey represented individuals from the Kuwaiti and non-Kuwaiti communities. This was vitally important to discern the attitudes of expatriate communities also. The main survey was conducted during a forty five day period which ran through April 2009 – June 2009. Representation from each of the identified sectors was included. Ninety questionnaires were returned and twelve questionnaires were subsequently rejected as a result of the incomplete data provided. The result was a total of 78 usable questionnaires. The data on the questionnaire was captured and analyzed using SPSS computer software.

1.7 CHAPTER OUTLINE

This initial chapter presents an overview of the study, placing it into perspective and introducing its purpose. Since innovation is considered a key determinant in the reduction of curse-effects, the chapter identifies the objectives of the study and briefly introduces the methodological approach used.

Chapter Two is a comprehensive literature survey which focuses on the resource curse. This chapter considers the findings of recent studies which have examined the issue of whether a country's natural resources are a curse or a blessing and considers the emerging findings that appear to suggest that, at times, resource abundance has indeed inhibited growth rates. The hypothesis that natural resources of a country might be more of an economic curse than a blessing is a cause for concern. From an economic perspective, economies endowed with rich natural resources should inevitably switch from dependence upon natural resources to the development of sectors based on knowledge, skills, capital and technology. The chapter also considers whether a boom in resource revenues can lead to an enduring competitiveness.

Chapter Three places Kuwait in context within a political and economic framework and considers the institutional framework expected to convert valuable natural resources into enhanced standards of living for Kuwaiti citizens. The unique issues that confront Kuwait, and make it a fundamentally different case from other countries endowed with natural resources are addressed in this chapter. The culture of governance, and the norms and values within Kuwait become key determinants of innovation. A review of the institutional environment thus offers an overview of the challenges of promoting and supporting innovation in Kuwait.

Chapter Four, surveys resource curse reduction through innovation. Income accruing as a result of the discovery of oil in Kuwait rapidly changed Kuwait's economic priorities, bringing new opportunities and at the same time new challenges. The chapter highlights that the government of Kuwait is concerned about many important issues relating to the depletion of non-renewable resources. It identifies the unique challenges facing Kuwait and considers what collective action is necessary to safeguard time honoured traditions that combine economic prosperity with solidarity. This chapter

proposes a framework that is favourable to innovation. The prospect of an innovation-friendly market is also considered.

A detailed methodology adopted for the purpose of this study is presented in Chapter Five. While the previous chapters provided a theoretical foundation for understanding the roles innovation and technology can play in reducing a country's dependence on depleting, mineral natural resources this chapter describes the research design employed to achieve the objectives of this study.

The findings of the semi-structured interviews are provided in Chapter Six, which reports the results of the interviews with key stakeholders.

Chapter Seven presents the empirical analysis and the findings of the data obtained through the main survey instrument the research questionnaire. The statistical software SPSS v.17 was used to analyse the data and the chapter presents the various descriptive statistics and findings of the research. The stakeholder's perception of the extent of innovation within the Kuwaiti environment is presented and the pervasiveness of innovation in the various different sectors are also identified. Finally, the chapter concludes by briefly discussing the importance of innovation within the Gulf countries.

Chapter Eight, the final and concluding chapter of the study, presents the recommendations and also identifies the associated limitations of the research. Moreover, the challenges that were encountered are discussed and possible areas for future research are also provided. The chapter concludes by proposing there is a critical need for a planned investment in innovation - so as to convert the natural resources of Kuwait into a greater blessing for all.

1.8 CONCLUSION

The purpose of this study is to consider the role of innovation in combating a resource curse situation within Kuwait. The chapter recognizes that innovation has become a central feature of economic policy in a variety of economies in the developed and developing world, with governments around the globe looking to innovation as a possible solution to their political and economic goals. Innovation in Kuwait should therefore be seen as an ongoing process of embracing efficient and competitive initiatives. A compelling aspect of the study is change through innovation, with innovation considered the engine of development, as no economy can continue to evolve and thrive without a strong innovation framework.

CHAPTER TWO

LITERATURE SURVEY: THE RESOURCE CURSE

*"It's a blessing and a curse.
Watch out, one don't make things worse.
For the best things used ill can become evil;
And the worst things should prove to sell, if used well". (Palliam, 2011)*

2.1 INTRODUCTION

This chapter considers the findings of recent studies which have examined the issue of whether a country's natural resources are a curse or a blessing. The resource curse is a term which generally refers to the negative growth and development outcomes that can result from the development of natural resources. Emerging findings appear to suggest that at times, resource-based economic growth models have indeed inhibited growth rates. Development economics also presents numeric data to substantiate the view that the gifts of nature are non-renewable and cannot be replenished. The hypothesis that natural resources of a country might be more of an economic curse than a blessing needs to be tested at different stages of economic growth of a country. The rate at which natural resources are exploited is often a cause for concern. From an economic perspective, economies endowed with rich natural resources should inevitably switch from dependence upon natural resources to the development of sectors based on knowledge, skills, capital and technology.

A hugely valuable resource, oil is a black, viscous substance and a motor of global industrialization. For Kuwait in particular, it offers the potential for exceptional profit generation benefiting both the state and private sectors. As a result oil is responsible for what has often been called the "paradox of plenty". This chapter looks at this issue whilst considering the ability or inability of richly endowed countries to raise their growth rates and development levels above those of countries without natural resources. Moreover, the chapter considers whether a boom in resource revenues leads to an enduring competitiveness. It also highlights that with continued

dependence of an economy upon natural resources governments should diversify the economy and secure other revenue sources. Countries and regions with an abundance of natural resources, specifically point-source non-renewable resources like minerals and fuels, tend to have less economic growth and worse development outcomes than countries with fewer natural resources. This is hypothesized to happen for many different reasons, including a decline in the competitiveness of other economic sectors (caused by appreciation of the real exchange rate as resource revenues enter an economy), volatility of revenues from the natural resource sector due to exposure to global commodity market swings, government mismanagement of resources, or weak, ineffectual, unstable or corrupt institutions (possibly due to the easily diverted actual or anticipated revenue stream from extractive activities). Finally, the extent to which the resource curse impacts on the Kuwaiti economy is addressed.

2.2 CONCEPTUALIZING THE RESOURCE CURSE AND BLESSING

Generally gifts of nature are defined as natural resources. These range from *inter alia*, mineral deposits, water, arable land and vegetation, to natural forests, marine resources, animal life and oil. By definition natural resources are fixed in supply and therefore inelastic. These gifts are therefore non-renewable or exhaustible assets. In the case of oil, most oil reserves lie in developing economies where governance mechanisms tend to be weak. This predicates a high prevalence of the resource curse syndrome. According to Smith (1776):

Projects of mining, instead of replacing the capital employed in them, together with the ordinary profits of stock, commonly absorb both capital and stock. They are the projects, therefore, to which of all others a prudent law-giver, who desired to increase the capital of his nation, would least choose to give any extraordinary encouragement. (Smith, 1776, p.562).

The “paradox of plenty” relates to any country that is richly endowed in natural resources and at the same time presents itself with numerous conflicts. These conflicts could range from social and political disorders to economic woes of the majority of people. As a result an abundance of natural resources presents curse effects and encourages conflict. Nevertheless there are studies (Ross, 2003) that suggest oil-producing developing countries, that have very high levels of oil revenue are remarkably stable. An analysis of the ways in which governments spend oil revenues gives an indication of the extent of the paradox.

Auty (1998, p.9), reflects the view of numerous authors arguing that resource-rich and developing countries have not performed as well as countries that are deficient in resources. Nabli and Silva-Jauregui at the Fourteenth World Congress of the International Economic Association in Morocco (Marrakech) held between August 29 and September 2 2005. analyze the relationship between democracy or its deficit in the MENA (Middle East and North Africa) region. They argue that there is no question that democracy has lagged behind in the MENA region. There is a persistent democracy gap. Contrary to what can be observed in the rest of the world, there is no correlation in the MENA region between the level of income and progress in democracy. The rich oil exporting countries in particular have among the lowest democracy scores. Per capita income growth in the MENA region has also been low, though not as low as Sub-Saharan Africa. However, the general literature on the link between democracy and growth is not very conclusive and many of its results are either fragile or conditional. While there has been little democratic progress in MENA countries there has been progress in human development, in particular in education and health. They discuss a battery of governance indicators and conditions for good governance under democracy. Countries like Iraq, Lebanon and Syria that are more fragmented have worse initial conditions for good governance. Oil producing countries usually have worse governance indicators. The authors are skeptical that good governance may

come out of non-democratic regimes. On the other hand, obstacles to reform are numerous and political economy factors would tend to favor the status quo. This supports the idea of a resource-rich environment having an adverse effect on the growth of GDP. While this inverse correlation between growth and resource abundance has received widespread acceptance, recent research from Gupta (2007) and Karnick and Fernandes (2009) suggests a positive association between growth and resource abundance. However with the findings of Sachs and Warner (2001) and Auty (2001) showing strong inverse relationships between resource abundance and economic growth, this is the principal premise of the resource curse hypothesis.

Models could be generated to determine whether countries are better or worse off with smaller or larger endowments of natural resources (and whether any econometric associations are subject to bias). However, the character of the resources themselves is more important to consider than the underlying reasons for any association. Should countries fail to build upon their resource base productively and exert caution in its use, the result would be a failure in development that can be attributable to a country's overt dependence on resources. Moreover, Cowen (2007) points out:

... it is unfortunate that economists have to debate whether natural resources are a blessing or a curse for a developing nation. Minerals, diamonds or oil may appear to represent automatic wealth but resource-rich countries usually become mired in corruption. High oil revenues, for instance, allow a government to maintain power and reward political supporters without doing much for its people. (Cowen, 2007).

Yet Wright and Czelusta's (2002) findings suggest that some nations with large extractive industries – like Malaysia, Botswana and Chile – have overcome the resource curse and introduced sound development strategies that address poverty alleviation. Norway has also been cited as a country

that has surmounted “the curse”, along with Indonesia (prior to 1997), Australia and Canada. Auty (1998, p.46) questions if these exceptions exist, can it then be true that “the problems of mineral economies are inherent to the production function of mining?”

When one considers and addresses how a development strategy exploits a country’s abundance of resources, the argument is often reduced to a discussion of politics. Arguably countries whose political and social institutions and structures have not succeeded in supporting sustained development tend to be those who suffer from civil discontent, corruption and conflict. One can well imagine that in an environment of fragile institutions and factional politics, resource abundance may be a mixed blessing. The problem however lies not with the resources themselves, but in how the resources are managed. Whilst there may be strong evidence of the resource curse syndrome, there do however remain some compelling examples of economies who have converted the curse into a blessing. Resource curse presents itself in numerous different ways. These include political conflicts, social anomalies, and economic iniquities as a result of wealth accruing from natural resources. The poor governance of natural resource could be the major cause of conflicts. In this regard Kuwait in particular faces numerous challenges and these are considered in the subsequent sections.

2.3 THE PRESENCE OF A RESOURCE CURSE

Successfully managed resource economies surveyed in this chapter show that countries can overcome any "curse" bestowed upon them. Given the existence of a negative relationship between poor economic performance and resource abundance, countries rich in resources are usually measured against whether they have overcome this curse. Van der Ploeg (2011) writing in the *Journal of Economic Literature* considers whether Natural Resources are a curse or blessing. Their empirical evidence suggests that either outcome is possible. The paper investigates a variety of hypotheses

and supporting evidence for why some countries benefit and others lose from the presence of natural resources. Van der Ploeg (2011:366) contends that a “resource bonanza induces appreciation of the real exchange rate, deindustrialization, and bad growth prospects, and that these adverse effects are more severe in volatile countries with bad institutions and lack of rule of law, corruption, presidential democracies, and underdeveloped financial systems”. Another hypothesis is that a resource boom reinforces rent grabbing and civil conflict especially if institutions are bad, induces corruption especially in nondemocratic countries, and keeps in place bad policies. Finally, resource rich developing economies seem unable to successfully convert their depleting exhaustible resources into other productive assets. Van der Ploeg (2011) also offers some welfare-based fiscal rules for harnessing resource windfalls in developed and developing economies.

However, the resource curse hypothesis is highly sensitive to the chosen time period, the nature of the natural resources and the methodology used in arriving at such conclusions. As poor economic performance impacts on poverty and can also trigger conflicts and political change; abundant natural resources, rather than propelling growth and development, have often undermined it by promoting poor governance, conflict and pervasive poverty. The situation in many countries provides ample evidence for the dispiriting curse.

The empirical literature refers to countries that are endowed in rich natural resources, including various forms of fuel and minerals. The findings in various studies(Harford and Klein, 2005; Mehlum, Moene and Torvik, 2002; Karl, 1997) show negative relationships between poor GDP performance and an abundance of natural resources. Sachs and Warner in their numerous publications over the years have applied different techniques to try and isolate the effects of a number of potential explanatory variables. Whilst researching ninety five developing countries over a 20 year period

starting in 1970, in 1997 they found a negative correlation between growth and natural based exports, and they remain convinced that resource abundance does have some deleterious effects on economic performance.

Similarly, Auty, (2001a, p.3) found that “ ... between 1960 and 1990, the per capita incomes of resource poor countries grew between two to three times faster than those of the resource abundant countries”. While the difference between rich mineral driven countries and the weakest performers is greater than was expected, such findings are sensitive to the time-period chosen. Prior to the 1970s quantitative data shows that resource-rich countries grew more than countries that lacked natural resources (Stevens, 2003). Sharp fluctuations in the price of minerals can also distort the results. In Auty’s 2001 study, for example, oil prices fell from \$42.70 in 1999 to \$20.04 in 2000 and the per capita GDP captured this fall.

Discussions on how to define ‘resource abundance’ also raises problems. Definitions include: dependence on primary products, labour force employed in the sector and population size. Export orientation has also been used to define resource abundance. Limi (2006) identifies Botswana as a resource-rich diamond exporting country, whose growth rates over several years have been remarkably strong – 7.8 percent since the 1980s (forty percent of which can be attributed to mining). Other empirical work by De Ferranti et al. (2002) suggests that the negative growth effect is a result of the resource production dependence creating export dependence. In general empirical findings suggest that poor per capita growth performance was manifest in mineral exporting countries. In addition to a negative growth impact mineral rich countries have a very poor record in eradicating poverty and other social evils. This supports the commonly held belief that an abundance of resource has a negative impact on income inequality (Auty, 1994b; Fields, 1989; Sarraf and Jiwaji, 2001).

Carneiro (2006), citing reports of the United Nations Development Programme (UNDP), suggests that resource-abundance frequently leads to

increased income inequality. Two reasons are given as to why this might occur. Firstly, oil, gas and mining industries are often characterized by their 'enclave' nature, with few forward and backward linkages into the economy. During production, such industries employ only a relatively small number of highly-skilled, well-paid workers (and generally import the majority of inputs). Arguably more damaging is the possibility that what opportunity there is for manual and semiskilled jobs (most specifically during construction) may be lost through the influx of cheap foreign construction labour and the trend towards global procurement and sourcing. Secondly, in such circumstances public expenditure may exacerbate inequality. This can occur where expenditure is concentrated in the formal sector in towns and cities, skewing distribution against rural households (or where it is orientated towards the interests of the wealthier classes, for example favouring the construction of a university over investment in rural roads). As a consequence of these factors society identifies the production and export of natural resources with the interests of the rich. Carneiro (2006) also argues that there is a relationship between the abundance of oil, gas and minerals and limited success in poverty alleviation. Examples include worsening infant and child mortality and life expectancy at birth. The effects are possibly more pronounced for non-fuel mineral producers.

A further dimension of the resource curse is that it engenders conflict in societies as identified by Ross (2001) and Collier and Hoeffler (2000) leading to reduced growth rates and growing poverty. One can advance several reasons to explain this. Firstly, a society may view resource rents as something worth fighting for and to plunder (depending on who is in power). Indeed the revenues generated encourage those in power to increase spending on the military to counteract potential threats. Revenue generation can also alienate the population, particularly where separatist movements exist. These separatists include different religious and social groups. Environmentalists who view the environmental damage that occurs as a result of resource exploitation can also constitute a major separatist

group. Not all literature supports this view however. In research covering one hundred and nine countries between 1957 and 1990, Smith (2001) argues that revenues generated from oil extraction do not necessarily lead to the infighting that is predicted.

Secondly, a conflict between those in power and those governed leads to internal civil wars and strife, which impacts adversely on poverty. The poor are affected more than the rich, as the latter have the resources to surmount the crisis, while the former lack coping strategies. Thus the hardships of the poor are exacerbated by wars and conflict which absorb important resources that could otherwise be fruitfully used in improving socio-economic performance and hence to alleviate poverty.

Thirdly, natural resource abundance can strongly mitigate political change as stated by Auty (2001b, p.10-11) and can help underpin autocratic regimes. Consequently, an abundance of resources can pervert institutions that were democratic and transparent and suppress dissent so that power is not strongly contested. Opaqueness in public finances and corruption may well become widespread.

Fourthly, the resource curse must be considered in terms of its regional or local impact, and this aspect has tended to be neglected in the literature. The environmental damage caused to regional and local communities can be devastating and, while some funds may flow from national governments to local and tribal authorities, very few resources generally filter down to those most afflicted.

While the prevalence of a curse is noted in many countries, Stevens (2003) also identifies countries with large oil, gas and mineral revenues that have avoided such a curse, but who may be considered vulnerable. This is due to their dependency upon the receipt of large oil and mineral revenues. If such revenues fall sharply the negative impact of this will threaten the financial viability of the countries themselves. Stevens (2003) then links this

vulnerability to infant mortality, life expectancy and illiteracy via a physical quality of life index. His results support the hypothesis that some countries avoided the curse, and led him to suggest that strategies could be formulated to overcome any resource curse effects.

Why might countries suffer from a resource curse? Stevens (2003) identifies six potential transmission mechanisms:

- i long-term declines in trade;
- ii revenue volatility;
- iii Dutch disease;
- iv crowding out effects;
- v increasing the role of the state;
- vi and finally the socio-cultural and political impacts.

Logically, natural resources should ideally promote economic growth and development, since natural capital expands the production possibilities of an economy. The next section examines the relationship between natural resource abundance and the resource curse in terms of the six transmission mechanisms identified by Steven (2003). Clearly while the whole issue of what determines whether resource abundance is a curse rather than a blessing is complex, the six transmission mechanisms provide some understanding into the resource curse hypothesis.

2.4 RESOURCE CURSE: THE TRANSMISSION MECHANISM

The previous sections presented a detailed discussion relating to a paradox of plenty: large revenues accruing from natural resource exploitation seem to have brought little or no prosperity to the countries that are laden with natural resources. This is consistent with the findings of several authors including Karl (1997) and Cowen (2007). Instead natural resource prevalence has caused poverty, conflict and socio-economic decline. Human rights abuses and environmental deterioration may be important

issues, but the main economic problem is an influx of revenue. As a result real exchange rates rise and the country's industrial and agricultural export products become uncompetitive, a phenomenon commonly referred to as 'Dutch Disease'. In this regard the extent of declining terms of trade needs to be considered, together with revenue volatility and crowding out effects.

According to Frankel (2010) oil wealth need not necessarily lead to inferior or superior economic or political developments, through any of these channels. Rather, it is best to view oil abundance as a double-edged sword, with both benefits and dangers. It can be used for ill as easily as for good. That mineral wealth does not in itself confer good economic performance is a striking enough phenomena, but the priority for any country (and Kuwait in particular) should be in identifying ways to avoid the pitfalls that have afflicted other resource rich economies in the past.

2.4.1 DECLINING TERMS OF TRADE

Raul Prebisch (1950) and Hans Singer (1950) in separate studies analyzed movements in the price of primary products and manufactured goods over time using data on prices, wages and manufacturing mark-ups. The results show evidence of a negative effect on the terms of trade of primary producers, which more than offset the positive effects arising due to increasing volume of primary production output. Their findings provided an explanation for the negative net trends in the terms of trade of primary producers. Nevertheless, a slow decline in the terms of trade does not necessarily explain the sort of deterioration in economic performance which has conventionally been associated with the resource curse. Both Singer (1950) and Prebisch (1950), for example, propose that technological progress and economic growth in the rich countries increased the demand for manufactured products relative to the demand for agricultural produce, as consumers with higher incomes could only spend a limited amount of their increased purchasing power on more food. This, for them, may be a more important explanation behind declining terms of trade than the resource curse. In the Kuwaiti case, Salisu and Yagudin (2007) found that the shortage of other (non-oil) raw materials in fact resulted in an increase in trade opportunities. Although oil spurred the first industries in Kuwait, they contend that oil did not generate much in the way of new industries locally. Instead, they argue, shortages of these other raw materials have created opportunities for FDI investment in Kuwait based on vertical integration, although they acknowledge too that industrial development in the country faces formidable bureaucratic obstacles. Moreover, although oil revenues have been volatile over time (see next sub-section), this has been more problematic for oil exporters than a continual decay in the terms of trade.

2.4.2 REVENUE VOLATILITY

Several authors, including Auty (1998) and Mikesell (1997), suggest revenue volatility as an explanation for the resource curse. These theories rely upon the fact that oil, gas and mineral revenues have been extremely

volatile over relatively short periods of time. During the years 1972-1992, for example, Mikesell (1997) found that regions with high primary export experienced much greater trade volatility than industrial countries.

Several challenges arise as a result of trade volatility. It is extremely difficult to pursue a prudent fiscal policy. The result is investor uncertainty and spending policies that are erratic. In this regard Sachs and Warner (1997) found little evidence to support the idea that resource rich countries have higher savings rates over time to counter this. Gylfason et al. (1999) noted that there is an inverse relationship between the levels of domestic investment and primary product exports, suggesting that any unexpected gains are more likely to be consumed than saved/invested. It could therefore be suggested that reductions in economic activity in an economy may well be of benefit - in so far as it encourages economic reforms that would not be likely to occur in less stressful conditions (Stevens, 2003). In the case of Kuwait in particular, oil has come to dominate life and therefore dependence upon a commodity whose price is highly volatile creates understandable concern. Chapter Three shows that the most dramatic element of Kuwait's economic development has been the steady and rapid expansion of its oil industry since the 1970s. By the mid-1980s Kuwait was refining four-fifths of its oil domestically and marketing some 250,000 barrels a day. By the 1980s oil production and gave Kuwait one of the highest per capita incomes in the world.

Garaibeh (1987) suggests, however, that revenue volatility has not to date impacted negatively upon growth and development and the poverty reduction initiatives of the Kuwaiti government. This is attributable to the country's strong sovereign wealth fund which has been created from oil revenues. According to many estimates, Kuwait's fund is now worth approximately \$300 billion, a sum that can take care of the pernicious effects of revenue volatility.

2.4.3 DUTCH DISEASE

The term 'Dutch Disease' was introduced by economists who found a link between the discovery of large deposits of natural gas in Holland and a decline in the Dutch manufacturing sector. As a result of the resources boom, the guilder appreciated (due to increased gas export sales), but this adversely affected other (non-gas) exporters. The resource boom also attracted scarce capital and labour inputs to gas production and away from other sectors and, as a result, the output of other traded goods fell. In a seminal paper Corden and Neary (1982) considered the impact of an oil boom and identified two effects, the spending effect and the resource movement effect. In the case of the latter, a higher marginal product in the booming resource sector causes factors of production to move into the oil sector, pushing up the rewards for these factors and causing other sectors to contract. The spending effect is the result of the high demand in both tradable and non-tradable goods sectors generated by the increased resource rents. Contraction of the tradable (non-oil) sector is inevitable. One governmental response is to use subsidies to protect the non-resource tradable sector, but this aggravates the sector's problems by making it subsidy-dependent.

Al-Sabah (1988) reflecting upon the Dutch Disease in Kuwait, argues that, although the Dutch Disease was experienced in Netherlands in the 1960s following gas discoveries, the disease is not however exclusive to oil-resourced countries only, but rather it has also occurred in other non-oil exporting countries. For instance, Japan's manufacturing sector's technological advance boom in the 1960s adversely affected less dynamic tradable sectors, including the agriculture sector. Also the booming of Swiss bonds and money exports in the 1970s resulted in real appreciation of the Swiss franc hurting the country's traditional exports and export-competing industries.

The characteristics of the economy in question determine in which direction production and productivity in both tradable and non-tradable sectors can go.¹ Although potentially exposed to Dutch Disease, with oil revenues driving the exchange rate upwards, oil price volatility has in fact resulted in a series of local booms and busts (notwithstanding the ‘sterilising’ activities of the country’s sovereign wealth fund) as prices and supplies of the commodity have fluctuated a great deal in world markets. As a consequence, the country is more exposed to exchange rate uncertainty - that can be harmful to exports and other trade (including foreign investment) – than a continually strengthening exchange rate as characterized the Dutch experience.

2.4.4 CROWDING OUT EFFECTS

Related to Dutch Disease, ‘crowding out’ essentially refers to any reduction in private consumption or investment that occurs because of an increase in government spending. Should the increase in government spending be financed by a tax increase, there would be a tendency to reduce private consumption. Should there be an increase in government spending, a reduction in private investment may occur. There are, however, conflicting opinions on how the private sector reacts to more government spending (Auty, 2001b). Central to the dispute is how well financial markets transfer funds from those who have (and do not wish to spend) to those who do not have (and wish to spend). There is also controversy on how financial markets react to more government borrowing (Carneiro, 2006). This issue is especially sensitive in those countries that are in transition, where the level of government intervention in the economy is reduced – in terms of whether there is indeed a commensurate increase in private consumption.

¹Auty and Evia (2001) suggest it was highly significant in Bolivia, to the point of very little production taking place in non-tradable sectors. They found that the two classic symptoms of Dutch Disease held, namely an appreciation of the real exchange rate and a crowding out of the non-oil traded goods sector.

In Kuwait in particular, the government began to play a major role in all industrial and socio-economic development. The first major push for state-led industrialization occurred with the establishment of the Ash Shuaybah Industrial Zone in 1964 which comprised electricity and water distillation plants, expanded port facilities, metal works, and plants manufacturing chlorine, asphalt, cement, pilings, and prefabricated housing. The government also provided the necessary infrastructural facilities such as roads, gas, electricity, water, sewerage, port facilities, communications, and rented or leased industrial sites to private entrepreneurs at nominal rates.

According to the 2011 IMF report Kuwait's economy has grown steadily as a result of government spending. According to the report, the economy is expected to grow over the medium term as the government implements the development plan and the global recovery supports demand for oil. However, its \$133 billion economy is dominated by the state oil industry, the biggest employer outside the public service. Moreover, as Kuwait's vast stock of foreign assets and the return of these assets insulate the economy from any short-term shocks, such as a sudden oil price drop, strong state control in the economy and heavy dependence on the oil sector are unlikely to decrease in the short to medium-term.

2.4.5 ROLE OF THE STATE

Where oil, gas and minerals are the property of the state, the resource revenues in the first instance accrue to the government - who are then mandated by the citizens to ensure that the revenues are used appropriately. Some argue government intervention is particularly necessary in rich-resource laden countries. When the government uses these rents to finance increased expenditure (or to cut taxes), private sector investment is crowded out by way of higher interest rates. State spending is always a controversial issue, not only in terms of how much should be spent, but also in terms of the details of its distribution and funding. As the public sector often forms a large part of the economy, such government

spending has major implications on the micro and macro political economy. Spending invariably also impacts on the quality of the living conditions in the economy. Therefore, while the role of the state is to raise the overall growth performance of the economy, and to increase the chance of its citizens to escape from poverty, there is also concern as to the extent of state intervention in the economy. State intervention can strengthen human capabilities and reduce transaction costs, but it can also dampen innovation and entrepreneurial activity. The critical challenge is how to strike the right balance between state and private economic involvement and also between state spending that focuses primarily on growth and spending that aims at sustained poverty reduction.

Currently, Iraq, the neighbouring country of Kuwait, is determining what form Iraq's government should take. One crucial question is how to handle its vast oil wealth. Oil riches in Iraq are far from the blessing perceived before the liberation by the US. Oil growth is not only seen to be negatively correlated to democracy in Iraq, but oil revenue is viewed as impeding the development of institutions and values critical to open, market-based economies and political freedom, civil liberties, the rule of law, the protection of property rights and political participation.

The government of Kuwait is the ultimate custodian of the oil wealth of the country. Kuwait's oil wealth has run parallel with development of their political and economic structures, facilitating numerous social services provided by the state to the citizens of the country.

2.4.6 THE SOCIO-CULTURAL AND POLITICAL IMPACTS

Oil-related peace and tranquility (and also violence on the other hand) have been topics of discussion in both a domestic and international context vis-à-vis the resource curse. With regard to the key contextual conditions responsible for peace and violence in oil rich states, research underlines the basic relevance of cultural cleavages and political-institutional and socio-economic weaknesses that existed even before the discovery of oil. Oil has indirectly boosted the patriotism and, in some cases, heightened the risk of violent conflicts. Scholarship has proposed a resource curse hypothesis, arguing that an abundance of natural resources stimulates dysfunctional economic policy choices and rent-seeking, creates conflicts over the distribution of wealth, and can ultimately result in civil war (Cowen, 2007). Kuwait's attempt to circumvent the resource curse through state institutions that bring oil wealth under political control guarantees a large income to the state from oil production. Such strong government control over the production of oil, and the subsequent establishment of an oil fund invested abroad, have strengthened citizens' expectations of benefits they may receive. Yet, as much of the wealth is locked up in the oil fund and is not immediately available, political trust becomes an issue of concern. Auty and Gelb (2001) have developed a typology of states based on whether they are homogenous or factional (comprising several ethnic groups), as well as benevolent or predatory. Kuwait is a benevolent state since it tends to maximize social welfare, invest in infrastructure and human capital. In the Auty-Gelb (2001) typology a benevolent state has an accountable executive; an efficient civil service; adheres to the rule of law; allows the participation of 'civil society' in policy making; and has an open and transparent policy making process. Predatory states in contrast promote rent-seeking, lobbying and uncompetitive industrialization.

2.5 DECISION MAKING WITHIN THE CONFINES OF THE RESOURCE CURSE

Generally it is considered that a large windfall in revenues leads to poor decision-making by government (Auty, 2001b). The prevalence of natural resources in an economy raises expectations among the citizens of the economy. The citizens exert enormous pressures on a government to make decisions and, as a result, hasty and uncoordinated decisions may often be made. Spending distortions affect the way the economy functions (Auty, 2001b). Moreover, an abundance of resources tends to reduce government prudence and procedures for due diligence are ignored. Haphazard decisions become manifested in government decision making, and leads to governments spending without due thought. Furthermore, decisions on spending tend to be concentrated in fewer hands and may encourage unacceptable ethical conduct, including corruption and rent seeking on the part of government decision makers.

2.5.1 MANAGEMENT OF RESOURCES FOR THE COMMON GOOD

The difficulty of adequately managing oil revenues is compounded by several factors. Of these the most important is the lack of transparent political institutions necessary for counteracting corruption or rent-seeking. According to Carneiro (2006) the key elements of democratic governance should ideally include executives who are accountable, an efficient civil service and tax authorities, independent legal systems, active and informed civil societies, and open and transparent policy-making processes. Within such an environment business transactions are transparent and trade continues to take place without restrictions. Should such practices fail, earnings are squandered, precious assets are depleted and widespread poverty prevails. Moreover, fundamental socio-economic problems can arise out of a widespread pursuit of self-interest. Resulting socio-economic problems require resource to the notion of the 'common good'. This notion originated in the writings of Plato, Aristotle, and Cicero, where 'common

good' is considered as governance that is to everyone's advantage in equal measure. The common good in oil-rich countries consists primarily of having systems of management that benefit all people. However, on occasion, time honoured traditional Arab values of 'common good' – which may not be consistent with current Western best practice - may be more proactive in furthering innovation, development and growth.

Oil, gas and mineral projects are usually associated with the involvement of foreign companies in developing economies. Undoubtedly corruption in trade is a great cause of annoyance and misfortune to foreign companies and, if good governance is the hallmark of progress, corruption is its bane. Serious concerns surrounding governance standards in oil rich countries have been raised (Auty-Gelb, 2001). The credibility of government officials is placed in doubt as stakeholders question their ethical and moral obligations. This can be avoided if governments ensure that there are checks and balances in place. Engeli and Pieth (2000), in a paper commissioned by the World Bank, present research carried out in the transitional states, and conclude that bribery often pays when used either to secure large-scale procurement contracts, or to buy influence. The existence of powerful economic incentives, makes bribery all the more difficult to address and underlines the need for rigorous enforcement of anti-bribery legislation. Concerns with corruption, over and above the moral and ethical discourse, include:

- Impact on development and the poor: bribery and corruption inhibit development as it is the poor who largely pay for the cost of bribes, either through higher prices, or lower quality services. Bribery also creates a democratic deficit as key decisions affecting citizens are made away from the public arena for reasons outside the public interest.
- Impact on markets: bribery and corruption distorts competition.

- Integrity of public services: both nationalisation and liberalisation policies increase the opportunities and incentives for bribery and corruption, thereby undermining public confidence in the integrity of public services.
- Impact on workers and whistleblowers: whistle-blowers provide a mechanism for detecting bribery and thus potentially provide a powerful tool for deterring corruption. Whistleblowers need to be properly protected both by national legislation, and at a corporate level, through the establishment of appropriate disclosure channels.

While corruption is widespread in many countries, it is not clear whether corruption is more likely in resource rich countries. Legend has it that an absence of corruption in some oil rich countries would result in their sovereignty ceasing to exist. Rent-seeking behaviour also imposes significant losses on many economies and may impact negatively on economic reforms and impede innovation. Why should rent seeking be greater in countries with large oil, gas or mineral revenues? It appears the greater the funds available in the public purse, the less noticeable the leakages to stakeholders. Auty (1998) argues that rent seeking is more prevalent in oil rich countries, because wealth is concentrated in a politically dominant public sector (or possibly in a small number of companies).

However, corruption and rent seeking can benefit economies - should the benefits be used for productive investment within the economy. In this instance the outcome will be very different than if they are used for the furthering of one's own selfish interests.

2.5.2 THE CHARACTERISTIC OF INVESTMENT DECISIONS IN OIL RICH STATES

Effective investment decisions in oil-rich countries may be hampered by mismanagement at all levels. While part of this is attributable to poor governance structures, investment decisions can, at times, strongly support the growth and development of an unproductive economic base. Sarraf and Jiwaji, (2001) have outlined that poor investment decisions are evident in many countries. Poor investment decisions include greater investment in non-tradable sectors, like investment in the military, indulging in prestige projects ranging from constructing palatial residences and airport infrastructure which are quite inappropriate for the economy. As large oil revenues allow governments the luxury to borrow on the strength of these revenues, this can also militate against sound decision-making.

2.5.3 INDUSTRIALISATION AND INNOVATION POLICY

A government policy for industrialisation and innovation should be directed towards fulfilling certain goals and objectives.

These may include the following:

- What path should industrial development take?
- How can sustained growth in productivity be maintained?
- How can gainful employment, particularly for citizens, be expanded and optimal utilisation of human resources achieved?
- How can social and economic disparities be reduced?
- How can poverty be eradicated and self-reliance attained?
- How can international competitiveness be attained?

Policies of oil-rich states such as Kuwait must ideally reflect the realisation of these goals. A policy of industrialisation and innovation ought to answer

these concerns, and should ideally propose initiatives towards employing revenues for national reconstruction and development. Corden and Neary (1982) raised the concern that in the case of numerous resource oil-rich countries, they have generally failed to promote competitive manufacturing sectors. However many economists, including Wagenast (2007), Ross (2006) and Auty (2001), have since considered competitive manufacturing a primary source of technological progress and innovation, and this certainly has major implications for economic development and growth.

When an economy adopts an industrial policy based on greater state intervention for the import substituting sector, this can help oil-rich countries break out of the cycle of underdevelopment - and develop markets that are powerful and efficient while serving the public interest.

2.6 CURSE EFFECTS – POLITICAL AND SOCIAL ISSUES

A commonly held view, and a prevalent thread throughout the reviewed literature, appears to suggest that countries which exhibit extreme dependence on natural resources, such as oil, are always vulnerable to various forms of conflict and civil war (Ross, 2006). However, the impact of natural resources on social capital and institutional structures also needs to be addressed. Ross (2006) suggests that resource rich countries accumulate social capital at a far slower rate than poor countries. An explanation that can be advanced for this is that limited natural resources promote early industrialisation which triggers earlier urbanisation. People who migrate from villages into an urban environment become more enterprising, and better functioning markets develop. Savings are then repatriated into the poorer indigenous regions, thereby increasing the social capital of the region.

An abundance of natural resources not only stimulates dysfunctional economic policy choices, but can also pervert political and social behaviour, leading to conflict over the distribution (and non-distribution) of wealth.

Countries usually seek to avoid this by using state machinery to bring resources within seemingly rational political control, with Auty (2001b) suggesting strong and transparent governmental involvement is needed in the production of oil. Royalty or taxation policy should guarantee income to the state from oil production. The establishment of an oil fund investment should ideally be a primary requirement to convert a curse into a blessing. Transparent and judicious involvement of the state in the oil sector strengthens one's expectations of benefits one may receive. However, at times, dissatisfaction contributes to reduced political trust in leaders and results in weaker institutional capacities.

An engaged and enlightened private sector, helping promote economic and social diversification, is critical. Hence, building trust through a deep and on-going relationship with the private sector, communities and local governments becomes paramount. Governments and corporations need to co-operate in reducing economic and social costs in order to deliver economic and social benefits. To this end a strong private sector must communicate its integrity in a transparent way. Corporations may seek innovative ways to increase the social and economic benefits that accrue to communities, thereby helping to raise the standards and capacity of public involvement in governance (an absence of which is often a causal mechanism behind conflicts).

Generally it is assumed that an abundance of oil revenue causes broad-based socio-economic and political problems (Ross, 2006). Other authors including Engeli and Pieth (2000) and Wegenast (2007) blame abundance directly for motivating rebellion and allowing the finance of large-scale armed violence. Using a host of alternative measures of natural capital wealth (aggregated as renewable and non-renewable), Soysa (2002) finds that an abundance of renewable resources - not their scarcity - leads to violence and to lower economic, human and institutional development. According to Wagenast (2007), international sanctions for poor governance

on all fronts are thus important in ensuring acceptable governmental performance levels in line with the expectations of the different parties. These expectations have to be managed and in this regard the private sector must contribute seriously. A meaningful partnership needs to be encouraged ensuring a fair deal for all stakeholders. Finally, poor economic performance by resource rich countries may be attributed to a lack of democracy. Many authors, including Auty (2001) and Ross (2005), have identified a negative correlation between oligarchies and democratic rule, arguing a democratic state certainly does not ensure good governance for the poor. The Nobel Laureate Amartya Sen holds another point of view. His work on poverty eradication and welfare economics suggest that the way most governments measure poverty by basing it on income may be a flawed perception of well-being.

In their seminal work: *Harnessing windfall revenues: optimal policies for resource-rich developing economies*, Van der Ploeg and Venables (2011) suggest that a windfall of natural resources presents government with an opportunity set of how to manage resources relative to public debt, investment and the distribution of funds for consumption. Generally, the permanent income hypothesis suggests a sustained increase in consumption will be supported by interest on accumulated foreign assets, once resources are depleted. This strategy is not an optimal solution for capital-scarce developing economies. Following this trend of thought, Van der Ploeg and Venables (2011:1) conclude that incremental consumption should be skewed towards present generations and that savings should be directed to accumulation of domestic private and public capital rather than foreign assets. Optimal policy depends on the impact of distortionary taxation and ability of consumers to borrow against future revenues. Van der Ploeg and Venables (2011:2) provide a rigorous analysis of how should a temporary windfall of foreign exchange (from natural resource revenues or foreign aid) be managed by the recipient government? In addressing this issue: they recommend three broad choices:

Firstly, the amount of the windfall that should be saved and what should be the optimal time profile of consumption from the windfall;

The second concerns the choice of whether to invest in the domestic economy or in foreign assets (by increasing foreign exchange reserves or creating a sovereign wealth fund, SWF); and

Third concerns the balance between private or public domestic investment.

The solutions to these issues are dynamic and country specific. To analyse these choices Van der Ploeg and Venables (2011:3) derive policy rules for a welfare-maximising government that experiences a temporary windfall of foreign exchange. They build a family of models in increasingly complex economic environments and derive optimal time profiles for consumption, foreign debt / assets, public investment and tax and transfer policies.

2.7 KUWAIT WITHIN THIS CONTEXT

Much of the discussion in the preceding sections, while relating to several countries outside the Gulf Cooperation Council (GCC), nevertheless highlights issues that the six GCC countries need to consider. While the six countries of the GCC are similar in terms of culture and language they are very dissimilar in terms of governance. The forms of government range from autocracy to democracy. The dramatic growth in state oil revenues has tended to keep the GCC countries insulated from the ravages of the economic crises that have afflicted other resource rich countries. Therefore this section alludes to the resource curse within the GCC, and within Kuwait in particular to determine whether Kuwait is in any way afflicted by the resource curse phenomenon.

In a recent article related to natural resource dependence in the United Arab Emirates (UAE), Karnick and Fernandes (2009) empirically illustrate that the UAE is indeed dependent on the oil sector (as much as any other Gulf country). Since the countries of the GCC are linked to each other and to the rest of the world by geopolitical, social and economic relationships, the findings of Karnick and Fernandes (2009) may theoretically apply to other countries within the GCC. However, each Gulf country has its own individual levels of independence and autonomy. A combination of these levels defines the identity, independence, and external influences upon the country. The Gulf countries thus exhibit great differences as well as similarities. Their identities differ, and they are rivals for autonomy, independence and influence. This rivalry underpins the tendency to compete for oil revenues as the GCC exporters are fully aware of their importance in the world markets. For the oil exporting GCC countries, dependence on the world oil market and oil revenues is very high. Oil revenues support the societies and their differences. However, they realise they are not exclusive and dominant sources of current and future oil or energy supplies.

From a social relations viewpoint, GCC vary in terms of acceptable international norms of democracy and human rights. The challenge that faces Kuwait in particular is how to balance its survival, the prevalence of peace, and the demands placed on it from within and outside its borders. Kuwait needs to broaden its relations beyond oil and energy. Relationships should include other areas of development, namely, political, social and economic. As Kuwait has limited natural capabilities, its dependence on oil is exceedingly high compared to the rest of the GCC. However, its geographical location presents several opportunities (as it is situated between Asia and Europe, and is at the uppermost end of the Arabian Gulf).

Whilst Kuwait is endowed with a rich natural resource in the form of oil, the resource curse as highlighted represents an enormous impediment to real

growth and development. It is nevertheless important to understand that an abundance of a natural resource is not the primary problem; but rather, might be the absence of good governance and democratic institutions and structures. In addressing these concerns one needs to consider the nature of political, social and economic institutions and how they have evolved and continue to do so. Different resource rich countries present different profiles in terms of wealth and other economic metrics. In order to understand the resource curse in the Kuwaiti context requires the study of how economic factors have shaped the governance structures of Kuwait and how, in turn, these governance structures influence growth, development and the prosperity of the nation. Income and wealth generated from natural resources ought to be used to support further growth and development, but this has not always been the case in Kuwait and the other GCC countries. This is in part attributable to income being misappropriated by unscrupulous agents. As a consequence the next chapter specifically considers the governance of Kuwait in relation to economic, political and social issues. However at this stage a few macro-economic observations may be made to clarify the situation.

Preliminary discussions with key stakeholders in Kuwait substantiate the widely held belief that Kuwaitis are indeed blessed to have oil within their country. These stakeholders believe that the benefits accruing include: poverty alleviation; infrastructure improvements; enhanced economic growth; job creation, and increasing government initiatives associated with the transfer of technology, innovation and the incubation of related industries. However, there is also a general perception in parts of the academic literature particularly those produced by the Arab Planning Institute (Ali (2009) suggest that Kuwait has a slower than expected growth; experiences major barriers to economic diversification; has poor social welfare programmes; high levels of poverty and relatively pronounced inequality and unemployment. While it is not an intention to dwell upon the

views of the different stakeholders at this point, it would suffice to say that their views shape the thinking of governments and private enterprises.

If a resource boom is to be identified as beneficial or detrimental, what matters most is the economic and social influence, therefore how oil wealth is transforming Kuwait needs to be further examined in the light of the changes that taking place in other resource rich countries.

2.8 RESOURCE CURSE AND GOVERNANCE

Heuty and Carlitz (2008) conducting the Open Budget Survey of 2008 reflecting a comprehensive evaluation of budget transparency in 85 countries—finds that resource-dependent countries tend to be less transparent than countries that are not resource dependent. A closer look at the data reveals that the poor performance of resource-dependent countries is largely driven by the lack of budget transparency and accountability in the 22 countries that are considered significant oil and gas producers. Table 2.1 presents a comparative description of various resource rich countries. While the degenerative state of economies in quadrant three (Table 2.1) can in no way be compared to Kuwait, the country still aspires to reach the governance standards evident in developed economies such as Australia and Norway (Quadrant 4).

TABLE 2.1

COMPARATIVE DESCRIPTION OF VARIOUS RESOURCE RICH COUNTRIES

	POOR GOVERNANCE	GOOD GOVERNANCE
MINERAL RICH	(1) Zimbabwe (Poor leadership) Lebanon (War ravaged)	(2) Spain (Clean governance) South Africa (Transparency) Malaysia (Social values) Sweden (Clean governance) Botswana (Clean governance)
OIL RICH	(3) Nigeria (Ethnic conflict) Libya (Autocratic leadership) Sudan (Ethnic conflict) Iran (Leadership) Iraq (War ravaged) Cambodia (Civil conflict)	(4) Norway Australia China Kuwait

Source: Adapted from Raghuram, R. G. and Subramanian, A. (2005) *What Undermines Aid's Impact on Growth? Working Paper, No. 05/126, International Monetary Fund, Washington, DC.*

The Kuwait government is committed to ensuring good and clean governance. This is considered in the subsequent chapter. However, many issues need to be addressed to ensure that Kuwait progresses permanently into quadrant four.

Each of the countries would be discussed in terms of the four identifiable quadrants. Much of the material employed is derived from two sources: firstly, the Organization for Economic Cooperation and Development - an organization that acts as a meeting ground for 30 developed countries which believe strongly in the free market system and secondly, Secondly, Global Witness (www.globalwitness.org), who run pioneering campaigns against natural resource-related conflict and government corruption (and associated environmental and human rights abuses). Global Witness has exposed the injustices that result from the fight to access and control natural resource wealth, and have sought to bring the perpetrators of this corruption

and conflict to book. Their work, like academic authors ranging from De Soysa (2002) and Heuty and Carlitz (2008) to Frankel (2010) has revealed how, rather than benefiting a country's citizens, abundant timber, diamonds, minerals, oil and other natural resources can incentivize corruption, reduce accountability, undermine governments, and even lead to war.

2.8.1 Countries manifesting rich mineral wealth and poor governance

Two countries, namely Lebanon and Zimbabwe are mineral rich economies that suffer from poor governance. Lebanon has a long history of political volatility – which had an adverse impact on investment. Caught in the middle of several different conflicts, Lebanon has paid a high price for the region's instability in the form of lost investment opportunities. There are deposits of high-grade iron ore and lignite; building-stone quarries; high-quality sand, suitable for glass manufacture; and lime. However, Dr. Nizar Atrissi, a former Vice President of the Investment Development Authority of Lebanon speaking at an OECD forum and addressing the issue of "Mobilizing Investment for Development in the MENA Region", suggested that while Lebanon has made important strides in structural reform, the promotion of FDI was still lagging behind. He further noted that the current amounts of foreign investment did not meet the growth requirements of the Lebanese economy. Moreover, Lebanon was over-reliant upon short term investments due to the political scenario, failing to attract longer term more stable and beneficial international capital flows. The OECD has identified the challenges facing Lebanon as related to the:

Lengthy bureaucratic procedures impede foreign investment, growth and development in Lebanon. Lebanon is also unable to maintain monetary stability (thus unable to reassure investors of the strength of the Lebanese economy).

Zimbabwe is also identified as a mineral rich-poor governed country. The country has granite (used for building and construction), coal, copper, asbestos and platinum deposits. However, Zimbabwe has been plunged into near anarchy by its President who has held office for more than three decades. An overt and unchallenged manifestation of greed, power and irresponsible government is widely acknowledged to bedevil Zimbabwe, despite it having been a wealthy colonial state. As many Zimbabweans currently lack a stake in Zimbabwe's political institutions, these political institutions have continued to impede the development of genuine governance (Cowen, 2007).

Rich mineral deposits within weak and poor states typically then has a negative effect on their political and economic development.

2.8.2 Countries manifesting Oil-rich wealth and poor governance

Nigeria, Sudan and Libya are oil-rich countries that are situated in Africa whose oil wealth has raised the stakes of political conflict. In such countries an intensive (and sometimes violent) struggle for resource opportunities, has involved inter- and intra- communal/ethnic conflicts, theft and illicit trading in refined and crude oil. De Soysa (2002) examined the interfaces between the Nigerian state, multi-national oil companies, the international community and youth militias within the economy. Although he found that the resource has not caused open violent conflict, it has provided a means for sustaining challenges to state power. The oil economy has helped engender an extensive proliferation of arms the pervasiveness of corruption at the national level – and crime, violence and communal/ethnic conflicts at the local level. Sudan also falls into the same category as Nigeria. Some scholars including Ross (2001) suggest that the Libya's oil wealth helps explain its failure to democratize. He examines how "oil impedes democracy". Libya's resource wealth enabled the government to strengthen its internal security forces and hence repress popular movements and frustrate "modernization effects" (in the sense that growth - based on the

export of oil and minerals - failed to bring about the social and cultural changes that tend to produce democratic government). The question that can be asked is whether oil wealth has a consistently antidemocratic effect on states, once other factors are accounted for. Moreover, can this claim be generalized? Whilst oil wealth does not necessarily create autocratic regimes, oil wealth has played a crucial role in sustaining them and in warding off pressures for political change in countries like Nigeria, Libya and Sudan.

Kuwait, a Gulf State, is Iraq's immediate neighbor. Both Iran and Iraq are two Middle Eastern countries that have for long been in the news. Iraq is still recovering from the US invasion that overthrew President Saddam Hussein's regime. However, prior to this the Iran-Iraq war, the Iraqi invasion of Kuwait and punishing economic sanctions and embargos had contributed to a marked deterioration in the Iraqi economy, its infrastructure, and society. Presently, the country is considered to be ungovernable (Paya, 2010). Iraq's neighbor, Iran, has had limited dealings with Iraq since the Iran-Iraq war - described as the Third World's first Great War. (Moshaver, 2003). According to Workman (1991) there remains a rooted cultural enmity between Iran and Iraq. This isolation from its nearest neighbor has incided negatively upon a country that underwent an Islamic revolution in 1979, followed by the large-scale "Islamization" of society. Over the past three decades, there has been a lively debate among social scientists about the nature – and consequences - of such developments, and particularly over their implications for other Middle Eastern and Islamic societies (Paya, 2010). The International Monetary Fund (2000) reported that Iran's business and investment environment is governed by unclear and unpredictable laws. Subsequently in 2005 the International Monetary Fund Article IV Consultation report on Iran, suggests that investor protection is weak, as measured by an index including different aspects of corporate governance.

Finally, Cambodia has emerged from genocide and decades of civil war. Cambodia's discovery of oil raised hopes of faster development for the country – but also fears that the "resource curse" might strike again. Global Witness have expressed concern in this regard, reporting that oil exploration licences had been granted largely in secret, while the mining sites it investigated were all owned by the country's political and military elite. Furthermore, the public has not been consulted about the drafting of new laws governing extraction of natural resources. Perhaps the lack of democratic values and accountability is not surprising in a country where the Prime Minister has been in power for almost three decades – despite grassroots organisations pushing for Cambodia's oil to be managed in ways that allow citizens to see what the government does with the resulting revenues – and to hold it and oil companies accountable for their actions.

2.8.3 Countries manifesting rich mineral wealth and good governance

Five countries have been identified for discussion in this category, two European countries, one Asian country and two African countries. Since ancient days, mining and the iron industry have been of great importance in the economic life of Sweden, which was among the most active mining countries in Europe. Iron and steel comprised Sweden's most important industry, and one-third of Sweden's exports are supplied by steel (the country accounts for a large percentage of Western Europe's iron output, and is also home to the region's largest gold mine) (Weil, Gotshal, and Manges, 2002). Regulation and accountability regarding the sector is provided by The Mining Inspectorate of Sweden (Bergsstaten), the agency responsible for the administration of mineral resources in Sweden, housed in the Ministry of Industry, Employment and Communications. The director of the Inspectorate is the Chief Mining Inspector, who is appointed by the Government. The Swedish system of government entails that all power proceeds from the people, and the Swedish governance framework is characterized by several features distinguishing it from that of many other

countries - mainly in terms of its long tradition of self-regulation, its structure of corporate governance, and its concentrated ownership dispersion. Regarding the legal and regulatory framework, Weil, Gotshal, and Manges (2002) note that Swedish legislations (particularly the Companies Act) and listing rules demand detailed corporate governance requirements. More recently, the Swedish Code of Corporate Governance was enacted in July 2005 on a “comply or explain” basis as a supplement to the Companies Act and other legislation. Its purpose was to improve overall corporate governance through self-regulation and to address issues of poor corporate governance and decreasing investor confidence. In introducing these strict and accountable standards the Swedish government thus ensures that the private sector exploits the country’s natural resources in a sustainable and transparent manner.

The economy of Spain is the twelfth-largest economy in the world, the fifth-largest in Europe, and the country is regarded as the world's 15th most developed country (Newman 2003). Spain is richly endowed with a vast number of minerals ranging from aluminum to copper, gold, and zinc. According to Newman (2003) Spain has some of the most mineralized territory in Western Europe and - in terms of value of mine output of metallic and nonmetallic minerals and quarry products - Spain was one of the leading European Union (EU) producer countries. Legislation to abolish state and private monopolies was passed in 2002, and the Government continued with its program of liberalizing Spanish industries in 2003. Electricity markets, the natural gas sector, and the petroleum sector continued to be key targets in the liberalization efforts. The natural gas liberalization process has been faster than that required by the EU. (U.S. Energy Information Administration, 2004). Moreover, the U.S. Energy Information Administration (2004) adds that Spain is expected to continue with its privatization and liberalization efforts and Spain’s international profile as a well governed economy has grown appreciably in recent years. This is also consistent with the findings of Newman (2003).

Malaysia is endowed with fertile land and rain forest, with large deposits of tin found in several Malay states. The country is the world's largest producer of tin, rubber, and palm oil. These three commodities along with other raw materials firmly dictated Malaysian economic growth rates until well into the 20th century. As Malaysia moved towards independence, the government began implementing economic five-year plans, beginning with the First Malayan Five Year Plan in 1955. These five-year plans have built in governance standards promoting growth and development. Vandergeest and Peluso (2006) have addressed the issue of sustainability of Malaysia's natural resources in their seminal work: "Forest governance in Malaysia - an NGO perspective". They identify a holistic approach to governance of natural resources and suggest participation (by both men and women) is a key cornerstone of good governance. Adherence to a strict rule of law, with enforcement of that law done in a transparent manner that abides by the various rules and regulations, ensures that all Malays feel that they have a stake in the ownership and exploitation of the country's forest resources. Accountability is considered a key requirement of good governance in Malaysia, with the Malaysian governmental institutions, the private sector and civil society organizations accountable to both the public and to their institutional stakeholders. Accountability, however, cannot be enforced without transparency and the rule of law.

South Africa with rich agricultural farmlands, rich natural resources and highly developed irrigation systems is a net exporter of food crops. It is also the world's largest producer and exporter of platinum, a significant producer of gold, manganese, chrome, vanadium, and titanium, and also exports a significant amount of coal. In 2000, platinum overtook gold as the country's largest foreign exchange earner. To counter excessive resource dependency the country has supported the (value-added) processing of these minerals to produce ferroalloys, stainless steels, and similar products and sought to diversify – becoming a world leader in several specialized sectors (including motor vehicles and parts, railway rolling stock, and

synthetic fuels) (Van Schalkwyk, 2008). Internationally South Africa is also known for its corporate social responsibility (CSR) programmes (Posnikoff, 1997). Recently, however, there have been important developments involving the broadening of the interpretation of CSR and an increasing commitment to the alleviation of poverty and other social ills. Though market-based incentives have contributed to this, the key driver has been the State's legislated transformation programme premised on State sovereignty over mineral resources. (Van Schalkwyk, 2008) Hence, while the interrelationship between companies, state and the institutional context has, in the past, fostered a degree of irresponsibility and minimal collaboration, this has been reversed. In addition, South Africa's post-apartheid governments have made remarkable progress in consolidating the nation's peaceful transition to democracy.

Finally, Botswana which is located in Africa has, according to the IMF, avoided the resource curse. This is curious as, according to Boschini, Pettersson and Roine (2005), the presence of diamonds has arguably been disastrous for the development of countries like Sierra Leone, Liberia and the Democratic Republic of Congo. However, this does not seem be the case in Botswana, which has defied the odds and has a thriving economy. The presence of natural resources, specifically diamonds, played a key role in this accomplishment, according to Lewin (2011). He contends that in Botswana's case, the key to successfully harnessing natural resource revenues lay in good governance and good policies, particularly prudent fiscal and monetary policies, which led to the accumulation of foreign reserves and prevented the volatility that typifies many resource-based economies. Resource revenues supported investments in human and physical capital and improvements in infrastructure which have also raised Botswana's productivity. Like Malaysia, Botswana's non-government organizations play a critical role in the governance of its natural resources.

Lewin (2011) presents some fascinating success stories related to Botswana. In the first few years of independence from the British (1966), there were only 12 kilometres of paved roads and by 2007 Botswana had 7,000 kilometers of paved road and its per capita income had risen sharply making Botswana an upper-middle-income country comparable to Chile or Argentina. Its success is also evident in other measures of human development. At independence, life expectancy at birth was 37 years. By 1990 it was 60, 10 years above the African average. Under-five mortality had fallen to about 45 per 1,000 in 1990, compared with 180 for Africa as a whole. According to the UNDP report by 2011 Botswana's infant mortality rate was 12.59 per 1,000 and life expectancy is 60.93 years. Development assistance has shrunk to less than 3 percent of the government budget. Major strides have also been made in infrastructure and education. Leith (2005) agrees with Lewin (2011), that the discovery and subsequent exploitation of minerals, principally diamonds—was clearly an element of Botswana's success.

2.8.4 Countries manifesting oil-rich wealth and good governance

The economy of Norway is best characterized as a developed mixed economy, but with heavy state-ownership in strategic areas of the economy, while the public sector is among the largest in the world (as a percentage of the overall gross domestic product). The country has a very high standard of living compared with many countries, and a strongly integrated welfare system which is among the best in Europe. This success has seen the ideological divide between socialist and non-socialist views on public ownership decrease over time.

Norway was prompt to assert sovereign rights over natural resources in the North Sea, and much of Norway's more recent economic growth has been fueled by an abundance of natural resources, including petroleum exploration and production, hydroelectric power, and fisheries. Agriculture and traditional heavy manufacturing have suffered relative decline – as the

'Dutch disease' syndrome would suggest - compared to services and oil-related industries, However in the last two decades national and local government incentives have been introduced to encourage formation of new mainland industries that are competitive internationally. The Norwegian government has sought to reduce its ownership over companies that require access to private capital markets, and there is an increasing emphasis on government facilitating entrepreneurship rather than controlling (or restricting) capital formation. A transparent approach to the utilization of Norwegian natural resources is at the forefront of good governance and sustainability. The Norwegian experience suggests that there are important linkages between the exploitation of natural resources, environmental issues, and decisions of local, regional and national relevance and - with proper governance - a stronger economy will emerge.

Australia has abundant and diverse natural resources that attract high levels of foreign investment and include extensive reserves of coal, iron ore, copper, gold, natural gas, uranium, and renewable energy sources (Garnaut, 2010). The country is also a significant exporter of natural resources, energy, and food. Key tenets of Australia's trade policy include support for open trade. This policy and the continued demand for commodities, especially from its main trading partner - China - helped the Australian economy to secure positive growth levels. Sustainable natural resource use and management exert pressure on governance arrangements. Jennings and Moore (2000) in their work: *The rhetoric behind regionalization in Australian natural resource management: Myth, reality and moving forward* suggests that governance principles have been developed for the diverse contexts that exist in Australia and, while developed in an Australian multi-level context, these principles can have a wider applicability and significance. They call for governance institutions that are legitimate, transparent, accountable, inclusive and fair.

China, with over 1.3 billion people, is the world's second largest economy after the United States. Like India it is one of the world's fast-growing major economies, with average growth rates of 10% for the past 30 years Nonini (2008). China is the largest exporter and second largest importer of goods in the world, and became the world's top manufacturer in 2011, surpassing the United States. Nonini (2008) also points out that China is a richly endowed country with an abundance of natural resources and oil in particular. China is also the largest producer and consumer of coal in the world. Both critics and admirers of China's economic reform would agree that China is witnessing one of the most extraordinary episodes of social and economic transformation. At the same time Coxhead (2006) contends that rapid resource depletion and reduced industrial growth could expose China to a period of slow economic growth, as predicted by the "natural resource curse" hypothesis. Coxhead (2006:1) goes on to add "that the idea of a resource curse has never resonated loudly in South East Asia a resource-abundant region whose largest economies have recorded exceptionally high growth rates of per capita income since the 1970s".

The political incentives that natural resources generate are the key to understanding whether or not they are a curse. Countries with institutions that promote accountability and state competence will tend to benefit from resource booms and countries - without such institutions however may suffer from a resource curse. While evidence was provided in this chapter to show where natural resource abundance is associated with various negative development outcomes, the chapter also shows that abundance does not necessarily 'curse' a country – providing appropriate governance structures (budget transparency and public accountability – though not limited just to these two components) are present. Explanations for the resource curse (or how it has been circumvented) therefore need to consider the role of social forces and the domestic political and economic environments that are shaping governance structures in countries like Kuwait.

2.8.5 Kuwait and governance

The question therefore arises as to where would one locate Kuwait in Table 2.1. However, it would suffice at this juncture to say that Kuwait lies somewhere between quadrants 3 and 4 for while it certainly does not betray the characteristics of poor governance that are seen in oil-rich economies such as Nigeria and Libya, neither has its institutional structures evolved in a manner that reflects those found in countries such as Norway and Australia. (The following chapter examines the institutional structures of Kuwait in more detail to support this contention)

While some governments of resource rich countries are encouraged to step up their efforts to tackle bribery and corruption in order to boost job creation, and improve living standards, the ongoing political upheavals in the Arab world have also highlighted the need for governments to work more closely with civil society, business and labour unions in order to reinforce citizens' participation and trust in government. This is the task that confronts Kuwait, and to this end the following chapter also charts the evolution of political, economic and social forces in Kuwait.

The literature findings of this section suggest that resource curse is a function of many factors or variables and governance is an important variable. Should natural resources in the form of oil as in the case of Kuwait be the hallmark of progress and advancement, poor governance would be its bane resulting in resource curse effects. Consistent with this discussion Van der Ploeg (2011:1) provides cross-country evidence that rejects the traditional interpretation of the natural resource curse. He goes on to suggest:

Growth has a negative relationship with volatility of unanticipated output growth independent of initial income, investment, human capital, trade openness, natural resource dependence and population growth;

The direct positive effect of resources on growth is overcome by the indirect negative effect through volatility;

With well-developed financial sectors, the resource curse is less pronounced. Fourth, landlocked countries with ethnic tensions have higher volatility and lower growth;

Restrictions on the current account raise volatility and depress growth whereas capital account restrictions lower volatility and boost growth.

Van der Ploeg's (2011) goes on to conclude that volatility is a typical feature of the resource curse and Kuwait needs to be considered within this context and this is addressed in the following Chapter.

2.9 CONCLUSION

This chapter has considered historic and current literature and theories concerning resource curse addressing the following three main issues. Firstly, is an abundance of natural resource necessarily an impediment to development? Secondly, what are the major causes of the resource curse? Thirdly, how can the resource curse be converted to wholesome blessings? Having reviewed the available related literature it has shown that some of the research findings associated with the resource curse relate to anecdotal evidence and therefore the evidence is not unequivocal that resource abundance translates into a cursed economy. In addition, whilst the social consequences encountered are varied, the extensive review identified that some resource-rich countries have performed exceptionally well in terms of economic metrics, and thereby overcome the resource curse. Natural resource wealth fosters different political ideologies which in turn promote development performances that are not consistent across developing economies. In considering the curse – one must ascertain who it really hurts. A key to successful management of income from natural resources is

equitable distribution between rich and poor (within states and across regions), with the intention of reducing poverty, ameliorating economic growth and reducing corruption.

CHAPTER THREE

THE POLITICAL AND ECONOMIC DEVELOPMENT FRAMEWORK

*"My father rode a camel, I drive a Mercedes, my son flies an airplane.
My grandson, ah! my grandson, he will ride a camel,
more for pleasure than out of necessity." (Anonymous)*

3.1 INTRODUCTION

The previous discussions have shown that the governance and association between economic development and oil wealth is contentious. A pressing and perplexing problem throughout the world today is the inability of many countries to convert valuable natural resources into enhanced standards of living for their citizens. Many scholars have begun to look at this problem as a "resource curse," a phenomenon denoting an inverse relationship between endowment with natural resources and economic growth (as examined in Chapter Two). However, "leadership curse" may aptly describe the predicament of many countries. A defining characteristic of many resource-rich countries is the discrepancy between the interest of the stewards of the resources and the true owners of the resources. At times those in political office (the stewards) appear to work extremely hard to ensure that the rest of the population (the owners) receive little benefit from the resources with which their countries have been abundantly endowed, and so the **governance of natural resources** merits further research.

However, an explanation of the development of any country's natural resources is incomplete if one does not consider the impact of the historical, political and social milieu that pervades an economy. Studying the historical development of the economy provides a context for understanding existing resource challenges, and a source of hypotheses to explain the trajectory of its evolution. Economic history has become increasingly important as a framework for studying questions not just in economic history, but also in other fields of economics, particularly macroeconomics, microeconomics and development economics. Empirical research from the Arab Planning

Institute in Kuwait supports this claim in the Kuwaiti context (Ali Abdel Gadir, 2009). For any nation that has only come to the world's attention since the discovery of oil, one could assume that in-depth and accurate recording of a flourishing civilization prior to any oil discovery might have been lost. However, much of this rich cultural history can dictate the future path of economic development. Such is the situation of Kuwait. Social and cultural aspects deriving from Kuwait's history, together with political developments, exert a strong influence over the economic activities of contemporary Kuwait. Over the years, intervention in the economy by past rulers resulted in policies ensuring the benevolent distribution of income and wealth. Consequently, this chapter commences with a brief historical survey of Kuwait and its impact on the governance of its natural resources. It addresses the emergent economic issues within these confines, and discusses the role of the government and private sectors in sustaining social stability, economic growth and development of the country. This provides a basis for understanding the dimensions of innovation in Kuwait.

3.2 SOCIAL CHANGES IN KUWAIT FROM AN HISTORICAL PERSPECTIVE

An understanding about the effects of political institutions on economic growth and development in Kuwait is necessary to show how the patriarchal conduct of past rulers manifested itself in a "sharing and caring" relationship with the citizens, and how this has continued to underpin the relationship between government and Kuwaiti society. A loyalty to leadership in early Islamic society is a manifestation of a leader's loyalty to his citizens according to Mottahedeh (1980) and Afsaruddin (2002) suggests that this loyalty is important in countries like Kuwait.

Although Kuwait has existed for 250 years as an independent state, it can be considered a newcomer in world history. While archaeologists uncovered a wealth of historical treasure and information dating back to 4500 BC., Rush (1987) together with other historians, like Al-Hijji (1997),

Crystal (1995), Jamal (1998) and Bondarevsky (2003) date the origins of Kuwait as a nation back to the beginning of the eighteenth century when the tribal confederation of BanuUtib migrated to the Gulf from the Najd region in Central Arabia in order to escape drought and famine. After a stay in Basra, the Utibs wandered south to settle on the coast of the Gulf, at the present day location of Kuwait City. Here, they established a self-governing political unit combining a concern with inequality with self-determination for the newly settled citizen. The historians already cited, contend that the modern political history of Kuwait began around this time and, for convention, the year 1752 was denoted as the year these settlers elected an Al Sabah Sheik as their leader. Since then rulers have traditionally come from the Al Sabah family tree. The leader was chosen by a family council, in consultation with the leading families who, together with the tribal elite, have exercised some restriction over the Sheik's political authority.

The task of leading a tribe during this time was basically to represent one's community in negotiations with Ottoman Turkey or neighbouring tribes. According to Rush (1987), a major - albeit unsuccessful - challenge to this newly established system of rule occurred when the Al Khalifa family fell out with the Al Sabah family. As a consequence the Al Khalifa family left Kuwait for Qatar in the 1760s moving onto Bahrain, where they continue to rule. Despite this, the two families maintained close economic links and, as early as 1770, Kuwait handled most of the trade in the Gulf (including transportation to India), and was the pivot of the overland trade route to the Mediterranean.

It is widely reported in literature (Rush, 1987) that, during the nineteenth century, members of the Al Sabah ruling family controlled the growing trade in pearling in Kuwait. The Al Sabah family also developed a trading relationship with Britain, firstly through the British East India Company in 1775. Moreover, being members of a small, vulnerable settlement, the Al Sabah family sought to maintain cordial relationships with not only the

British, but also the Wahhabis of Arabia. It was during Sheik Abdellah Al Sabah II's rule (1866 – 1892), that Kuwait developed close ties with the Ottomans. In 1871 he took the Ottoman title of provincial governor (*qaimaqam*). Kuwait's domestic politics remained unaffected by these closer ties, however, because the Ottoman government was simply interested in using the Gulf as a highway from Mesopotamia to India at the time (Abu-Hakima, 1983).

Kuwait moved more fully into the British sphere of influence at the end of the nineteenth century when Sheik Mohammed Al Sabah's son, Mubarak the Great (1896-1915) requested British military support. The Ottomans were supporting allies of Mubarak's brothers (Kuwait's previous rulers) whom Mubarak had killed on taking power in 1896. Britain at this time was concerned with growing European involvement in the Gulf, most notably as the Ottomans had granted a concession to Germany for the construction of a Berlin-to-Baghdad railroad (with a further proposed line to Kuwait). Britain therefore signed a treaty in 1899 promising British military support in return for control of Kuwait's foreign policy. This treaty remained operative until Kuwait's independence in 1961. Commerce continued with Kuwait remaining a key Gulf trading post, importing textiles, rice, coffee, sugar, wheat, tobacco, fruits, spices, teak and mangrove. Ships docked in Kuwait as they passed through the Gulf, sailing east to India and west to Africa, while there were caravan links to the interior of the Arabian Peninsula.

Trade had a number of effects upon Kuwaiti society. First, by bringing locals into contact with people from all over the world, it gave Kuwaitis a more cosmopolitan outlook. Secondly, as Kuwaiti men became involved in trade, home life was strictly dominated by “resourceful and self reliant women” (Al-Hijji, 1997). This trading prowess also introduced Kuwaitis to contracting, finance and investment, experiences and skills that have helped the development of modern Kuwait.

BOX 3.1 THE RULERS OF THE AL-SABAH DYNASTY

- Sheikh Sabah I bin Jaber (1752 - 1762)
- Sheikh Abdullah I Al-Sabah (1762 - 3 May 1814)
- Sheikh Jaber I Al-Sabah (1814 - 1859)
- Sheikh Sabah II Al-Sabah (1859 - Nov 1866)
- Sheikh Abdullah II Al-Sabah (Nov 1866 - May 1892)
- Sheikh Muhammad Al-Sabah (May 1892 - 17 May 1896), assassinated by successor
- Sheikh Mubarak Al-Sabah, "the Great" (18 May 1896 - 28 Nov 1915)
- Sheikh Jaber II Al-Sabah (28 Nov 1915 - 5 Feb 1917)
- Sheikh Salim Al-Mubarak Al-Sabah (5 Feb 1917 - 22 Feb 1921)
- Sheikh Ahmad Al-Jaber Al-Sabah (22 Feb 1921 - 29 Jan 1950)
- Sheikh Abdullah III Al-Salim Al-Sabah (29 Jan 1950 - 24 Nov 1965 became Amir on 19 Jun 1961)
- Amir Sabah III Al-Salim Al-Sabah (24 Nov 1965 - 31 Dec 1977)
- Amir Jaber III Al-Ahmad Al-Jaber Al-Sabah (31 Dec 1977 - 15 Jan 2006)
- Amir Saad I Al-Abdullah Al-Salim Al-Sabah (15 Jan 2006 - 24 Jan 2006), (due to illness)
- Amir Sabah IV Al-Ahmad Al-Jaber Al-Sabah (29 Jan 2006 - now)

Source: *Rush (1987)*

After Sheik Mubarak's death, Kuwait was ruled by Sheik Jaber Al Sabah (1915-17) and Sheik Salim Al Sabah (1917-21), two of his sons. Thereafter, only descendants of these two sons would rule Kuwait. After Sheik Salim's death (1921), Kuwait was governed for almost thirty years by Sheik Ahmad Al Jaber Al Sabah. However, the Great Depression, a decline of the pearling industry, and a trade dispute with Saudi Arabia that culminated in a Saudi embargo against Kuwait, triggered a serious recession. In 1938, an

unsuccessful rebellion took place, the same year that the Anglo-American Kuwait Oil Company found oil in the Burgan oil field. Although World War II prevented immediate exploitation of the find, Kuwait made its first international shipment of oil in 1946.

Simultaneously, oil concessions were signed with Britain which promised Kuwaitis better times. To prevent the resulting income being sequestered by the ruling family, however, the leading merchants petitioned Sheikh Ahmad Al Jaber Al Sabah for greater political and economic freedom.

Sheik Ahmad Al Jaber was succeeded by his cousin Sheik Abdellah, who is Sheik Salim Al Sabah's son (1950 - 65), took personal charge of the distribution of the oil revenues, the consequence of which was the emergence of a large bureaucratic state as Kuwait became a wealthy oil Sheikdom. Sheik Abdellah also oversaw Kuwait's transformation into a formally independent state (June 19, 1961) as he signed new letters of friendship with the British to replace the treaty of 1899.

Domestically, Sheik Abdellah Salim made two key political decisions. The first was to distribute oil revenues more widely among the population, notably through the provision of education and health care. The second was to permit the formation of a newly elected National Assembly, the first elections for which were held in 1963.

Upon Sheik Abdellah Salim's death (1965), his brother Sabah - as Salim Al Sabah - took power and continued and consolidated the policies set in motion by his predecessor. When Sheik Sabah Salim died in December 1977, Sheik Jaber Al Ahmad Al Jaber Al Sabah (1977-2006) became the new Amir.

Several external events dominated Sheik Jaber Al Ahmad's rule. Firstly, the Iran-Iraq War, which triggered an increase in the level of political violence in Kuwait. Secondly, the 1983 bombing of the United States Embassy and the

1985 public assassination attempt on the Amir. Tensions associated with the war also exacerbated divisions in Kuwaiti society, and led the Amir to restrict public participation in political life. In 1986 he closed the National Assembly and introduced further measures curtailing civil and political rights. Thirdly, the Iraqi invasion of Kuwait (August 1990) which placed Kuwait under direct foreign rule with sovereignty being restored in February 1991.

Since 1991 and the restoration of sovereignty, Kuwait's oil and (oil related industries) have driven Kuwait's economy (as is clear from the following section of this chapter). Understandably, oil was seen as a national asset and contemporary rulers followed the lead of their predecessors in seeing the need for this natural resource wealth to be shared by the nation. Thus as Kuwait prospered nationally, so has its people benefited individually. If one accepts that the sea had shaped the past economic history of Kuwait and oil is shaping its present, the governance of this natural resource will be shaping the future economy.

Governance is associated with power, relationships and accountability. It thus has a major influence on the effectiveness of management, and the maintenance of community and environment (sustainability). Hence, the rulers of the Al-Sabah dynasty, in conjunction with the national constitution, have an important role to play in reconciling these objectives.

3.3 CONSTITUTIONAL IMPERATIVES DRIVING CHANGE

New constitutions are needed to cope with modern economic challenges. Modern institutions and constitutional political economy have contributed significantly to an understanding of how legal and political institutions interact with economic processes; more specifically, how different constitutional arrangements affect and are affected by the development and regulation of markets. No serious analysis of the process of economic development is possible without acknowledging the nature and functioning

of constitutions. Besides theoretical insights, numerous cross-country studies (refer Raghuram and Subramanian, 2005) have provided empirical evidence on the (economic) effects of various characteristics of national constitutions such as human rights, judicial independence, competition policy, direct democracy, supreme audit and central bank independence. Sachs and Warner's (1995a; 1995b; and 1997) are widely-cited studies in this regard. Sarraf and Jiwanji (2001) also reflect upon the situation in Botswana whilst Ali (2009) considered the Arab region. Constitutional political economy not only assesses the economic consequences of these constitutional arrangements, but strives to explain its interactions with other constitutional players, the legislative and the executive branch. This section focuses on the role of the constitution (its effectiveness) in economic and social regulation, taxation and redistribution. The institutional framework of the Kuwaiti economy bears the mark of the constitution.

Following independence in 1961, and under an Iraqi threat of occupation, Amir Abdellah Al Salim announced that he would establish a constitution for Kuwait. Elections were held for a Constituent Assembly, which then drafted a constitution (promulgated as Law Number 1 on November 11, 1962). Although articles of the constitution have since been suspended twice (in 1976 and 1986), the document nonetheless remains the basic statement of intent underpinning the Kuwaiti political and economic systems.

The constitution defines Kuwait as "an independent sovereign Arab State," with its people "part of the Arab Nation." Islam is "the religion of the state," and the Sharia (Islamic law) is "a main source of legislation." The constitution further establishes Kuwait as "a hereditary Amirate, the succession to which shall be in the descendants of the late Mubarak Al Sabah" (Baklini, 1982). Furthermore, the constitution grants citizens a number of social rights, which form the basis for Kuwait's extensive welfare system. The state is constitutionally obliged to care for the young and to aid the old, the ill and the disabled. It is obliged to provide public education and

to attend to public health. The constitution further provides for state involvement in the national economy to the degree that these obligations are fulfilled (The Library of Congress Country Studies; CIA World Fact book).

Cooperation between public and private actors is an essential characteristic of a constitution that pledges support for economic growth, development, productivity, improvement of the standards of living and prosperity for all citizens, and unites all Kuwaitis towards a common goal. Moreover, according to Rush (1987) unity and justice, long the objectives of former leaders, have become a sacred duty of all Kuwaitis, so as to build a strong and developed Kuwait on the basis of freedom, unity, peace, stability and security. These have become the core social values of not only Kuwait, but other GCC countries too. Vine and Casey (1992) are convinced that Kuwait's constitution recognizes, protects and secures the rights and freedoms of citizens based on human dignity and equality, and that this guarantees a firm constitutional basis for Kuwait's economic growth and development.

3.4 KUWAITI ECONOMIC GROWTH AND DEVELOPMENT

In order to place the debate about innovation in context, it is also necessary to understand and interpret the nature of economic growth and development in Kuwait. For the Kuwaiti rulers, growth is based upon two basic inseparable principles – economic growth and social development. Economic indicators make it clear that the Kuwaiti economy witnessed a significant resurgence in 2007-2008 because of the important and well-documented developments in the world's energy markets. These markets recorded an increase in oil prices which translated into very high rates of economic growth. Gross domestic product doubled in a short period of time. As a result of the country's economic reliance on oil as its major driving force, the public sector in Kuwait dominates the economic sphere. Attempts to develop non-oil industries have been negated by the limited

domestic market, the absence of other natural resources and the resource curse (as outlined in Chapter Two), although the government is currently seeking to develop the manufacturing and financial services sector. Petrochemical industries remain the leading industrial sector and support the production of fertilisers and other chemicals (salt, chlorine, caustic soda and chlorine gas). Other light industry includes food processing, textiles, furniture, paper, mineral and metallic products, cement, sulphur processing, detergents and construction materials.

The government also has plans for major infrastructure projects including development of the pier (at Mina Ahmadi); a new city in the north (Silk City) including a causeway from central Kuwait; a new power station (Al Zoor); a new waste water treatment plant, (Sulabiya); redevelopment of the centre of Kuwait City and other housing projects. As the management has yet to be decided for most of these major projects – the timescale for actual construction is therefore uncertain at present, although they will all be funded from oil reserves.

Healthcare and the environment are also issues that Kuwait is currently concerned about. The health care system has from its inception improved markedly decade on decade. Historical data compiled by the Chief Federal Research Division - Library of Congress indicates that Kuwait first introduced a modern health care system in the first years of the twentieth century when Sheikh Mubarak Al Sabah the Great requested doctors from the Arabian Mission of the Dutch Reformed Church in the United States to establish a clinic. By 1911 the group had established a hospital for men and eight years later a small hospital for women. According to Mortimer (1993) a thirty-four bed Olcott Memorial Hospital opened in 1934. It is not surprising then that the increase in oil revenues resulted in the government expansion of the health care system. The Amiri Hospital opened in 1949, The Kuwait Oil Company (KOC) also opened some small health facilities, and in the 1950s the government introduced a comprehensive health care

system (including veterinary services) for the entire population. Expenditures on health ranked third in the national budget, public works being first and education second. By 1990 Kuwait had an extensive health and welfare programme, including: free medical services from highly trained practitioners in modern facilities; free education from primary through to university level; subsidized food, housing, utilities, and transportation (Mortimer, 1993). The system is supported entirely by oil revenues.

To further understand economic growth and development fully, and appreciate how oil has come to dominate Kuwaiti life, one needs to examine the Kuwait economy over six distinct periods, namely: the pre-oil period; 1938 -1962, the discovery of oil; 1963 – 1972, Kuwait becomes a major oil producer; 1973 – 1982, the oil bonanza; 1983 – 1991, oil prices fall and 1992 – today.

3.4.1 PEARLING DOMINATES IN THE PRE-OIL PERIOD

In the pre-oil period, pearls were Kuwait's main natural resource. As a result, shipbuilding, using imported materials, also became an important local industry. Large trading dhows frequently set out for India to return with merchandise which was then loaded onto desert caravans bound for various parts of the Mediterranean. Kuwait served as the gateway to the region because of its strategic geographical location. Caravans from southern and eastern Arabia also passed through Kuwait on their way to Syria. By 1929 Kuwait's pearling industry, which once boasted 800 pearling ships, had almost disappeared following the introduction of Japanese cultured pearls and the worldwide fall in demand for luxury goods occasioned by the Great Depression.

Education during this period was limited to the teaching and reciting of the Holy Quran or the three basic Rs: reading, writing and arithmetic and was consistent with the economic and social conditions at the time. The expansion of trade led to the establishment of the first schools in Kuwait, the

Al-Mubarkiya School in 1891 and the Al-Ahmadiya School in 1921. Both schools, however, concentrated merely on arithmetic and religious instruction. A more structured educational system emerged in 1936, when a Council of Education was set up to formulate a more meaningful education policy. During the period, education came to be seen as a tool that would endow men and women with the necessary skills to reduce dependence upon Britain.

3.4.2 OIL BEGINS TO FLOW (1938-62)

The first exploration well was drilled at Bahrah (Al-Hijji, Yacoub, 1997). In February 1938, oil was discovered at Burgan and eight more wells were drilled in the vicinity during the next four years, although it was not until the end of the World War II that the first crude oil shipment was exported. Sheikh Jaber became Chief of Public Security in the Al-Ahmadi oilfields in 1949 and after completing his education in local private schools and from palace tutors, he dealt with the oil companies in various capacities. In 1959 he became head of the Department of Finance (which became the Ministry of Finance after Kuwaiti independence in 1962). Much of both the development of the oilfield and the democratization of the economy can be attributed to his untiring efforts to make Kuwait a highly ranked producer of oil. It was during his tenure that the country adopted a constitution in 1962 and established a National Assembly holding legislative authority (the Amir and his Council of Ministers holding executive powers). When the President of Iraq, Abdulkarim Qasim, claimed that Kuwait was really Iraqi territory, Abdullah Al-Salem requested Britain send a force to defend Kuwait. The League of Arab States then sent a joint Arab security force to replace the British force, rejected Qasim's claims, and recognized Kuwait's independence. Kuwait joined the Arab League on 20 July 1961, and then the United Nations on 14th May 1963 (Al Mughni, 2001).

The Credit Bank was established by Law 40/1960 to facilitate loans for Kuwaiti citizens using oil revenues. State employees could use their

salaries and bonuses as collateral. The Credit Bank was later replaced with the Savings and Loan Bank by Law 30/1965 with a mission to encourage people to save and invest.

The foundation of applied education and training was laid using oil revenues, and with a view to supporting the development of oil exploration, production and export in Kuwait. In the 1950s, the State began to establish training centres and organize programmes to prepare the manpower needed for the oil industry. The Ministry of Education also established a number of specialised tertiary institutions while the other ministries created their own in-house training centres and institutes as well, with the Ministry of Health recruiting Egyptian doctors to train health care professionals. In light of such piecemeal development, the State found it imperative to establish a central body (referred to as the Allied Health Workers' Forum) to supervise and coordinate the activities of these numerous institutes. In 1956, oil revenues enabled the government to introduce a major education plan that divided formal education into four categories: Kindergarten (with a duration of two academic years); Primary (with a duration of four academic years); Intermediate (with a duration of four academic years); and Secondary (with a duration of four academic years). Post-secondary education was also restructured using oil income during this period.

3.4.3 KUWAIT: A MAJOR OIL PRODUCER (1963-72)

By the decade of the sixties, Kuwait ranked as a major oil producer with an output of 2.5 million barrels per day, accounting for about 23 percent of area production and 7 percent of world crude oil production by 1967 as reflected in Table 3.1. In that same year, the petroleum industry provided more than 95 percent of all government revenues and foreign exchange earnings,

revenues from oil companies operating in Kuwait and in the Kuwait-Saudi Arabia Neutral Zone amounting to about \$650 million each year ².

The Kuwait Chemical Fertilizer Company began production of ammonium sulphate and continued construction of related facilities to produce urea. These plants had a daily production capacity of 500 tons of ammonium sulphate and 550 tons of urea. Construction of the Kuwait National Petroleum Company (KNPC) oil refinery near Ahmadi proceeded as scheduled and additional petrochemical and other industrial development projects were completed. Under the terms of a joint venture agreement, a Turkish company built a chemical fertilizer plant at Mersin (Turkey) with Kuwait capital, with liquid ammonia being supplied by Kuwait under a long-term contract. Sheikh Jaber was also appointed as Deputy Prime Minister, while remaining Minister of Finance and Industry, thus strengthening his reputation as a vigorous, dynamic figure that shaped the economy.

Table 3.1 shows world crude production between 1962 and 1972 for selected countries, including Kuwait.

TABLE 3.1
WORLD CRUDE OIL PRODUCTION (1962-1972)
(Million Barrels per Day)

Year	Persian Gulf Nations	Selected OPEC Producers										World					
		Iran	Iraq	Kuwait ³	Nigeria	Saudi Arabia	United Arab Emirates	Venezuela	Total OPEC ⁴	Canada	China	Mexico	Norway	Former U.S.S.R.	United States	Total Non-OPEC	World
1962	6.19	1.33	1.01	1.96	.07	1.64	.01	3.20	^R 10.50	.67	.12	.31	.00	3.67	7.33	13.85	24.35
1963	6.82	1.49	1.16	2.10	.08	1.79	.05	3.25	11.51	.71	.13	.31	.00	4.07	7.54	14.62	26.13
1964	7.61	1.71	1.26	2.30	.12	1.90	.19	3.39	12.98	.75	.18	.32	.00	4.60	7.61	15.20	28.18
1965	8.37	1.91	1.32	2.36	.27	2.21	.28	3.47	^R 14.34	.81	.23	.32	.00	4.79	7.80	^R 15.99	30.33
1966	9.32	2.13	1.39	2.48	.42	2.60	.36	3.37	^R 15.75	.88	.29	.33	.00	5.23	8.30	^R 17.20	32.96
1967	9.91	2.60	1.23	2.50	.32	2.81	.38	3.54	^R 16.79	.96	.28	.36	.00	5.68	8.81	^R 18.60	35.39
1968	10.91	2.84	1.50	2.61	.14	3.04	.50	3.60	^R 18.71	1.19	.30	.39	.00	6.08	9.10	^R 19.93	38.63
1969	11.95	3.38	1.52	2.77	.54	3.22	.63	3.59	^R 20.85	1.13	.48	.46	.00	6.48	9.24	^R 20.84	41.70
1970	13.39	3.83	1.55	2.99	1.08	3.80	.78	3.71	^R 23.42	1.26	.60	.49	.00	6.99	9.64	^R 22.47	45.89

²The Saudi-Kuwaiti Neutral Zone, also known as the Divided Zone, is an area of 5,770 km² between the borders of Saudi Arabia and Kuwait. In 1966 Kuwait and Saudi Arabia agreed to divide the Neutral Zone, the partitioning agreement making each country responsible for administration in its portion was signed in December 1969.

1971	15.77	4.54	1.69	3.20	1.53	4.77	1.06	3.55	*25.31	1.35	.78	.49	.01	7.48	9.46	*23.21	48.52
1972	17.54	5.02	1.47	3.28	1.82	6.02	1.20	3.22	*27.11	1.53	.90	.51	.03	7.89	9.44	*24.03	51.14

SOURCE: Arab Petroleum Research Center, *Arab Oil and Gas Bulletin* (2009)

The average quantity of oil produced during this period was 2.587 million of barrels per day, Kuwait recording its highest output of 3.28 million barrels per day in 1972. While Kuwait only produced 5-6% of total global oil output in this period, it was nevertheless the fifth largest producer, after the US, the USSR, Saudi Arabia and Iran.

Following independence in 1961, the leaders of Kuwait developed a strategy for a comprehensive welfare system. The education policy of the country was outlined in an overall plan detailed in the April 1966 Amiri Decree. Following this, the first higher education institution in Kuwait - Kuwait University (KU) – was established with two faculties: the Faculty of Science, Arts and Education and the Girl's College. Studies started in 1966-67 with 418 students and a faculty of 31. In the first batch, 359 were Kuwaitis, 70 per cent of the total number of Kuwaiti students who had passed the secondary school certificate examinations. Females represented 42 per cent of the total number of students enrolled that year.

The Central Bank of Kuwait was established as late as 1969, with a mission to lay the foundations for, and maintain a flexible and stable monetary financial system in the State of Kuwait. Their mandate included; issuing the Kuwaiti Dinar on behalf of the State of Kuwait; directing credit policy as necessary to assist social and economic progress; regulating the banking system in the country, and acting as a banker and financial advisor to the government. Representatives from both the public and private sectors make up the Board of Directors. The Central Bank of Kuwait guides all monetary policies in the country and strictly monitors the exchange rate. The Central Bank also moderates the conduct of Kuwait banking institutions. The Kuwait Fund for Arab Economic Development (KFAED),

commonly known as the Kuwait Fund, is the State of Kuwait's aid agency charged with providing financial and technical assistance to developing countries. Founded in December, 1961 by the then Minister of Finance, Sheikh Jaber Al-Ahmad Al-Jaber Al-Sabah, the Kuwait Fund was tasked with ensuring that Kuwait's newly discovered oil wealth benefit neighbours and "friends" alike.

According to Robert McNamara, President of the World Bank (1968-1981) the Kuwait Fund was the first aid agency in the world to be established by a developing country. Originally established with a capital of KWD 50 million, this increased to KWD 200 million in 1966. "When first established in 1961, the Kuwait Fund was without precedent. Here was Kuwait, a tiny country, until recently among the poorest places in earth, establishing a development fund in the year of its political independence. While welcoming its new-found prosperity it was declaring a willingness to share its future wealth with its Arab neighbors." (World Bank Archives, 1981).

It is managed as a semi-independent arm of the Kuwaiti government and maintains sovereignty over its operations. In July 1974, the scope of the Fund's activity was extended to the rest of the developing world (from its original mandate of solely helping countries in the Arab World) and its capital increased from KWD 200 million to KWD 1000 million (Al-Hijji, 1997).

3.4.4 THE OIL BONANZA (1973-82)

Al-Hijji (1997) indicates that in 1974 the Kuwait National Assembly ratified an agreement giving 60 per cent control of the operations of the KOC to the State of Kuwait (the residual 40 per cent being divided equally between BP and the Gulf Oil Corporation). The following March, the Kuwaiti government took control of the remaining 40 per cent of shares, thus assuming full control of KOC. The period also saw Kuwait move heavily into downstream

activities including local refining, transport, overseas refining, and petroleum distribution.

The resulting massive inflow of funds, despite declining national production levels as detailed in Table 3.2, were spent on further developing the country's infrastructure and raising living standards. Roads, ports, factories, power generating stations and desalination plants were constructed and the population increased sharply as thousands of foreign technical advisors and workers arrived to support Kuwaiti development. Kuwaitis now found themselves in the minority, working as importers, contractors, landlords and government officials.

TABLE 3.2
WORLD CRUDE OIL PRODUCTION (1973–1982)

World Crude Oil Production, 1973 - 1982 (Million Barrels per Day)																			
Year	Persian Gulf Nations	Selected OPEC Producers							Total OPEC	Selected Non-OPEC Producers								World	
		Iran	Iraq	Kuwait	Nigeria	Saudi Arabia	United Arab Emirates	Venezuela		Canada	China	Mexico	Norway	Former U.S.S.R.	Russia	United Kingdom	United States		Total Non-OPEC
1973	20.67	5.86	2.02	3.02	2.05	7.60	1.53	3.37	^K 29.66	1.80	1.09	.47	.03	8.32	--	(s)	9.21	26.02	55.68
1974	21.28	6.02	1.97	2.55	2.26	8.48	1.68	2.98	^K 29.32	1.55	1.32	.57	.04	8.91	--	(s)	8.77	26.39	55.72
1975	18.93	5.35	2.26	2.08	1.78	7.08	1.66	2.35	^K 25.79	1.43	1.49	.71	.19	9.52	--	.01	8.37	27.04	52.83
1976	21.51	5.88	2.42	2.15	2.07	8.58	1.94	2.29	^K 29.12	1.31	1.67	.83	.28	10.06	--	.25	8.13	28.23	57.34
1977	21.73	5.66	2.35	1.97	2.09	9.25	2.00	2.24	^K 29.58	1.32	1.87	.98	.28	10.60	--	.77	8.24	30.12	59.71
1978	20.61	5.24	2.56	2.13	1.90	8.30	1.83	2.17	^K 28.16	1.32	2.08	1.21	.36	11.11	--	1.08	8.71	32.00	60.16
1979	21.07	3.17	3.48	2.50	2.30	9.53	1.83	2.36	^K 29.35	1.50	2.12	1.46	.40	11.38	--	1.57	8.55	33.32	62.67
1980	17.96	1.66	2.51	1.66	2.06	9.90	1.71	2.17	^K 25.38	1.44	2.11	1.94	.49	11.71	--	1.62	8.60	34.17	59.56
1981	15.25	1.38	1.00	1.13	1.43	9.82	1.47	2.10	^K 21.22	1.29	2.01	2.31	.47	11.85	--	1.81	8.57	34.83	56.05
1982	12.16	2.21	1.01	.82	1.30	6.48	1.25	1.90	^K 17.77	1.27	2.05	2.75	.49	11.91	--	2.07	8.65	35.68	53.45

SOURCE: Arab Petroleum Research Center, *Arab Oil and Gas Bulletin* (2009)

While elections for the first National Assembly were held in 1963, and representatives of the country's leading merchant families won the majority of the seats, the limited success of the democratization experiment caused the Amir to subsequently dissolve the Assembly. It did not reopen until 1981 and then only for a short while until further suspension (reopening again in 1986).

In the educational arena, the Public Authority for Applied Education and Training was established on 28th December 1982 with the objective of

supplying manpower to meet the technical manpower shortages created by the rapid industrial and economic development of the country.

3.4.5 OIL PRICES SLUMP (1983–1991)

In 1983, KPC completed its acquisition of the Gulf Oil Refining Company (United States), an acquisition that meant Kuwait could now market its own oil related products. However, the production and processing of crude oil continued to be the mainstay of the economy during this period, providing further revenues to develop its growing downstream industries (Table 3.4), despite the generally weak level of world oil demand and the oversupply situation that persisted through most of the 1980s. Kuwaiti oil production rebounded slightly from a comparatively bad year in 1982, but crude oil output remained at less than one-third of its 1972 peak of 3.28 million barrels per day (and only 53% of its previous 10 year period average). The average quantity produced during this period was 1.21 million barrels per day as shown in Table 3.3. This comparatively low level of oil production was considered a more severe problem by the Kuwaitis than the general decline in oil revenues. The drop in oil output saw a sharp decline in the associated production of gas, which was used throughout Kuwait for LPG and ammonia-urea fertilizer production, as well as for its water desalinization plants and power generating stations. These facilities were forced to operate well below capacity, reducing export revenues further.

In addition to these primary industries, the Government petrochemical company diversified operations by producing salt, chlorine and acids, while metal pipe for the oil industry was also produced domestically from imported iron and steel. Innovation outside the oil industry was limited, although small local operators were producing cement, lime, sand-lime bricks, and lesser quantities of clay, stone, concrete, and other crude construction materials.

TABLE 3.3
WORLD CRUDE OIL PRODUCTION (1983 – 1991)

World Crude Oil Production, 1983 - 1991 (Million Barrels per Day)																			
Year	Persian Gulf Nations	Selected OPEC Producers								Selected Non-OPEC Producers								World	
		Iran	Iraq	Kuwait	Nigeria	Saudi Arabia	United Arab Emirates	Venezuela	Total OPEC	Canada	China	Mexico	Norway	Former U.S.S.R.	Russia	United Kingdom	United States		Total Non-OPEC
1983	11.08	2.44	1.01	1.06	1.24	5.09	1.15	1.80	16.57	1.36	2.12	2.69	.61	11.97	--	2.29	8.69	36.69	53.26
1984	10.78	2.17	1.21	1.16	1.39	4.66	1.15	1.80	16.50	1.44	2.30	2.78	.71	11.86	--	2.48	8.88	38.00	54.50
1985	9.63	2.25	1.43	1.02	1.50	3.39	1.19	1.68	15.37	1.47	2.51	2.75	.77	11.59	--	2.53	8.97	38.60	53.97
1986	11.70	2.04	1.69	1.42	1.47	4.87	1.33	1.79	17.46	1.47	2.62	2.44	.84	11.90	--	2.54	8.68	38.74	56.20
1987	12.10	2.30	2.08	1.59	1.34	4.27	1.54	1.75	17.71	1.54	2.69	2.55	.98	12.05	--	2.41	8.35	38.92	56.63
1988	13.46	2.24	2.69	1.49	1.45	5.09	1.57	1.90	19.74	1.62	2.73	2.51	1.11	12.05	--	2.23	8.14	38.96	58.69
1989	14.84	2.81	2.90	1.78	1.72	5.06	1.86	1.91	21.40	1.56	2.76	2.52	1.48	11.72	--	1.80	7.61	38.40	59.79
1990	15.28	3.09	2.04	1.18	1.81	6.41	2.12	2.14	22.49	1.55	2.77	2.55	1.63	10.98	--	1.82	7.36	38.00	60.49
1991	14.74	3.31	.31	.19	1.89	8.12	2.39	2.38	22.48	1.55	2.84	2.68	1.87	9.99	--	1.80	7.42	37.71	60.19

SOURCE: Arab Petroleum Research Center, Arab Oil and Gas Bulletin (2009)

TABLE 3.4
COMPARISON OF GOVERNMENT OIL REVENUE IN RELATION TO NON OIL REVENUES

Year	Oil revenue	Non-oil revenue
1984/85	90.9%	9.1%
1985/86	89.3%	10.7%
1986/87	85.7%	14.3%
1987/88	88.4%	11.6%
1988/89	85.9%	14.1%
1989/90	90.8%	9.2%
1990/91	90.2%	9.8%
1991/92	76.6%	23.4%
1992/93	88.2%	11.8%
1993/94	83.8%	16.2%
1994/95	89.8%	10.2%

Source: Al-Hijji, Y.Y. (1997) Old Kuwait: Memories in Pictures. Almansouria, Kuwait: Center for Research and Studies on Kuwait.

3.4.6 FROM INVASION AND THE DECADE OF RECONSTRUCTION (1992-TODAY)

Restoration of the oil industry, which was heavily damaged during the Iraqi invasion, was a top priority given that oil revenues largely underpinned government spending programmes. Today the oil industry, producing an average of 2.098 million barrels per day (Table 3.5), has fully recovered from the attack of the Iraqi invasion, and the State-owned KPC is estimated to be the seventh largest oil company in the world. KPC has extensive overseas operations, including refineries and large downstream distribution networks in Western Europe, and exports almost 78 per cent of its products to Non-Arab States.

Findings provided by the Kuwait Institute of Banking (2002) suggest that Kuwaiti commercial banks currently enjoy a competitive position vis-à-vis the banks of the other GCC member states in terms of assets, number of branches, number of ATM machines, number of employees and number of subsidiaries. While these banks also enjoy a competitive advantage in terms of net profit attained (they rank second among the GCC banks) they performed less well in terms of return on assets (where they rank fourth). Moreover, the Kuwait Institute of Banking (2002) suggests that Kuwaiti banks' expenditure on staff training courses is low (they rank last) compared to other GCC banks. Therefore, Kuwaiti banks need to allocate further financial resources for staff development purposes. While Kuwaiti banks enjoy a relative competitive advantage in relation to expenditure on research and development (ranking first among GCC banks) they do not enjoy such an advantage in the area of expenditure on information technology and communications (where they rank fourth).

TABLE 3.5
WORLD CRUDE OIL PRODUCTION 1992–2008

World Crude Oil Production, 1960-2008 (Million Barrels per Day)																			
Year	Selected OPEC Producers									Selected Non-OPEC Producers									World
	Persian Gulf Nations	Iran	Iraq	Kuwait	Nigeria	Saudi Arabia	United Arab Emirates	Venezuela	Total OPEC	Canada	China	Mexico	Norway	Former U.S.S.R.	Russia	United Kingdom	United States	Total Non-OPEC	
1992	15.97	3.43	.43	1.06	1.94	8.33	2.27	2.37	*23.74	1.61	2.85	2.67	2.13	--	7.63	1.83	7.17	36.37	60.12
1993	16.71	3.54	.51	1.85	1.96	8.20	2.16	2.45	24.46	1.68	2.89	2.67	2.28	--	6.73	1.92	6.85	35.71	60.17
1994	16.96	3.62	.55	2.03	1.93	8.12	2.19	2.59	24.90	1.75	2.94	2.69	2.57	--	6.14	2.37	6.66	36.20	61.10
1995	17.21	3.64	.56	2.06	1.99	8.23	2.23	2.75	25.54	1.81	2.99	2.62	2.77	--	6.00	2.49	6.56	36.85	62.38
1996	17.37	3.69	.58	2.06	2.00	8.22	2.28	2.94	26.02	1.84	3.13	2.86	3.09	--	5.85	2.57	6.46	37.73	63.75
1997	18.10	3.66	1.16	2.01	2.13	8.36	2.32	3.28	27.29	1.92	3.20	3.02	3.14	--	5.92	2.52	6.45	38.45	65.74
1998	19.34	3.63	2.15	2.09	2.15	8.39	2.35	3.17	28.37	1.98	3.20	3.07	3.01	--	5.85	2.62	6.25	38.60	66.97
1999	18.67	3.56	2.51	1.90	2.13	7.83	2.17	2.83	27.22	1.91	3.20	2.91	3.02	--	6.08	2.68	5.88	38.70	65.92
2000	19.89	3.70	2.57	2.08	2.17	8.40	2.37	3.16	28.98	1.98	3.25	3.01	3.22	--	6.48	2.28	5.82	39.52	68.49
2001	19.10	3.72	2.39	2.00	2.26	8.03	2.21	3.01	28.16	2.03	3.30	3.13	3.23	--	6.92	2.28	5.80	39.94	68.10
2002	17.79	3.44	2.02	1.89	2.12	7.63	2.08	2.60	26.39	2.17	3.39	3.18	3.13	--	7.41	2.29	5.75	40.77	67.16
2003	19.06	3.74	1.31	2.14	2.28	8.78	2.35	2.34	27.98	2.31	3.41	3.37	3.04	--	8.13	2.09	5.68	41.45	69.43
2004	20.79	4.00	2.01	2.38	2.33	9.10	2.48	2.56	30.41	2.40	3.49	3.38	2.95	--	8.80	1.85	5.42	42.08	72.49
2005	21.50	4.14	1.88	2.53	2.63	9.55	2.54	2.56	31.87	2.37	3.61	3.33	2.70	--	9.04	1.65	5.18	41.87	73.74
2006	21.23	4.03	2.00	2.54	2.44	9.15	2.64	2.51	31.59	2.53	3.67	3.26	2.49	--	9.25	1.49	5.10	41.87	73.46
2007	20.67	3.91	2.09	2.46	2.35	8.72	2.60	2.43	31.21	2.62	3.73	3.08	2.27	--	9.44	1.50	5.06	41.80	73.01
2008	21.87	4.03	2.36	2.59	2.17	9.26	2.68	2.39	32.47	2.59	3.79	2.79	2.18	--	9.36	1.39	4.96	41.31	73.78

SOURCE: Arab Petroleum Research Center, Arab Oil and Gas Bulletin (2009)

Since its liberation from Iraqi occupation in February 1991, Kuwait has focused and continues to build on its pre-invasion oil-based economy. Education is a primary tool in achieving this. Institutions offering a western education curriculum have grown over the years, while the national university of the country (Kuwait University) has expanded and grown to be recognised internationally as one of the most prominent universities in the Gulf.

3.5 KUWAIT SEEKING GROWTH AND DEVELOPMENT IN THE NEW MILLENNIUM

Economic policies are required for national economic growth, yet economic growth cannot be separated from the cultural, ecological, social, political and spiritual environment in which it takes place. Economic growth and development cannot be seen as separate initiatives. Economic

development drives social development and is, in turn, linked to peace, freedom, social stability and security. The United Nations Department of Economic and Social Affairs (2008) suggest that the promotion of social development requires an orientation of values, objectives and priorities towards the well-being of all and the strengthening and promotion of institutions and policies.

As oil revenues continue to flow, part of this blessing should be directed to education as this can be viewed as an engine of growth and innovation. Empirical evidence gathered by Gadir Ali (2009) suggests that strong correlations exist between education and social and economic indicators. Gadir Ali (2009) thus contends that further investment in human capital is crucial. Education, particularly of females, will result in the empowerment of females in societies where they have (in the past) been accorded fewer educational opportunities than males. To strengthen education, an economy has to devote more resources to increased provision of better education at all levels, and the blessing of oil gives Kuwait a unique advantage in this area.

Creating a culture of savings ought to be considered a further integral element of growth. Research findings suggest that saving and investment are conducive to long-run economic growth and social development. The United Nations' Commission on Sustainable Development (2008) suggests that as countries become economically competitive and financially affluent, there is a danger in placing rapacious consumerism above savings and thus compromising the welfare of future generations. To this end the Kuwait Investment Authority is also a key player in promoting the savings objectives of Kuwait. There is also a need to encourage increased domestic and foreign investment, and to create and foster an entrepreneurial environment in which investment projects are motivated by profit incentives rather than by political reasons. One development in this

field has been the extension of the operations of Kuwait Foreign Investment Bureau which encourages foreign investment in Kuwait.

Openness to the rest of the world is important for growth. Closed economies can no longer survive the onslaught of globalization. Imports and exports constitute a major proportion of an economy's balance of payments and regulations that are ineffective may render economic policies useless.

There is also an acute need to find ways to avoid an excessive reliance on the public sector in areas of production and provision of services. Historically, oil revenues have supported the growth of the public sector, yet private enterprise has proved to be a powerful engine of economic growth around the world.

The recent overall performance of the national economy, through a strengthening of economic activity rates in both the oil and non-oil sectors, has been encouraging. While many resource-based economies have suffered from profligate or corrupt governments, Kuwait has largely avoided this scenario, as detailed in Table 3.6 which gives an indication of the corruption level of Kuwait relative to other countries. Kuwait ranks 116th out of the 163 nations evaluated by the Transparency International index, and is seen as a good place to do business by the Economist, an indication of the responsible manner in which the government is addressing the resource "curse".

TABLE 3.6
OIL IMPORTING COUNTRIES AND CORRUPTION

Country	Rank in terms of U.S crude oil imports	Oil barrels/day exported to the U.S – June 2006	Corruption index rank, by Transparency International (1 – most and 163 least)	Economist Global Business Environment grade
Canada	1	1,799	150	Very good
Mexico	2	1,734	86	Good
Saudi Arabia	3	1,549	86	Moderate
Venezuela	4	1,008	23	Very poor
Nigeria	5	996	14	Very poor
Iraq	6	617	2	**
Angola	7	525	14	Very poor
Algeria	8	474	75	Poor
Ecuador	9	282	23	Poor
Russia	10	216	35	Moderate
Colombia	11	211	105	Moderate
KUWAIT	12	201	116	Good
United Kingdom	13	185	151	Very Good
Equatorial Guinea	14	114	9	**
Libya	15	110	54	Very poor

SOURCE: Transparency International - <http://www.transparency.org/>

The role of the private sector cannot be underestimated in this regard. Kuwait boasts of several major sectors. The Kuwait Stock Market shows the daily performance of the listed companies. The banking sector is a major sector that plays a vital role in innovation. The National Bank of Kuwait and Kuwait Finance House are major players in the banking sector. The National Bank of Kuwait has earned several accolades and is highly rated internationally. There are fifty two listed investment companies on The Kuwait Stock Market. Over the last decade Kuwait witnessed an increase in investment in real estate and construction in comparison to the sudden drop in Dubai. Kuwait Real Estate Company, National Real Estate Company, United Real Estate Company together with several other listed real estate companies have been dealing in various real estate activities including the sale and purchase, leasing and renting of lands and buildings, development and construction of buildings. Moreover, these companies have also invested in shares or projects similar to its own activities. The insurance sector boasts several listed companies that include Kuwait Insurance Company and the internationally recognized Gulf Insurance Company. Their activities include

conventional insurance and Islamic financing. Moreover, the growing industrial sector also boasts several listed companies such as Boubyan Petrochemical Company and Kuwait Cement Company. As industrial trade barriers in Kuwait are being reduced, the result is that goods and services, technology, capital, labor and information are now moving more freely into Kuwait. Kuwait is preparing its industries to embark on an active program of industrial development. These industries provide a sound and sustainable base for Kuwait's development. Wataniya and Zain are regarded as regional telecommunications leaders. This sector of the Kuwaiti economy is expanding both domestically and in the region. Private transportation is somewhat exclusively a small business but public transport is the State's prerogative and there are talks of privatization of the National flag carrier, namely Kuwait Airways.

3.6 INSTITUTIONS SUPPORTING INNOVATION IN KUWAIT

Four important institutions that support different forms of innovation and hopefully will help to build sustainable innovation capacity in Kuwait can be identified. Although these institutions are autonomous, they work collectively in promoting innovation at different levels. Moreover, it would not be uncommon to see a board member or political appointee serving as a member on one or more of the institutions. This is consistent with the approach adopted by Hong Kong. According to Yam (2011) when Britain handed the sovereignty of Hong Kong over to China in 1997, The Hong Kong Special Administration Region (HKSAR) government revisited its technology policies and took a number of measures to facilitate technology transfer and foster a culture of innovation in the community – this included the decision that it was important for the different institutions active in the technology field to collaborate (with members serving on more than one board a way of supporting this).

These four institutions are:

The Kuwait Investment Authority (KIA);

The Arab Fund for Social and Economic Development;

The Kuwait Foundation for the Advancement of Sciences (KFAS); and

Kuwait Institute for Scientific Research (KISR)

Firstly, **The Kuwait Investment Authority (KIA)** is an independent government organization entrusted with the management and administration of the country's sovereign wealth funds and for several reasons is considered as an organization that supports and promotes innovative thoughts through its financing initiatives. For this reason in particular, a representative Mr. Bader A. Al-Ajeel, Executive Director, Kuwait Investment Authority's General Reserve Sector was selected for the individual interview.

KIA sets benchmarks for educational and training standard in investment and securities analysis and works closely with universities. KIA offers ten prestigious academic scholarships per year to Kuwaiti Nationals seeking to obtain their MBA (Masters in Business Administration) degree from top ranked universities in the world with high academic standards. To ensure the integrity of the scholarship, the program is supervised by the Cultural Division in the Kuwait Embassies. Moreover, the personnel that are associated with KIA are key people from the private, public and no governmental sectors. The KIA's board of directors is headed by the Minister of Finance, with other seats allocated to the Energy Minister, Governor of the Central Bank of Kuwait, Undersecretary of the Ministry of Finance and five other nationals who are experts in the field. KIA is the custodian of all funds and is ultimately responsible for funding of projects that result in the growth and development of Kuwait.

The two specific funds which represent the principal holdings currently under the management of the KIA are as follows:

The General Reserve Fund (GRF) – the fund for receiving all revenues from which state budgetary expenditures are paid; and

The Future Generations Fund (FGF) – created in 1976 by transferring 50% from the GRF at that time. In addition, 10% of all state revenues are transferred to the FGF on an annual basis and all investment income is reinvested. In particular, global investments are focused on private equity, real estate and hedge funds within the agreed strategic asset allocation.

The organization might also be tasked with managing and administering other funds entrusted to it by the Minister of Finance and these funds, in addition to the GRF and FGF, are likely to be invested in the local, regional and international markets. KIA is estimated to hold in excess of \$200 billion of assets, and is reportedly one of the largest sovereign wealth funds in the world. Some of the principal KIA sovereign wealth enterprises are the following:

National Technology Enterprises Company – The National Technology Enterprises Company (NTEC) was established, in November of 2002 by the Kuwait Council of Ministers with US\$311million in start-up capital and is a fully owned subsidiary of the Kuwait Investment Authority. NTEC is mandated by the Kuwait Council of Ministers to play help servicing the major industrial and commercial stakeholders in Kuwait with their technology needs. NTEC's business model is that of a Technology Projects Development company utilizing investment tools such as Private Equity, Venture Capital and Direct Investments to initiate and stimulate Technology Projects in Kuwait and the local region;

St Martin's Property – the real estate investment arm of the KIA which has held significant holdings in the City of London for over eighty years;

Kuwait Real Estate Investment Consortium – of which KIA owns 99.127%. The consortium carries out real estate transactions, investment in securities and investment in portfolio management activities domestically and internationally; and

Kuwait China Investment Company – 15% stake owned by the KIA and it represents the key investment vehicle for the organization in Asia dealing with sectors as diverse as agriculture, energy and financial services.

In addition to its main headquarters in Kuwait city, KIA also has a branch office (the Kuwait Investment Office) in the City of London which was established in 1953 with the aim of investing surplus oil revenues and thereby reducing dependency on the country's finite oil resources. Its principal objective is to manage that portion of

the FGF allocated to it and to achieve a fair return over the long term by acting as a global investor covering the areas of equities, fixed income, treasury, private equity and property. Indeed, the mission statement of the KIA underpins this requirement of achieving long term investment returns on the financial reserves of the State of Kuwait and thereby providing the country with an alternative to oil revenues. These goals are embodied in the principal legislation governing the activities of the KIA – Law 47/1982.

Moreover, KIA established a Training Department in 1995. A training plan was developed to achieve the following goals:

- Promote staff performance and seek to enhance and develop career and technical skills.
- Contribute to national development by investing in human resources.

In order to achieve these goals, KIA has set up a recognized and distinguished training centre equipped with the most innovative instruction and demonstration technologies. The Training Department focuses, among others, on the following:

- Improving the performance of KIA staff;
- Training new Kuwaiti Graduates;
- Training the staff of local financial institutions and companies;
- The MBA scholarships program;
- Kuwait Automotive Academy; and
- World Bank Recruitment Program.

KIA strongly believes that knowledge (human capital) adds critically to the performance of the private sector.

Secondly, **The Arab Fund for Social and Economic Development**, based in the State of Kuwait and established in 1974, is a regional financial institution overseen by the Central Bank of Kuwait, whose principal aim is the funding of economic and social development in the Arab world through the financing of public and private investment projects and by providing grants and expertise. H.E. Sheikh Salem

Abdulaziz Al-Sabah, Governor of the Central Bank of Kuwait and Chairman of the Board of Directors, was selected for the personal interview.

In the fulfillment of this aim, the loans extended to member countries of the organization are offered on concessionary terms by providing easy financing conditions to assist these member countries implement their development plans. In the conduct of its operations, the Fund follows guidelines on neutrality and organizes itself on the basis of substantive rules to ensure independence from any political considerations.

The Fund has recently focused much of its attention on the funding of private sector development projects in the Arab countries and its activities have been directed at providing direct loans, equity investment, guarantees, lines of credit, as well as institutional support and advisory services. Projects deemed vital to the Arab world and those assuming high priority in national development plans are given precedence. Before any project receives support from the Fund, it is subject to a thorough evaluation of its technical and economic feasibility during which sound legal, organizational and technical structures are created to ensure the success of the project.

When assessing the fairest distribution of its financial loans, the Fund gives priority to inter-Arab projects which are likely to promote cooperation, integration and solidarity amongst member countries. Hence the emphasis on contributing to projects involving the interconnection and interdependence of Arab countries such as electrical power, transportation and communications. In the field of social development and the reduction of poverty, the Fund's financial projects cover areas such as health care, education, drinking water, rural development and social welfare. In its support for the least developed countries in the Arab world, the Fund has offered unstinting help to the Palestinian people and has provided grants to educational institutions, universities and professional and social associations. The principal loan beneficiaries at the end of 2009 were Yemen (89 loans), Morocco (59) and Syria (49), with loans totaling, in the case of Yemen, 639,700 Kuwaiti Dinars. In its endeavours, the Fund encourages participation from the

member states in the assessment and development of the projects and seeks to gain from their existing expertise in project evaluation, implementation and supervision.

The main activity of the Fund centres round providing loans, on concessionary terms, to governments and public corporations and enterprises of member states. In this context interest rates are reduced to 2.5% for low-income Arab countries and 3% for others. Furthermore, the Fund has increased the grace period before loan repayments start to between four and six years and extended the loan term to between 22 and 25 years. At the same time, the Fund concentrates significant effort on the development of the private sector by financing operations beneficial both to the developmental role of the Fund and the private sector itself. To this end, a Special Account was set up by the Fund in 2010 – with members pledging \$1.2 billion – to assist small and medium size private sector projects in member States. In addition, approximately 5% of the Fund's operational profits are directed towards providing grants aimed at providing institutional support to member states, improving efficiency in project implementation and conducting technical and economic studies in key developmental areas.

Furthermore, in addition to providing loans and grants to finance development projects, the Fund also provides a limited number of scholarships to Arab PhD holders in different specialist fields. The Fellowships Programme was launched in December 1997 to enable selected PhD holders to conduct advanced research and/or lecture in some of the world's most prestigious universities. Since its inception, the programme has awarded about 66 scholarships to Arab researchers across a variety of specializations. From an innovation perspective direct recipient of funds are encouraged to further their scholarly work in Kuwait.

Thirdly, **the Kuwait Foundation for the Advancement of Sciences (KFAS)** is a private, non-profit making organization established by Emiri decree in 1976 and is managed and administered by a Board of Directors (BOD), chaired by H.H. the Amir of the State of Kuwait. For this reason in particular His Excellency Sheikh Dr. Salem Jaber Al-Ahmad Al-Sabah, Advisor to the Diwan of His Highness the Prime

Minister was selected for the personal interview together with Sheikh Thamer Jaber Al-Sabah, Deputy Director - The Government Performance Follow-up Agency. Financial contributions to KFAS (1% of the annual net profit) are received from Kuwait shareholding companies, which form the main source of funding for the organization. Most recent figures from KFAS show that 259 investment companies, 135 service sector companies and 125 real estate companies support the activities of the Foundation.

The principal goal of the organization is to promote scientific and technological advancement within the country and the region as a whole by supporting scientific projects, the scientific community and the country's scientific infrastructure. The foundation seeks to achieve this objective by:

- Providing financial assistance for the conduct of research projects in both the basic and applied sciences;

- Supporting projects that are considered to be of national priority and strengthening indigenous scientific talents and initiatives;

- Awarding honours and bestowing recognition on outstanding scientific achievements at national, regional and international levels;

- Publishing scientific journals, books and encyclopedias and thereby provide a reference library of Arabic scientific resources;

- Developing the resources and skills of Kuwait nationals through scholarships, training, workshops, seminars and conferences; and

- Promoting scientific and cultural awareness.

In terms of financial assistance to research projects, KFAS has funded 543 such projects in the areas of biological sciences, engineering sciences, technology, medicine, natural sciences, social sciences and humanities. Its 2011-2012 budget is estimated to be around US\$4 billion. With regard to funding for cultural activities, the organization focuses its resources on raising awareness of the role of Islamic

and Arab civilization throughout the world and on enhancing mutual cooperation between the scientific, social and cultural organizations in Kuwait with their counterparts abroad. To achieve the latter objective, resources are allocated to the publication of scientific books and magazines, the holding of scientific symposia and the running of competitions. Indeed, the foundation makes large-scale contributions to the field of publishing and has published a substantial collection of scientific books as well as producing films and documentaries recording the scientific achievements of both Arab and foreign scientists. Other activities in the area of raising scientific awareness include supporting student participation in international scientific Olympiads, the production of documentary films and the organization of cultural events.

To further enhance and promote scientific research, KFAS awards outstanding local, regional and international scientists and researchers the following, scientific achievement awards:

- The Kuwait Award which is awarded every year for the promotion of science and culture across a variety of branches;

- The awards for outstanding work carried out by authors and translators and granted during Kuwait's annual book fair; and

- Awards to encourage the work of distinguished university and college graduates.

In addition, specific achievement awards are presented to outstanding contributions to medical science, agriculture, animal and fish resources, the best research papers and studies into the repercussions of the Iraqi invasion of Kuwait. Some examples of the financial support given to the country's national scientific infrastructure are the \$1bn allocated for the establishment of the Scientific Centre and the establishment of the Dasman Centre for Research and Treatment of Diabetes.

The Foundation is managed by a Board of Directors, chaired by H.H. the Emir, and comprises six members selected by Kuwait shareholding companies for a period of

three years. The Board of Directors appoints a Director General who manages the scientific, administrative and financial activities of KFAS and monitors the implementation of the policies set by the Board.

Fourthly, **the Kuwait Institute for Scientific Research (KISR)** was set up in 1967 to conduct applied scientific research in three areas: petroleum, desert agriculture and marine biology. This applied scientific research was meant to focus on domestic industry, energy, agriculture and the national economy in order to make a contribution to the social and economic development of the state. In 1981 KISR was legally designated as an independent public institution governed by a Board of Trustees chaired by a minister from the Council of Ministers. Sheikh Thamer Jaber Al-Sabah, Deputy Director - The Government Performance Follow-up Agency was selected for a personal interview and Dr. Bilal Sandid Legal Adviser at Council of Ministers.

The institute was also tasked with carrying out studies relating to the preservation of the environment, resources of natural wealth and their discovery, sources of water and energy and the methods of agricultural exploitation.

In fulfillment of this mission, KISR has defined its objectives as follows:

- Conduct scientific research to benefit national industry and the environment;

- Explore the country's natural resources for their exploitation and preservation;

- Provide scientific and technological consultation services to the government;

- Foster relations and conduct mutual research with higher education institutes in Kuwait and overseas; and

- Contribute to the economic and social development goals of the State.

KISR classifies its main research activities into five principal areas each with their own mission statement and specific goals. They are as follows:

Environment and Urban Development dealing with pollutants in the terrestrial ecosystems, industrial and domestic waste and accompanying safety measures;

Food Resources and Marine Sciences dealing with animal husbandry, plant production, soil sciences and native plant cultivation and wildlife preservation;

Petroleum Research and Studies Centre set up in 2000 to focus on petroleum production, refining, polymer and petrochemicals, materials corrosion and health and safety;

Techno Economics dealing with strategic economic issues for the future prosperity of the State, such as privatization, globalization, the development of business plans and market analysis for prospective investment opportunities as well as developing decision support tools that will optimize resource allocation in the service and industrial sectors and other activities that include the development of web applications for mathematical and economic models and the conduct of feasibility studies, statistical analysis, experimental design and mathematical modeling for research projects at KISR; and

Water Resources dealing with the management and optimal utilization of available resources, reducing the costs of production, desalination and treated wastewater. This area of research also deals with the protection of water resources from environmental hazards and looking at ways of public/private sector partnerships to increase efficiency and productivity.

Analytical support and services for KISR is provided by the Central Analytical Laboratory with its five specialist laboratories covering wet chemistry, chromatography, spectroscopy, physical chemistry and trace metals and the Building Materials Lab for the physical and mechanical testing of cement, masonry components and general construction materials. In addition to the lab facilities, KISR also has specialized centres – the

National Seismic Network monitoring seismic activity in Kuwait, the National Meteorological Network with its nine meteorological stations throughout the country and the Remote Sensing Lab (Satellite Imaging) for the production, among other things of maps, data and analyses of geo-sphere, marine environments, atmosphere, natural hazards and the dynamic processes of the planet.

KISR continues to host a number of scientific conferences covering subjects as diverse as disaster management, water resources and the environmental challenges, enhanced building operations and the impact of climate change on the agriculture and biodiversity of the Arab region. In addition, the institute publishes a whole range of books, articles and scientific reports as well as its Science and Technology magazine, and conducts student courses, workshops and seminars both for in-house staff and for the general public to increase understanding and awareness of major scientific, environmental and biodiversity issues. These institutions among many others play pivotal role in policy issues relating to innovation. Table 3.7 presents the percentage of the budget on different activities of KISR (2011-2012) as reflected on its website.

TABLE 3.7

2011-2012 ANNUAL BUDGET FOR INDEPENDENT PROJECTS

Elaboration of the most appropriate networking institutional mechanism through consultation with member states	3.448%
Inception workshop on basic requirements and resources for the development of sustainable regional monitoring system for POPs in ambient air.	10.344%
Technical regional Expert Group Meeting for the Network partner to discuss means and options of for the development of a regional ambient air POPs monitoring system.	10.344%
Preparation of a project proposal on "Air monitoring of POPs in West Asia region" (to be submitted to GEF and other funding agencies).	6.896%
Ongoing pilot project at KISR for monitoring POPs in ambient air in Kuwait.	34.482%
Communications with UNIDO and other partners to establish a regional forum to include all West Asia Parties	12.073%

Collation of information related to POPs issues (guidelines, technical articles, reports, web links, etc)	3.448%
Facilitation of the potential development of a database on POPs in the region (to be hosted at KISR)	1.724%
Development of a pilot web site with access interface	20.689%
The 4 th UNIDO Consultation Meeting for BAT/BEP Forum for the GCC Region.	6.896%

Gauging from the data presented, KISR's approach towards innovation, is somewhat different from the west. In Kuwait an all-encompassing approach is developed. Diffusion of innovation is vitally important.

3.7 CONCLUSION

This chapter documents Kuwait economic, political and social history in relation to the growth and development of the oil and oil related industries. The intention is to highlight the rather difficult task that faces a benevolent ruling government benefiting from high levels of natural resource-based revenues. Is there a relationship between natural resource wealth, the design of democratic institutions and optimal collective decisions? Optimum decision making is defined as achieving goals important to the developmental process such as deep and equitable reforms placing the government in a central position in caring for its citizens. The Kuwaiti constitution is designed to distribute power among actors, generate efficiency in governance, and govern the interactions of actors. At the same time to move forward, it is imperative to reduce reliance upon oil and oil-backed resources. To this end innovation and the development of non-oil sectors must be a non-negotiable task for future governments. To begin to address this, the next chapter considers policies and practices associated with these issues. Whilst this chapter has provided a brief account of

economic changes during significant periods showing the country has been modernised, its people's links with their heritage are as strong as ever. Kuwait's wealth -- Black Gold -- may be buried underground, but its spirit is still vibrantly free and alive and will continue to influence developmental strategies in the years to come. The challenge is to ensure that the Black Gold benefits - and not curses - future generations of Kuwaitis.

CHAPTER FOUR

LEVERAGING INNOVATION AND INCREASING RETURN ON INNOVATION FOR LONG TERM SECURITY

“Economic life is a struggle between those that want to change things, and those that want to keep things as they are. (As in any war) the advantage lies with those that attack. Technological innovation is a choice weapon in this struggle. Innovation is a strategy for survival.” (Foster, 1986)

4.1 INTRODUCTION

The preceding chapters noted that income accruing as a result of the discovery of oil in Kuwait rapidly changed Kuwait's economic priorities, bringing new opportunities and at the same time new challenges. It has also been highlighted that the government of Kuwait is concerned about many important issues relating to the depletion of non-renewable resources. One of the unique challenges facing Kuwait is what collective action is necessary to safeguard time honoured traditions that combine economic prosperity with solidarity. Today Kuwait is in need of new commitments on the part of its citizens and decisive actions in political leadership. Instead of maintaining structures and organizations that have shown themselves unable to deal with the challenges that face Kuwait, Kuwait must be ready to support structural changes. This in particular requires a prioritization of resources towards education, research and development. Kuwait can only become comprehensively innovative if all sectors support the development of innovative products and services. The need for innovation should be identified by all sectors. Increasingly the various different sectors appear as focal points for learning and knowledge creation in this new age of global, knowledge-intensive capitalism and, when any one sector would get to look at another as an important source of innovation and economic growth, this form of innovation diffusion among sectors becomes important to foster a reciprocal understanding and mutual confidence among the various different sectors. Strategic issues entailing innovation require the involvement of all

parties. These include businesses, the public sector, producers and consumers. A wide-ranging partnership for innovation is necessary, particularly when a country's resources are in question. To establish an optimal framework and develop potential for innovation, the prospect of an innovation-friendly market must be widely accepted.

In light of these issues this chapter critically examines innovation as a factor associated with wealth creation in Kuwait and examines the country's economic priorities. It explores the decisions a country must make when faced with an abundance of a natural resource and asymmetric problems such as limited access to technical knowledge, a failure to engage - particularly in long-term planning, weak institutional structures, and missing mechanisms of accountability. This chapter identifies innovation as a solution to the resource curse and examines what institutional innovations are necessary to align the incentives of key domestic and international players to facilitate innovation. It then lays out a path for improving the management of the wealth of Kuwait through innovation to meet the challenge of the resource curse.

4.2 NATIONAL SYSTEMS OF INNOVATION - EU SURVEY OF INNOVATION

In its response to increased competition and globalisation the European Council argued for increased and enhanced efforts to improve the Union's performance in innovation. In March 2000 in the picturesque city of Lisbon the Union set itself the goal of becoming the most competitive and dynamic knowledge-based economy in the world within the next decade. Fine words one may say, but precisely how does one set about achieving this laudable goal? A strategy was developed and presented in Stockholm in March 2001. The strategy was to build on the economic convergence that had been developed over the past 10 years within the EU single market and to coordinate an 'open method' of developing policies for creating new skills, knowledge and innovation. To support this approach the European Commission stated that there was a need for an assessment of how

member countries were performing in the area of innovation. The idea of a ‘Scoreboard’ was launched to indicate the performance of member states. This would be conducted every year as a way of assessing the performance of member countries. It is essentially a benchmarking exercise where the European Union can assess its performance against other countries, most notably Japan and the United States.

The 2005 Scoreboard also analyses Bulgaria, Romania, Turkey, Iceland and Switzerland. This is an extremely ambitious project to try to assess innovative ability. There have been many studies over the past two decades that have tried to identify the factors necessary for innovation to occur (see Table 4.1), and while many factors have been identified many of these are necessary but not sufficient in themselves. The latest European Innovation Survey was conducted in 2009 (EIS, 2010). Figure 4.1, shows a map of the European Union indicating five performance groups, ranging from the highest to the lowest overall performers. Table 4.1 illustrates the how the EIS (2010) divides the countries into four key groups.

TABLE 4.1

INNOVATION GROWTH LEADERS
GROUP GROWTH RATE GROWTH LEADERS MODERATE GROWERS
SLOW GROWERS

GROUP	GROWTH RATE	GROWTH LEADERS	MODERATE GROWERS	SLOW GROWERS
INNOVATION LEADERS	1.5%	Switzerland (CH)	Finland (FI), Germany (DE)	Denmark (DK), Sweden (SE), United Kingdom (UK).
INNOVATION FOLLOWERS	2.7%	Cyprus (CY), Estonia (EE)	Iceland (IS), Slovenia (SI),	Austria (AT), Belgium (BE), France (FR), Ireland (IE), Luxembourg (LU), Netherlands (NL).
MODERATE INNOVATORS	3.3%	Czech Republic (CZ), Greece (GR), Malta (MT), Portugal (PT)	Hungary (HU), Lithuania (LT), Poland (PL), Slovakia (SK),	Italy (IT), Norway (NO), Spain (ES).

CATCHING-UP COUNTRIES	5.5%	Bulgaria (BG), Romania (RO)	Latvia (LV),	Turkey (TR), Croatia (HR).
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Moreover, some governments have attempted to develop ‘innovation toolkits’ and ‘scorecards’ to try to help firms in their own countries to become more innovative (UK Department of Trade and Industry). Most of these have not been successful. This ambitious project by the European Union is full of limitations and is generally regarded as over-simplistic. This is largely because the economic conditions of the member countries are so very different and all have a wide variety of strengths and weaknesses. None the less, in order to assess where the European Union should target help and the precise type of help required by each member it is necessary to analyse the innovative performance of countries.

Since innovation is the result of numerous interactions between key organizations and institutions, the national innovation system suggests that the flows of technology and information among people, enterprises and institutions are vital to any innovative process. The Organisation for Economic Co-operation and Development (OECD) identify innovation and technology development as the result of a complex set of relationships among actors in the system, which includes enterprises, universities and government research institutes. The Organisation goes further and suggests that for policy-makers, an understanding of the national innovation system can help identify leverage points for enhancing innovative performance and overall competitiveness. It can assist in identifying dissonance within the system, both among institutions and in relation to government policies, which can prevent technology development and innovation. With increasing international competition, the time to market products is becoming shorter. Therefore a collaborative innovation strategy through the promotion of efficient networks of suppliers, knowledge institutes, intermediaries, customers, users, competitors need to be

established. The idea that is advocated is that a decision to innovate needs the collaborative decision-making of several stakeholders that make up the national innovation system of the country.

Goetheer and Heijs (2011) in their study - key players in national systems of innovation - identify the importance of collaboration in networks for the diffusion of knowledge and the development of innovations. However, they contend that the measurements to determine key players in systems of innovation are scarce. They build on the social network theory, to assess methodological approaches to determine key players in national systems of innovation. In this regard Goetheer and Heijs (2011) develop and assess three approaches, namely, top down, bottom up and systems approach to determine which approach gives more representative results. Based on their research, Goetheer and Heijs (2011) recommend the systems approach as it reveals more representative results.

In pursuit of the EU vision, Arab States realized that the concept of Information Society is not restricted to a set of IT applications, but also includes a broader and more extensive vision that gives society the chance to make more progress and achieve an effective participation in the 21st century civilization. The World Summit on the Information Society (WSIS) was held in two phases (<http://www.itu.int/wsis/index.html>). The **first phase** took place in Geneva hosted by the Government of Switzerland from **10 to 12 December 2003**, and the **second phase** took place in Tunis hosted by the Government of Tunisia, from **16 to 18 November 2005**. It is indeed historic that the occasion took place in Tunis reflecting the importance of ICT not only in the developed western world but also in Africa and the Arab world. According to The Economic and Social Commission for Western Asia (ESCWA, 2007) the all encompassing EU vision can be achieved through the development and modernization of ICT infrastructure, the increased reach of Internet as an access tool to information and knowledge, the building of trust and security in IT usage, and the capacity building of

individuals to effectively participate in information society by increasing cultural and IT awareness, developing education, encouraging the use of IT in general, and electronic transactions in particular, enhancing the role of the government, the business sector, and civil society organizations in using ICT for the development of all its citizens. The setting of relevant legislations related to electronic transaction becomes vital within the cooperation and implementation framework of international agreements and conventions.

4.2.1 National Innovation Systems in Kuwait

The different innovation capabilities of individual firms are regarded as the key components of a country's innovation system (Yama, 2011). At the outset it must be stated that Kuwait was visibly represented by senior government officials at the first world summit in Geneva in 2003 and declared its commitment to the declaration: "We, the representatives of the peoples of the world, assembled in Geneva from 10-12 December 2003 for the first phase of the World Summit on the Information Society, declare our common desire and commitment to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights". Consistent with this declaration a fundamental hypothesis of the national innovation systems approach stresses that the **flows of technology and information** among stakeholders. The implementation of innovation and technology developments are the result of a complex set of relationships among a host of individuals. A national innovation system is most valuable in Kuwait's context. The Economic and Social Commission for Western Asia (ESCWA, 2007) of the United Nations conducted the study: "National profile of the information society in Kuwait" - offer a summary of the achievements and progress made towards building a comprehensive information society that

transforms ICT into an effective tool for sustainable development. Moreover, Kuwait Central Agency for IT was established in 2006 and its activities are reflected on its portal; <http://www.cait.gov.kw>. This reflects the determination of the State of Kuwait for a National Strategy to build an information society to contribute to the growth of Kuwaitis and the use of IT as a development tool. This strategy follows the action plan of the World Summit on the Information Society (WSIS) and the regional action plan of West Asia countries. The Central Agency for Information Technology in Kuwait runs awareness and training media campaign to establish e-culture at all social levels, and to encourage the use of IT in all aspects of life, and thus contributes to the development of a comprehensive information society. The public/private partnership (ppp) or multi-sector partnership (msp) in Kuwait are reflected the private sector's active role in its development consistent with the regulations of government and the Central Agency for Information Technology. Kuwait Central Agency for IT states that the Non-governmental organizations have taken part in a number of committees and task forces established by governmental institutions in the ICT field in relation with the e-government project and e-services, in order to offer counsel and participate in their implementation and raise awareness of them. This approach is critical particularly in Kuwait since time honoured traditions in Kuwait can in no way be dismissed insensitively.

4.2.2 Progress of Kuwait towards fulfillment of national policies and strategies

The Kuwaiti government supports the application of e-government as a first step towards the achievement of e-Kuwait. This support is vitally important since it immediately creates a mindset of change. Eight governmental bodies provide electronic information services on individuals or corporations, in addition to a number of electronic transactions. Moreover, the necessary draft laws pertaining to electronic services and transactions are already in place. The number of electronic services provided by private sector companies has increased, and all Kuwaiti banks offer e-services, and

electronic trading has become one of the main activities of the Kuwait Stock Exchange (KSE) and it is not surprising to find aged investors on the KSE using technology for their trading activities. There are electronic sale, purchasing, and payment transactions that have emerged either via the Internet or SMS.

The ICT infrastructure (both wired and wireless) covers the entire Kuwaiti territory through the Ministry of Telecommunications, mobile phone companies, and Internet service providers (ISPs). The Ministry of Telecommunications manages and supervises the wired network in Kuwait, which has seen a growth in the number of switchboards, an increase in capacity, and a rise in the demand for all types of services. In 2008, the Ministry increased telephone numbers from 7 to 8 digits in order to accommodate the demand on landlines and make numbers more in line with international standards. Mobile phone companies and ISPs rely on the Ministry of Telecommunications infrastructure to operate their services, since they lease electronic circuits and sites that belong to the Ministry. There are four main ISPs in Kuwait that offer equally competitive services and Wi-Fi access points have increased in public places such as malls, service centers, and cafes, thus leading to the decrease in the number of Internet cafes. Moreover, Wi-Fi is widely used in households with DSL and is extremely popular with many families. This is mostly due to incentives and promotions ISPs offer to subscribers. There are currently three mobile phone companies in Kuwait. These companies have been transferring data and using the Internet through their wireless networks that cover the entire Kuwaiti territory. The speed at which Kuwait is progressing is remarkable. This is not surprising since Kuwait is a relatively small country and at the same time innovation strategy adopted by Kuwait is consistent with the rest of the world but with much more sensitivity ensuring that time honoured traditions are not violated in any way.

Kuwait recognizes with the rest of the world that building an inclusive Information Society requires new forms of solidarity, partnership and

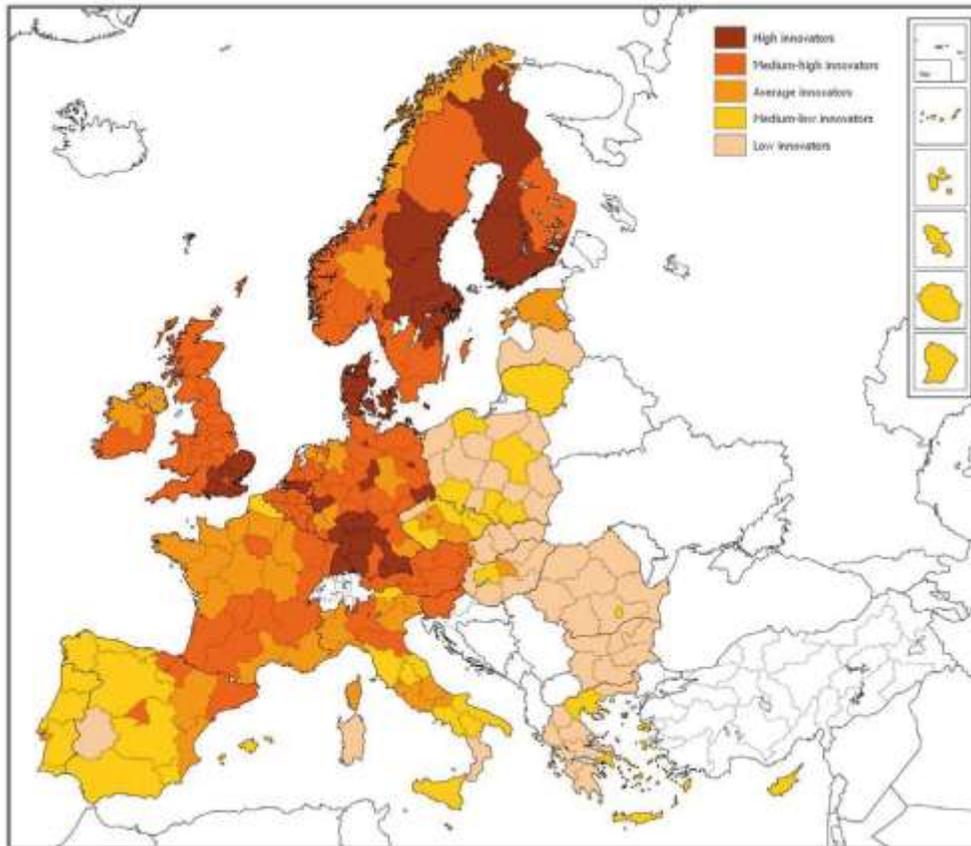
cooperation among governments and other stakeholders, namely, the private sector, civil society and international organizations and Kuwait realizes the ambitious goal of this declaration as espoused by the 2003 World Summit on the Information Society – that Kuwait will bridge the digital divide and ensuring harmonious, fair and equitable development for all - will require strong commitment by all stakeholders, we call for digital solidarity, both at national and international levels.

4.3 IMPROVING THE INNOVATION PERFORMANCE OF THE EU

Figure 4.1 shows a map of the European Union indicating five performance groups, ranging from the highest to the lowest overall performers. All the elements in the Scoreboard are necessary but not sufficient in themselves to ensure that innovation occurs. For example, in this chapter we have seen the example of Turkey, a late-industrialising country on the edge of Europe, a country with a population of 60 million, already a member of the North Atlantic Treaty Organisation (NATO) and a prospective member of the European Union. Turkey is a good example of a late-industrialising economy. Sitting on the edge of Europe and bestriding two continents, Turkey should be in a position to develop a successful economy. However, in Turkey there seems to be a missing link in terms of the innovative intention and capabilities of enterprises. Turkey needs to put in place many of the things detailed in the Scoreboard. This would surely help to develop enterprise in the country, but it will not convert Turkey into a Germany or Finland overnight.

FIGURE 4.1

MAP OF THE EUROPEAN UNION INDICATING FIVE PERFORMANCE GROUP



By identifying, comparing and disseminating best practices in financing and technology transfer, Europe can improve its innovation performance. One area that needs particular attention is the overall perception of the entrepreneur. The image of the entrepreneur needs to have greater value, as in the United States where the drive to try to market new products, with the in-built risk of failure, is seen much more positively than in Europe.

The Scoreboard may be helpful to governmental policy makers in deciding where to invest substantial sums of money. However, the first two chapters of this book have emphasised that firms behave differently given similar circumstances and that some firms appeared to be more successful than others. Given this, the Scoreboard's practical help is likely to be extremely limited.

4.4 SOCIO-ECONOMIC IMPERATIVES OF KUWAIT

Any thoughts associated with *resource curse reduction* should ideally begin with an agenda for improving the management of resources that generate wealth. According to Al-Hassan Delgado and Omran (2007), setting priorities and economic initiatives are imperative in order to overcome the curse. However, this needs to be done within the confines of the socio-political paradigm (as we have outlined in the preceding chapter). In Kuwait in particular, as it is in developing economies in general, there ought to be a 'buy-in' to consumer trust and confidence in innovation (Al-Melhem, 1998). Blas and Kerr (2007), examining soaring consumer spending in the Gulf Countries, contend that the confidence of consumers in novel products and services is facilitated by a robust system of production and consumption protection. Porter (1999) and Delgado, Porter and Stern (2008) suggest that in markets where consumer confidence is high, the introduction of new products and innovative products is easier.

In this new economic order, Al-Melhelm (1998) contends that Kuwait cannot thrive unless it becomes more inventive, responds more effectively to market preferences and increases innovation. A literature survey of some poorer countries, examples of which include Singapore, India, Botswana, Equatorial Guinea, Malta, Bulgaria and Brunei, have exhibited extraordinary innovation potential and have a long standing tradition of break-through inventions compared to the oil rich economies of the Gulf-which certainly have a wealth of creative people (De Boer and Turner, 2007). Here, a large number of family enterprises have excelled over the years in passing skills and knowledge to their children, reaffirming the work ethic and entrepreneurial spirit. Many Kuwaiti entrepreneurs are perceived not to be able to imagine life without the responsibilities of managing the family enterprise, because their working lives have revolved entirely around their enterprise, leaving little time to develop outside interests. However, cultural, economic and social transformations in the global markets will lead to a new

demography affecting the way business is conducted. Indeed the promotion of all forms of innovation may be the single most lasting gift that one generation of Kuwaitis can grant on the next. (Palliam, Cader and Chiemeké, 2011).

4.5 INNOVATION IN CONTEXT

According to many, the process of innovation is the main engine of (continued) economic growth. As far back as 1943 Schumpeter (1943) emphasised that: *“the fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers’ goods, the new methods of production or transportation, the new markets, the new forces of industrial organisation that capitalist enterprise creates.”*

However, such potential to create new products, processes, markets or organisations are path-dependent in the sense that there are certain nations and locations which seem to have acquired that capability over time, for innovation relies upon the accumulation and development of a wide variety of relevant knowledge (Dicken, 1998). The view that much needs to be in place for innovation to occur and that there is a significant role for the state to play is confirmed by George Marshall, whose ideas were responsible for the rebuilding of Europe after the Second World War. In the same publication he is cited as commenting on both the tangible and intangible aspects of the Industrial Revolution, suggesting that ‘the secrets of Industry are in the air’. Marshall cited in Dickens (1998) recognised a number of characteristics that influence innovation:

- the institutional set-up;
- the relationship between the entrepreneurs and financiers;
- society’s perception of new developments;
- the openness to science and technology;
- networks between scientific and academic communities and business circles;

- the operations of financial institutions;
- the growing liberal–individualist economic paradigm; and
- the role played by the state in accommodating and promoting.

However, the capability of organisations to initiate and sustain innovation is, to a great extent, determined by the wider local and national context within which they operate. This is essentially why ‘innovation within’ requires a favourable ‘context outside’. That is, political, economic and social conditions play a major role in whether organisations or corporate actors will take the risk and innovate, as innovation is key to competitiveness, survival and sustained growth. To gain a better understanding of this, it is also necessary to ‘look out of the window’ at the business environment in which economic actors strive to gain an upper hand in the marketplace.

Much can be learned from examining recent history. The development of science and technology in the West created a wide gap between the so-called industrialised nations and their followers, ‘late-industrialisers’ (countries with no, or limited, indigenous technology development capacity). Some states, including Japan and some East Asian countries, have managed to close that gap with strategies which focus mainly on industrialisation. In these countries, economic growth was achieved in stages, through imitation, by diffusion of technology, development of new technology and efforts to develop their own capacities. So the cycle that began with imitation was later turned into a creative and broader basis upon which economic transformation could be achieved. This transformation required continual efforts by entrepreneurs and businesses and a collaborative framework promoted by the state. However, to reach maturity in today’s economy (i.e. to be able to create high-value-added and knowledge-based products and services), would appear to be a gigantic task for the states and societies of latecomers. Consequently, the state must play a more significant role, perhaps by strategic intervention in

infrastructure development and technological capacity formation, as well as investment in human capital formation.

4.6 THE ROLE OF THE STATE AND NATIONAL 'SYSTEMS' OF INNOVATION

To support our understanding of the process of innovation within the enterprise one must also grasp a basic understanding of the way the economy interrelates with global and regional economies on both local and national levels. Not only do national economies tend to be dominated by a form of economic organisation (e.g. the *Chaebol* in South Korea or *Keiretsu* in Japan), it is also the case that the relationship between state and business differs radically from one national space to the other. Kuwait, with its historic dependence on oil for example, is distinct from Japan – which does not possess oil or any substantive natural resources of note. Such interrelationships in society generate a business environment with a unique business value system, attitude and ethic. Historically, this difference created both advantages and disadvantages for business organisations across a range of activities, the most important of which may be perceived as the process of innovation (Porter, 1990).

The answer to the question of whether there is a role for the state in the process of innovation has been addressed in different contexts including those covered by Porter (1990) and Afuah (2003) and suggests state action may be necessary dependent upon a number of issues.

4.6.1 THE 'PUBLIC' NATURE OF KNOWLEDGE THAT UNDERPINS INNOVATION

Knowledge is a type of public good, causing private expenditure on innovation to be dampened in those instances where the innovator cannot capture sufficient revenues to ensure an adequate return on their investment. In such scenarios, the government can play an indispensable role in the process of idea generation. Subsidisation and widespread distribution of knowledge may stimulate economic actors to work on new ideas, alongside state organisations, and to convert such ideas into marketable goods or services. For instance, by granting intellectual property rights to producers of knowledge and by establishing the necessary legal infrastructure to support those rights, the state may promote knowledge generation.

4.6.2 THE UNCERTAINTY THAT OFTEN HINDERS THE PROCESS OF INNOVATION

Macro-economic, technological or market uncertainties may all hinder innovation. When the environment causes companies to become risk-averse in investing funds in innovation projects, then the state may promote such activities through subsidisation, providing tax advantages and supporting firms in Research and Development projects. Creating a stable economic environment, where funds can be extended by the banking system to productive firms, is one of the first preconditions of strategy making. Thus, expectations of low inflation, low interest rates and stable growth will encourage firms to invest in entrepreneurial activity. Countries that exhibit political volatility manifest several forms of uncertainty and a reluctance to innovate. Auty (1994b) also demonstrates this in his classical study on Bolivian development. Good governance therefore becomes a precondition for progress of any kind in development. However, policymakers are usually frustrated by inadequate research on the causes, consequences and ultimate solution for poor governance particularly in

developing economies. Uncertainty as a result of poor governance makes strategies for capital formation in developing nations more difficult.

4.6.3 THE NEED FOR CERTAIN KINDS OF COMPLEMENTARY INVESTMENTS

Provision of electricity, roads and water has historically assisted industrial development. More recently, the establishment of communication systems (e.g. communication superhighways), legal infrastructure and the formation of industrial districts (or clusters) have been areas where state action has established a favourable environment for enterprises.

4.6.4 THE NEED FOR COOPERATION AND GOVERNANCE

The state may lead in setting the vision, thus enhancing the possibilities for better communication and joint decision making. In the UK, for example, the government is providing funds (through education and promotion) to encourage households to switch from an analogue television signal to a digital television signal. Such action helps countries/society to embrace newer improved technologies more rapidly.

4.6.5 POLITICS

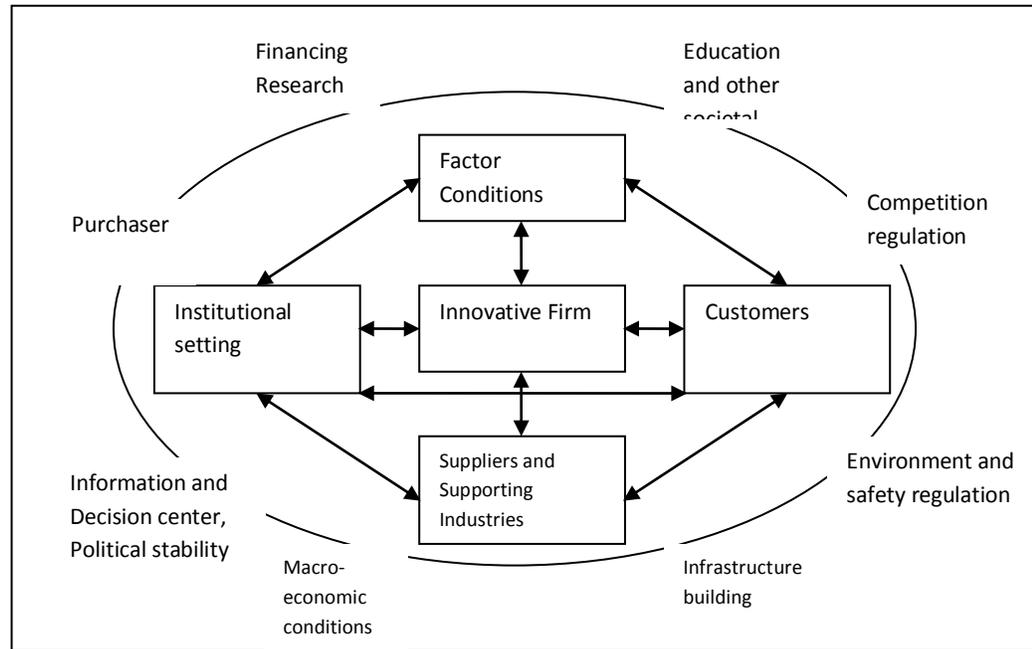
Lastly, in terms of politics, national states still play a key role in contributing to international and regional regulatory standards within the system of 'national states', and in creating consent and cohesion in the national business making arena. Such standards, whether environmental, safety or human rights, are increasingly becoming 'de rigueur' in industrial or business activities. The German government, for example, has an impressive record of being at the forefront of introducing legislation in automobile safety and environmental recycling, and this has contributed to Germany becoming a world leader in these two industries.

4.7 HOW NATIONAL STATES CAN FACILITATE INNOVATION?

As both a financier of research and development and major purchaser, the state can have a significant impact on strategic direction within certain industries. In so doing it encourages entrepreneurial spirit. For instance, in 1995, the United States spent \$71.4 billion on research and development in the defence, health, space, general science, energy, transportation, environment and agriculture sectors. There are also indirect ways of financing research and development, such as offering tax exemptions, subsidies, loan guarantees, and export credits. For example, Boeing not only paid no taxes between 1970 and 1984, but also received a tax refund amounting to \$285 million (Afuah, 2003). As a major purchaser, the state can also reduce uncertainty and create favourable cash flows for firms by its willingness to pay higher (monopolistic) prices for early models.

Through education, information dissemination, governance and other societal actions, the state can impact upon the way the society perceives discoveries and adapts new technologies. At the same time, the state can also create cohesion in society and make strategic interventions to promote, for instance, the formation of a highly qualified workforce. Interdependency between state and society may create a favourable national culture which welcomes scientific development, and removes the potential for conflict between leading sectors and traditional sectors, economic interests and social forces and cultural traditions and new trends. Regulation of competition is another critical area where the state can intervene, ensuring that monopolies (that can result in under-innovation) do not emerge, and so protect society against possible corporate abuse.

FIGURE 4.2
THE ROLE OF THE STATE IN INNOVATION



Source: Innovation Management and New Product Development (P. Trott, 2005)

Figure 4.2 highlights diagrammatically the possible roles that can be played by national states and the benefits that accrue to the various stakeholders. It takes Porter’s industry attractiveness framework and examines the role the state can play in relation to innovation. It underlines a firm’s relationship with buyers, factor inputs (land, labour, capital, raw materials); related and supporting industries (technology providers, input providers) and other institutions that help facilitate strategic orientation and innovative capabilities. These will determine to a great extent the firm’s opportunities – notwithstanding the fact that its inner strengths (its strategy-making capabilities and structural features) will clearly affect this potential.

4.8 KUWAIT’S FUTURE DEPENDS ON INNOVATION

Globalisation has changed Kuwait as well as the world economic and social order. As a result new opportunities and new challenges have emerged. The opportunities are manifested in several growth metrics that have

already been identified. Briefly, Kuwait is a wealthy economy and a geographically small state. The rise in global oil prices throughout 2010 has revived government consumption and economic growth as Kuwait experienced a 20% increase in government budget revenue. It is a relatively investor friendly and open economy and the crude oil reserves are estimated at 102 billion barrels – which constitutes approximately about 9% of world's reserve. Petroleum accounts for almost 50% of GDP, 95% of export revenues, and 95% of government income. The Kuwait Oil Company has an objective of increasing oil production to 4 million barrels per day by 2020. Possibly due to the positive fiscal situation, diversification of the Kuwait economy is minimal. The business climate is not highly considered and hostilities between the National Assembly and the executive branch have stalled several economic initiatives. Nonetheless, the government in May 2010 passed a privatization bill that allows the government to sell assets to private investors, and in January passed an economic development plan that pledges to spend up to \$130 billion in five years to diversify the economy away from oil, attract more investment, and boost private sector participation in the economy. In any new economic order, Kuwait can only compete when a strategy of innovation has been implemented.

Al-Hassan, Delgado, and Omran, (2007) point out that while some Kuwaitis, concerned about issues ranging from climate change and the depletion of non-renewable resources to demographic change and emerging security needs (particularly after the invasion by Iraq), are calling for collective action to safeguard the Islamic way of life, others are advocating supporting future prosperity through social and economic development (with a key role envisaged for innovative ideas). From the protection of the environment through eco-innovation to the improvement of individual well-being through enhanced infrastructure provision, Al-Hassan, Delgado, and Omran (2007) strongly believe that innovation, in a broad sense, is one of the main responses to citizens' material concerns about their future. The key

question that needs to be addressed is whether Kuwait has the extraordinary innovation potential seen in other Arab states which have a long-standing tradition of breakthrough inventions. For example science flourished under the early caliphs of Baghdad (Afsaruddin, 2002). By drawing on a variety of texts - Greek, Indian and Persian - and translating them into Arabic, the early scholars accumulated a vast body of scientific knowledge in the world and built on it through their own discoveries. Astronomy was used to work out the direction of prayer. Mathematics was needed for dividing property according to the Islamic law of inheritance.

While increased competition may constitute the most efficient instrument to stimulate innovation, policy measures and innovation support mechanisms may also have a pivotal role to play. To facilitate innovation with sensitivity in Kuwait one needs to consider the establishment of problem solving, market directed and socially and environmentally responsible technology invention, commercial development and transfer systems.

The concept of 'developmental states' is used to explain the way in which some states achieved a major transformation of their economy and society. This was particularly the case with respect to some East Asian states, especially the so-called Tigers of Korea, Taiwan, Singapore and Hong Kong (Castells, 1992). Although such states were not immune to corruption, fraud and other forms of inefficiency, they brought about major changes in the economy, particularly in upgrading the potential of industry to move from imitation toward innovation and technology development, which is by no means an easy task. There are also 'predatory states', which capture most of the funds in the economy and reallocate them in the form of rents to a small group of the population, thus impeding the growth potential in the state (Evans, 1989).

4.9 THE PROMOTION AND FACILITATION OF TECHNOLOGICAL INNOVATION

The management of innovation has provided a large and diverse body of literature. It recognises that while there is much complexity and uncertainty in managing innovation and new product development, much is known. There is considerable agreement on many of the factors that contribute to success and the activities and processes that need to be undertaken if innovation is to occur and a firm's performance is to improve. Table 4.2 presents some of the key studies that have influenced our understanding over the past fifty years.

This innovation management literature informs us that the capacity to absorb new knowledge, to transfer and diffuse knowledge and the ability to learn through interaction are crucial success factors in innovation as typified by Cohen and Levinthal (1989) Zahra and George (2002). New and commercially useful knowledge is not only the result of the conscious action of creative individuals. It is also the outcome of the interaction and learning processes among various actors in innovation systems. The need for connectivity, and the complexity of the interactions it entails, therefore emerges as a major factor influencing the management of innovation. Furthermore, Chesbrough (2003; 2003b; 2003c; 2006) argued recently that the process of innovation has shifted even further from one of closed systems internal to the firm to a new mode of open systems-involving a range of players distributed up and down the supply chain. This seems to be supported by the increasing application of network theory into more and more areas of business management (Parkhe et al., 2006).

Table 4.2 lists the major sources of secondary literature that were initially considered important to reflect upon innovation. It was not an intention to confine the study to these sources. However, the sources provide a historical account and detailed overview of innovation over the period 1957 – 2003.

TABLE 4.2
KEY STUDIES OF INNOVATION MANAGEMENT

	STUDY	DATE	FOCUS
1	Carter and Williams	1957	Industry and technical progress
2	Project Hindsight- TRACES, (Isensen)	1968	Historical reviews of US government funded defence industry
3	Wealth from knowledge (Langrish et al.)	1972	Queen's Awards for technical innovation
4	Project Sappho (Rothwell, 1974)	1974	Success and failure factors in chemical industry
5	Von Hippel, E. (1976)	1976	The dominant role of users in the scientific instrument innovation process.
6	Stanford study (Madidique and Zirger)	1984	Success factors in US electronics industry
7	Minnesota Studies (Van de Ven)	1989	14 case studies of innovations
8	Rothwell	1992	25 yr review of studies
9	Sources of innovation (Wheelwright and Clark)	1992	Different levels of user involvement
10	MIT studies (Utterback)	1994	5 major industry-level cases
11	Project NEWPROD (Cooper)	1999	Longitudinal survey of success and failure in new products
12	Radical innovation (Leifer)	2000	Review of mature businesses
13	Christensen C M	2000	The innovator's dilemma
14	T.U.Delft study (Van der Panne et al.)	2003	A major literature review of success and failure factors.
15	Chesbrough	2003	Open innovation systems along the supply chain

Sources: *Van der Panne et al. (2003) and Trott (2005)*

The key studies in innovation management are presented in Table 4.2. It is the belief of the author that successful innovators encourage creative thinking and turn ideas into commercially viable products or services. Innovation can therefore be managed just like any other business discipline. Table 4.1 shows a historical discourse of innovation studies and this was initially adopted as a literature base for this chapter. The literature survey suggests that a firm's ability to successfully develop innovative new products is not only the result of public and private investments in tangibles and intangibles by individual elements in the economy, but that it is also strongly influenced by the character and intensity of the interactions between the elements of the system (see Figure 1.1, Chapter 1: Innovation systems and firm performance model).

This position is strongly advocated in the literature on “National Innovation Systems” by Freeman (1982), Lundvall (1992) and Nelson (1993). With this view, innovation and technological development in particular, depend increasingly on the ability to utilise new knowledge produced elsewhere and to combine this with knowledge already available in the economy and its actors. The capacity to absorb new knowledge, to transfer and diffuse knowledge, and the ability to learn through interaction are crucial success factors in innovation according to Cohen and Levinthal (1989) and Chesbrough (2003). New and commercially useful knowledge is not only the result of the conscious action of creative individuals; it is also the outcome of the interaction and learning processes among various actors in innovation systems, (i.e. producers, users, suppliers, public authorities, and scientific institutions), which David and Foray (1995) describe as the “knowledge distribution power” of the innovation system. The need for connectivity and the complexity of the interactions this entails therefore emerges as a major factor influencing the management of innovation. The development of network theory and network models of innovation have helped to illustrate further the prominence now given to internal and external networks within the innovation process (Dhanaraj and Parkhe, 2006; Parkhe et al., 2006). All these knowledge flows contribute to the wealth of knowledge held by the organisation (Woolgar et al., 1998; Rothwell, 1992; Major and Cordey-Hayes, 2002).

More recently, Chesbrough (2003) adopting a business strategy perspective, presents a persuasive argument that the process of innovation has shifted from one of closed systems (internal to the firm), to a new mode of open systems (involving a range of players distributed up and down the supply chain). Critics may argue that network models of innovation that emphasise external linkages have been around for many years (Taguchi and Nonaka, 1995; Trott, 1995; 2005). Significantly however, it is Chesbrough’ emphasis on the new knowledge-based economy that informs the concept “open innovation”. In particular it is the use of cheap and

instant information flows which places even more emphasis on the linkages, and relationships of firms. It is from these linkages and the supply chain in particular, that firms have to ensure that they have the capability to fully capture and utilise ideas. Furthermore, the product innovation literature, in applying the open innovation paradigm, has recently been debating the strengths and limitations of so called 'user toolkits' which seem to ratchet up further this drive to externalise the firm's capabilities to capture innovation opportunities (von Hippel, 2001).

4. 10 A REVIEW OF MODELS OF INNOVATION

The fundamental question for innovation research is to explain how firms develop innovative solutions in the form of products, processes and services. For many years this was seen as impossible to do, indeed it was viewed as a random phenomenon or "manna from heaven". In his early works, Joseph Schumpeter (1934) rejected this view and argued that innovation had three main aspects:

A high level of uncertainty;

The need to move quickly, to reap potential economic reward; and

Recognised the inherent resistance to new things.

This early view of innovation is sometimes referred to as Schumpeter Mark I. At this stage there is a clear emphasis and recognition of the need of the entrepreneur to fight numerous battles: the battle to get investors and secure their backing; the battle with competitors; and the battle to convince equivocal customers. Significantly, as models of innovation have developed over the twentieth century, the need to fight and battle seems to have been overshadowed by a growing list of factors deemed necessary for innovation to occur (Rothwell, 1992; Van der Panne, 2003). However, this misses the point about human involvement, and in particular the dynamic and crucial role of the entrepreneur. This study illustrates that firm innovation success

today continues to be dependent on the battling activities of the entrepreneur, and these need to be central in any model of firm innovation.

Today, we recognise how different theoretical perspectives can shed light on different aspects of firm innovation, hence the growth in cross-disciplinary approaches to the study of innovation. (Evidence of this is provided by the research undertaken over the past thirty years at the Science Policy Research Unit, SPRU at the University of Sussex). In terms of developing understanding at the level of the firm, it is the research activities of business schools around the world that have added value. Traditional economics treated innovation as an activity that had inputs and outputs, and it was these that formed the basis of their studies. Hence, the focus on investment, allocation of resources, patents and profits – all easily quantifiable attributes. Indeed, until the 1960s, research focused on attempting to assess how much money needed to be spent on Research and Development to encourage innovation and what was its impact. In 1963, industrialised countries followed the US National Science Foundation and adopted the Frascati manual which offered helpful guidelines to facilitate measurements of science and technology (Godin, 2003).

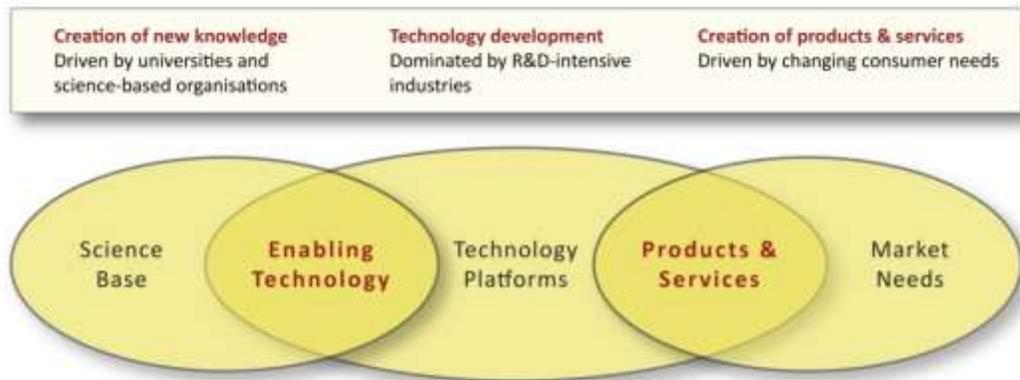
Since then, largely because of its simplicity, this model has taken a firm grip on people's views on how innovation occurs. It is a linear model because there is a well-defined set of stages that innovations are assumed to pass through. Indeed, even the so-called 'open innovation' model of innovation essentially describes a linear process from research and development to marketing, with the innovation process being a funnel that begins with scientific research and progresses (linearly) via technological and product development to the market (Chesbrough, 2003). The problem with this view is that it generalizes a chain of causation that research only suggests for a minority of innovations, and it ignores the many feedback loops that occur between the various stages of the process (Kline and Rosenberg, 1986).

It was not until the 1980s that management schools around the world seriously began to challenge the sequential linear process. The recognition is that innovation occurs through the interaction of the science base (dominated by universities and industry), the technological base (dominated by Research and Development-intensive industry), and the needs of the market (dominated by innovative firms) was a significant step forward (see Figure 4.2) - and the explanation of the interaction of these activities forms the basis of contemporary models of innovation. However, there is of course much debate and contemporary disagreement about precisely what activities influence innovation (and, more importantly, the internal processes that affect a company's ability to innovate).

The interactive model emphasises that innovations occur as the result of the interaction of the market place, the science base and the organisation's capabilities (Figure 4.3). The use of information flows is used to explain how innovations emerge and how they can arise from a wide variety of points. Consequently, the overall innovation process can be thought of as a complex set of communication paths whereby knowledge is transferred. These paths include internal and external linkages. The generation of ideas is shown to be dependent upon inputs from three basic components (as outlined in Figure 4.3): organisation capabilities, the needs of the market place and the science and technology base (Bessant et al., 2000; Katz, 2002).

FIGURE 4.3

CONCEPTUAL CHAIN OF KNOWLEDGE FLOWS WITHIN INNOVATION



Source: *Innovation Management and New Product Development* (P. Trott, 2005)

According to Berkhout (2006) innovation is more than just a technical invention: economic, social and cultural aspects are often decisive. He goes on to argue that innovation is a symbiosis of these components. The preceding discussions also show that innovation is not a singular event, but a series of activities that are linked in some way to the others. This may be described as a process according to Kelly and Kranzberg (1978), and involves:

- i. A response to either a need or an opportunity that is context dependent;
- ii. A creative effort which, if successful, results in the introduction of novelty; and
- iii. The need for further changes.

The recognised complexity of the innovation process not only makes it difficult to manage, explain and study, but also presents problems for the development of a generalised model.

It is clear then that the innovation process is complex and full of uncertainties, which combine to make innovation a risky investment. However, the level of risk correlates to the level of improvement or change required. Scientists and engineers know they can improve the performance of virtually all existing products. The difficulty lies in the cost of achieving that improvement and also whether the market is willing to pay for that improvement. Furthermore, the process is dependent on information and knowledge flows, and it is this concept in particular which is a cornerstone of all models of innovation (Adams et al., 2006). It is also applicable to large and small firms alike (Berry and Taggart, 1994). This process is no different in Kuwait, as the next section shows.

4.11 INNOVATION AS A DRIVER OF ECONOMIC GROWTH IN KUWAIT

An economic policy seeks to alter the structural conditions of a country's economy so as to create new opportunities for national economic development. Development is based upon two basic inseparable principles – economic growth and social development. Economic indicators show that the Kuwaiti economy recently witnessed a significant resurgence, because of the important and well-documented developments in the world's energy markets.

Kuwait posted huge, fiscal surpluses, reaching 5.2 billion dinars in the financial year 2006/2007, and 5.80 billion in the financial year 2008/2009. These developments have been reflected in the overall performance of the national economy, through a strengthening of economic activity rates in both the oil and non-oil sectors. As a result of this resurgence, average levels of personal income have improved from 4,902 dinars in 2002 to around 11,000 dinars in 2009, adding impetus to support the policies of economic prosperity initiated more than three decades ago.

These huge surpluses also allowed important initiatives to be taken by the State institutions, initiatives which are likely to have positive effects on

growth for the future. These were epitomised by the efforts exerted by the Supreme Council for Planning and Development in laying down the foundations for indicative, developmental planning. A clear vision of growth for the State was drawn up, reflecting first and foremost the basic requirements outlined in His Highness the Amir's directives and aspirations, and specifying this vision's strategic goals thereby became the basis for the current growth plan. By virtue of these reforming initiatives, and in light of the recent favourable economic conditions, it was possible to lay firm foundations which will enable the Kuwaiti economy to diversify its product base and enhance its competitive capabilities. In starting to transform the State of Kuwait into a regional, commercial and financial centre, this will pave the way for a permanent launch-pad for the development of the economy and society as a whole. These ambitions exist, especially in light of the rapid development of neighbouring states in the area, and in the context of untapped, social and economic development options, as the speed with which high rates of economic growth were achieved in previous years was not matched by similar growth in social and economic sectors.

4.11.1 THE GROWTH OF KUWAITI GROSS DOMESTIC PRODUCT

The State of Kuwait benefited from the price rises in the world's oil markets during 2008 and this led to an increase in GDP. However, as Table 4.3 shows comparative growth rates in the oil sector were substantially higher than in the non-oil sectors over both periods (2002 – 2006 and 2006 – 2009). The data and reports produced by the Kuwait Central Statistics Office (2009), the Arab Planning Institute and the National Bank of Kuwait all suggest that the continuing dependence on the oil sector to drive economic activity represents a major challenge, and Kuwait should endeavour to gradually reduce this dependence by promoting growth strategies in the non-oil sectors.

TABLE 4.3**SECTORAL GROWTH RATES IN GDP (2002-2006) AND (2006 – 2009)***

Sector	Nominal rate	
	Growth %	
Oil Sector:	(2002 – 2006)	(2006 – 2009)
Production of Crude and natural Gas	37.6	39.7
Manufacture of Refined products	28.3	27.3
Total Oil Sectors:	36.7	42
Non Oil Sectors:		
Financial services, Property, Work services	27.0	31
Society, Social and Personal services	8.2	7.3
Wholesale and Retail Trading, Restaurants/Hotels	7.5	9.1
Transport, Storage and Communication	24.4	23.3
Transferable Manufacture	14.4	10.2
Building-Construction	11.4	15.2
Electricity, Gas and Water	5.2	6.7
Agriculture, Livestock and Fishing	5.7	5.2
Total Non-Oil Sectors:	15.9	17.3
GDP at Purchaser's Price:	25.5	27.8

SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

Only the financial services, property and work services posted growth rates remotely close to those evinced in the oil sector, indicating that Kuwait has become evermore dependent upon the oil sector as a driver of growth and development. For innovation to be successful the dependence on the oil sector needs to be reduced and enhanced growth in the non-oil sector becomes necessary. Linked to this is the role of the private sector in fomenting such growth and by extension, innovation.

4.11.2 THE PRIVATE SECTOR, GDP AND INNOVATION

For the purposes of growth, the increase in the level of participation of the private sector in economic activity is considered as one of the most important indicators of an economy's dynamism and development. The

private sector, in its effort to maximise profit, makes use of creativity, inventiveness and innovation to meet market demands. When the role of the private sector is enlarged, it leads to the public sector relinquishing its role as the dominant force in economic activity, transforming its role to that of a regulator and a monitor (and a provider of a limited group of basic non-profit making services which the private sector fails to provide).

Although results indicate that the private sector's participation in GDP fell during 2002-2009 (from 37% to 30%, averaging 33% - as in Table 4.4), this is explained by the sharp growth in the oil sector over this period. If, however the oil sector is excluded, the importance of the private sector has been growing in recent years and it now accounts for almost two-thirds of non-oil GDP generation (Table 4.4). The rate of growth of the private sector during the last five years was not unexceptional (17.8 % annual rate of growth on average), and offers hope that private entrepreneurs have the capacity to drive growth and sponsor innovation in the Kuwaiti case.

With regard to the sectoral split within the activities of the private sector (Figure 4.4), 48% of activity is focused on three principal sectors: finance, insurance and real estate, and work services (which may be regarded as a start-point for transforming Kuwait into a regional financial centre). The transport and communications sectors represent only 10.6% of the total contribution to GDP of the private sector, an issue that needs to be reconsidered if these sectors are to make a more effective contribution in transforming Kuwait into a major commercial centre. The remaining private sector activities also remain small, transferable industries including the private oil industry, for example, represented only 9.3% of private sector output during the period, a result of the dominance of the public sector and the absence of sufficient incentives offered to the private sector in this important area of commercial activity.

TABLE 4.4

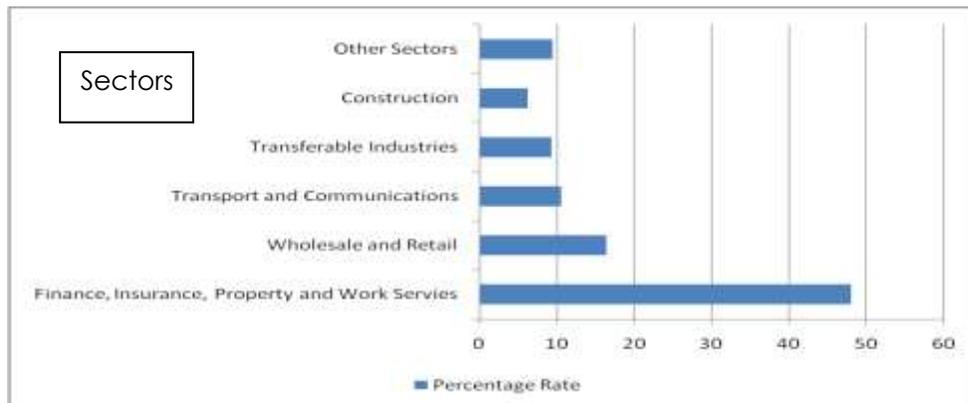
PUBLIC AND PRIVATE SHARE OF GDP, AT CURRENT PRICES, FOR THE PERIOD (2002-2009)

Sectors	Relative Importance in GDP for the period (%)	Rate of Annual Growth for the Period (%)
Public sector	67	25.4
Private sector	33	17.8
	100	23.5

SOURCE: based on data obtained from:
 Arab Planning Institute (API) <http://www.arab-api.org>
 National Bank of Kuwait (<http://www.nbk.com>)
 Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

FIGURE 4.4

SECTORIAL DISTRIBUTION OF THE PRIVATE SECTOR OUTPUT (2002-2006)



SOURCE: based on data obtained from: Arab Planning Institute (API) <http://www.arab-api.org>

4.11.3 SCALE OF INVESTMENT NECESSARY FOR INNOVATION

Recent years have witnessed a significant rise in total capital formation as a result of expenditure increases on investment projects - whether by

government or the private sector. Overall, and as is evident from Table 4.5, expenditure on total capital formation registered an annual growth of 22% on average (2002-2008). The value of capital expenditure more than doubled in less than six years, to reach around 5,302 million dinars in 2008. These indicators confirm a state of recovery in investor confidence in the economy, and the Kuwait Central Statistics Office (2009) recorded increasing levels of demand for expatriate workers (non-domestic).

The private sector's share of total investments reached 45% on average during the period 2002-2006 (40% 2002 and 46% in 2006). On analyzing the components of private sector activity, the Kuwait Central Statistics Office (2009) found that 80% of total private investment was directed at only two sectors; the finance, insurance, real estate and work services sector (45% of investment), and the transportation and communications sector (35% of private sector investment).

TABLE 4.5

TOTAL CAPITAL FORMATION (2002-2008) AT CURRENT PRICES

Period	Value of Total Formation Capital (million dinars)	Percentage Annual Growth
2002	1,985.1	--
2003	2,373.2	19.6
2004	3,185.5	34.2
2005	3,876.7	21.7
2006	4,366.4	12.6
2007	4,824.8	10.4
2008	5,301.3	10
Average for the Period 2002-2008		16.34

SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) *Statistical Review – Department of Publications and Dissemination.*

Despite these positive developments, there are still some negative, structural phenomena. Amongst the most important is the continued dominance of final consumption in GDP. Table 4.5 and Figure 4.5 outline that the relative importance of capital formation remained relatively constant during 2002-2008, averaging around 16.86% (as opposed to around 55.75% for final consumption). These percentages are low when measured against international criteria, and could have a negative impact on the future growth of the local economy.

TABLE 4.6

RELATIVE IMPORTANCE OF CAPITAL FORMATION IN GDP (COMPARED WITH OTHER EXPENDITURE) AT CURRENT PRICES (2002-2008)

Type of Expenditure/Relative Importance %	2002	2003	2004	2005	2006	2007	2008	Average for the Period
Final Consumption	74.9	65.7	57.3	47.9	43.2	47.6	53.7	55.75
Formation Total Capital	17.1	16.6	18.2	16.4	15.2	18.7	15.8	16.86
Exports of Goods and Services	44.6	52.1	56.9	64.0	66.5	60.9	65.7	58.67
Imports of Goods and Services	36.6	34.5	32.4	28.3	24.9	28.7	29.3	30.67
Expenditure on GDP	100	100	100	100	100	100	100	100

SOURCE: based on data obtained from:

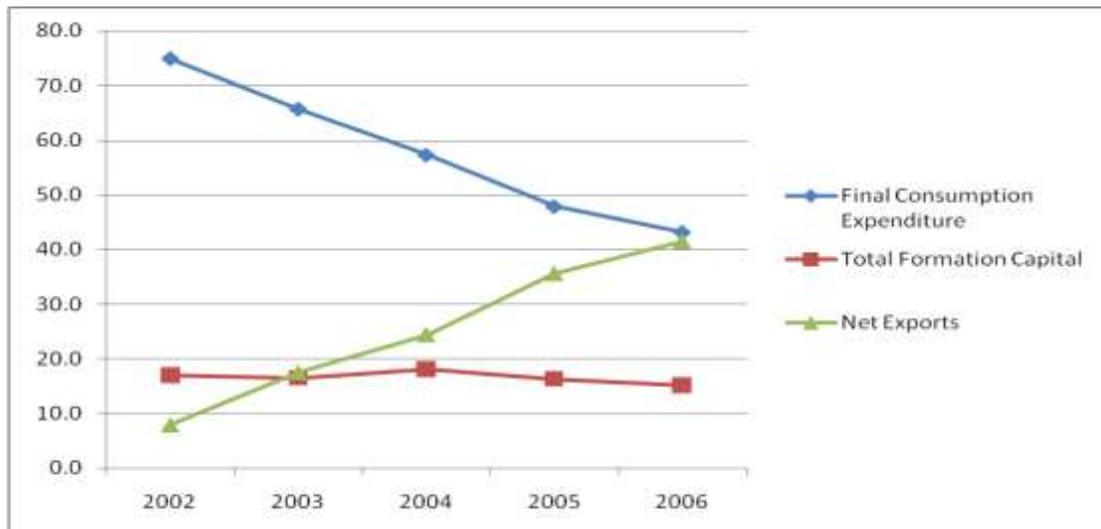
Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

FIGURE 4.5

EXPENDITURE ON GDP



SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

Data provided by the Kuwait Central Statistics Office (2009) suggest that a mismatch between consumption and capital formation is one of the phenomena which Kuwait aims to deal with within its current development strategy. This will be done through a series of initiatives aimed at raising the ability of the national economy to absorb a larger part of its savings (as a large proportion of this is currently invested outside the geographical boundaries of Kuwait by the Kuwait Investment Authority).

In this context, identifying metrics of innovation to better promote domestic growth and development becomes paramount. It is no good simply stating greater domestic investment/capital formation is necessary without assessing whether such investment can be effectively absorbed. Quality data and relevant and timely innovation metrics enhance public understanding, help policy-makers benchmark innovation performance and improve policymaking and business strategies, and also provide for the better utilisation of domestic savings.

4.11.4 THE GROWTH OF GROSS DOMESTIC PRODUCT (GDP)

The State of Kuwait benefited from the price rises in the World's oil markets and, at current prices, the average annual change in GDP reached 25.5% during the period from 2002 until 2006. An examination of this change in GDP makes it clear that the rate of growth varied, rising from 23% in 2003, 22.8% in 2004 and 54.7% in 2005 before falling back to around 21.5% in 2006.

The oil sectors (production of crude oil and natural gas and the manufacture of refined oil products) grew most in recent years. Having fallen in 2002, the rate of growth rose from 32% in 2003 to 50% in 2005 before dropping to 27% in 2006. As for the value added from the entirety of the non-oil sectors, the rates of growth varied during these years. The average rate of annual growth in the non-oil sectors (15.9%) represented only half the average rate of growth in the oil sectors (36.9%). This is attributable to the

rise in oil prices during this period, and an increase in the quantities of crude oil produced (and the quantities of refined oil products exported).

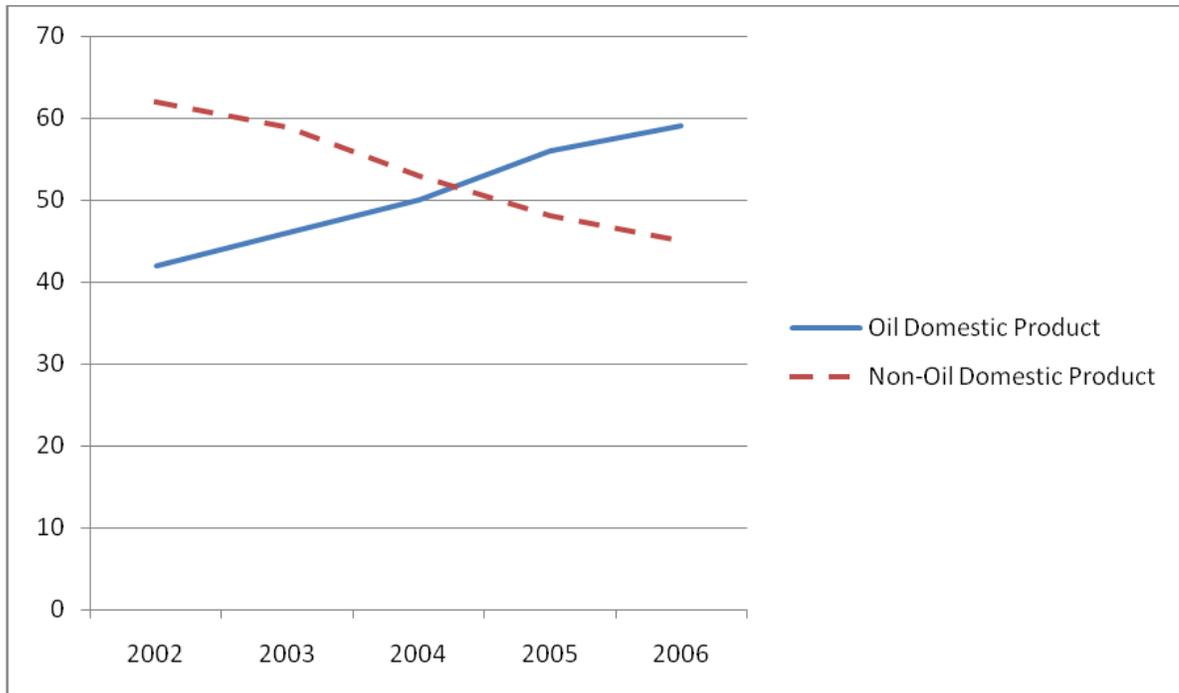
TABLE 4.7

DEVELOPMENT OF THE STRUCTURE OF GDP SECTOR (2002-2006)

Sector	Nominal Growth rate	Relative Importation rate to overall Product %
<u>Oil Sector:</u>		
Production of Crude and natural Gas	37.6	46
Manufacture of Refined products	28.3	4
Total Oil Sectors:	36.7	50
<u>Non Oil Sectors:</u>		
Financial services, Property, Work services	27.0	17
Society, Social and Personal services	8.2	15
Wholesale and Retail Trading, Restaurants/Hotels	7.5	5.5
Transport, Storage and Communication	24.4	5
Transferable Manufacture	14.4	3.6
Building-Construction	11.4	2.0
Electricity, Gas and Water	5.2	1.5
Agriculture, Livestock and Fishing	5.7	0.4
Total Non-Oil Sectors:	15.9	50
<u>GDP at Purchaser's Price:</u>	25.5	100

SOURCE: based on data obtained from: Arab Planning Institute (API) <http://www.arab-api.org>

FIGURE 4.6
OIL/NON-OIL DOMESTIC PRODUCT



SOURCE: based on data obtained from: Arab Planning Institute (API) <http://www.arab-api.org>
National Bank of Kuwait (<http://www.nbk.com>)
Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

The continuing dependence on the oil sector to drive economic activity represents a big challenge which Kuwait is endeavouring to gradually overcome via its growth programmes for the forthcoming period; diversifying the economy's production base in a way that reduces this dependency in the future is considered to be Kuwait's primary, strategic aim. It is also considered to be one of the components for achieving a future vision for the State of Kuwait by transforming it into a regional, commercial and financial centre which is at the forefront of innovative activity.

4.11.5 THE PRIVATE SECTOR, GDP AND INNOVATION

For the purposes of growth, the increase in the level of participation of the private sector in economic activity is considered as one of the most important indicators of an economy's dynamism and development. The private sector, in its striving to maximise profit, makes use of creativity, inventiveness and innovation to meet market requirements. When the role of the private sector is enlarged, it leads to the public sector relinquishing its role as the dominant force in economic activity, and transforming its role to that of a regulator and a monitor (and a provider of a limited group of basic non-profit making services which the private sector fails to provide).

Although results indicate that the private sector's participation in GDP fell during 2002-2006 (from 37% in 2002 to 31% in 2006). Nevertheless, the rate of growth of the private sector during the last five years was good (20% annual rate of growth on average).

TABLE 4.8

PUBLIC AND PRIVATE SHARE OF GDP, AT CURRENT PRICES, FOR THE PERIOD (2002-2006)

Sectors	Rate of relative Importance in GDP for the period %	Rate of Annual Growth for the Period %
Public sector	67	28.4
Private sector	33	19.8
GDP at the purchaser's cost	100	25.5

SOURCE: based on data obtained from:

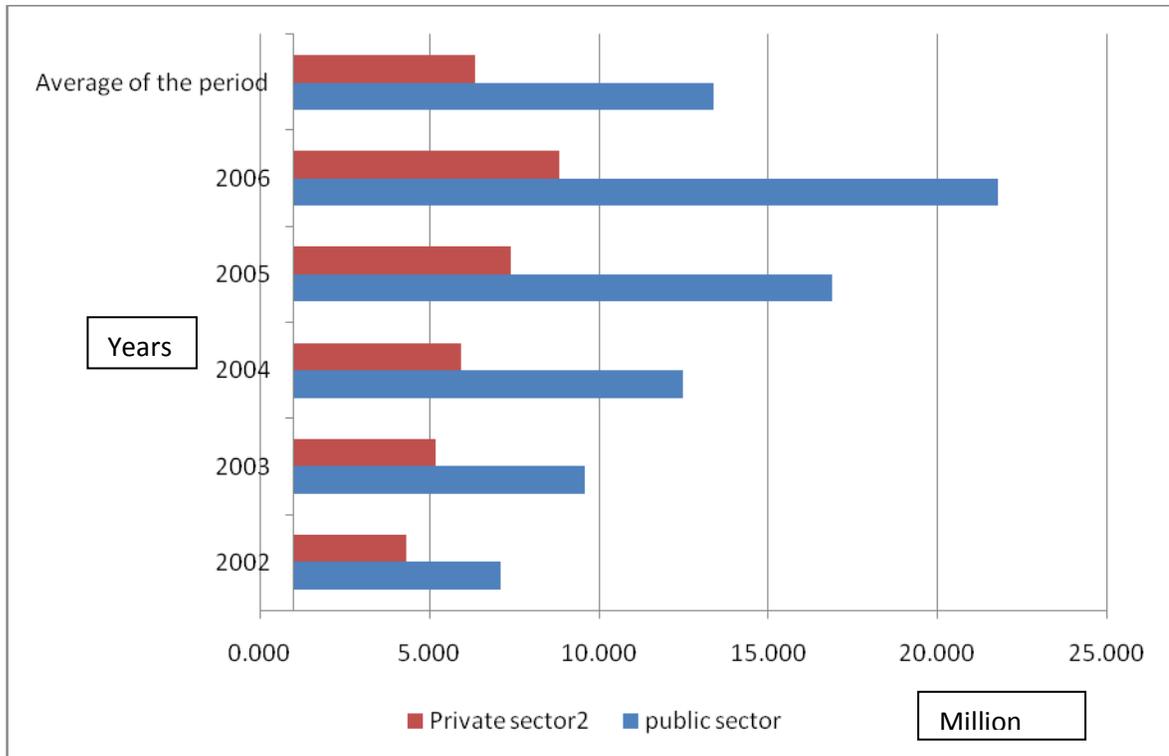
Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

The disparity between the recorded rate of growth of the private sector on the one hand and the noticeable drop of its relative share of GDP on the other can be observed from Table 4.8 and Figure 4.7.

FIGURE 4.7
COMPARATIVE RATES OF GROWTH FOR (2002-2006)



SOURCE: based on data obtained from:
 Arab Planning Institute (API) <http://www.arab-api.org>
 National Bank of Kuwait (<http://www.nbk.com>)
 Kuwait Central Statistics Office (2009) *Statistical Review – Department of Publications and Dissemination.*

The reason is that the hike in World oil prices during this period was unmatched by a similar rate of growth in the output of the private sector. However, when one excludes oil, the private sector’s contribution to non-oil GDP reached 59% on average during the same period (Table 4.9 and Figure 4.8). While the output value of the Kuwaiti private sector comes close to 4.3 billion dinars (which represents 56% of the non-oil GDP in 2002), it rose to close on 8.9 billion dinars by 2006 (62% of the non-oil GDP), that is to say more than double its value of 2002.

TABLE 4.9

RELATIVE SHARE OF THE PRIVATE SECTOR OF NON-OIL GDP

Economic classification	2002	2003	2004	2005	2006	Average for the Period
Non-Oil Public sector (millions of dinars)	3,329.4	3,754.2	4,301.7	4,814.8	5,324.6	4,304.9
Private Sector (millions of dinars)	4,313	5,193	5,955	7,424	8,865	6,350
Non-oil GDP (millions of dinars)	7,642.4	8,947.2	10,257	12,239	14,190	10,654.9
Percentage share of the Private sector in non-oil GDP (%)	56	58	58	61	62	59

SOURCE: based on data obtained from:

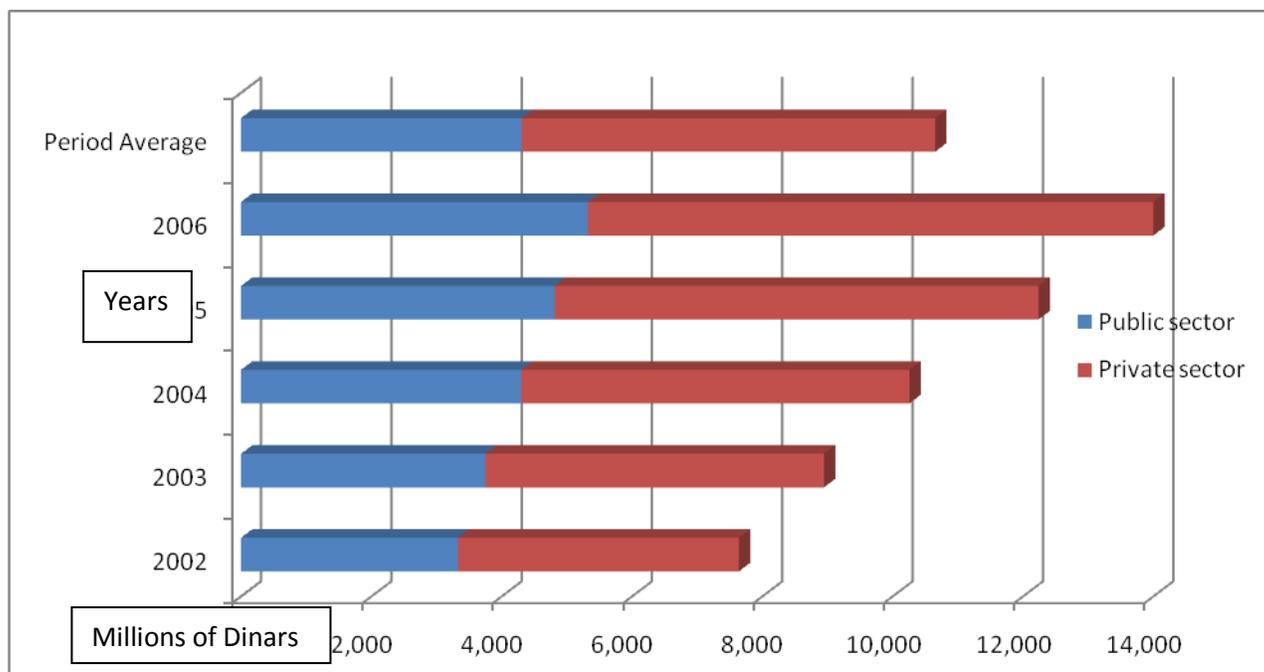
Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

FIGURE 4.8

PRIVATE SECTOR'S SHARE OF NON-OIL GDP FOR THE PERIOD 2002-2006



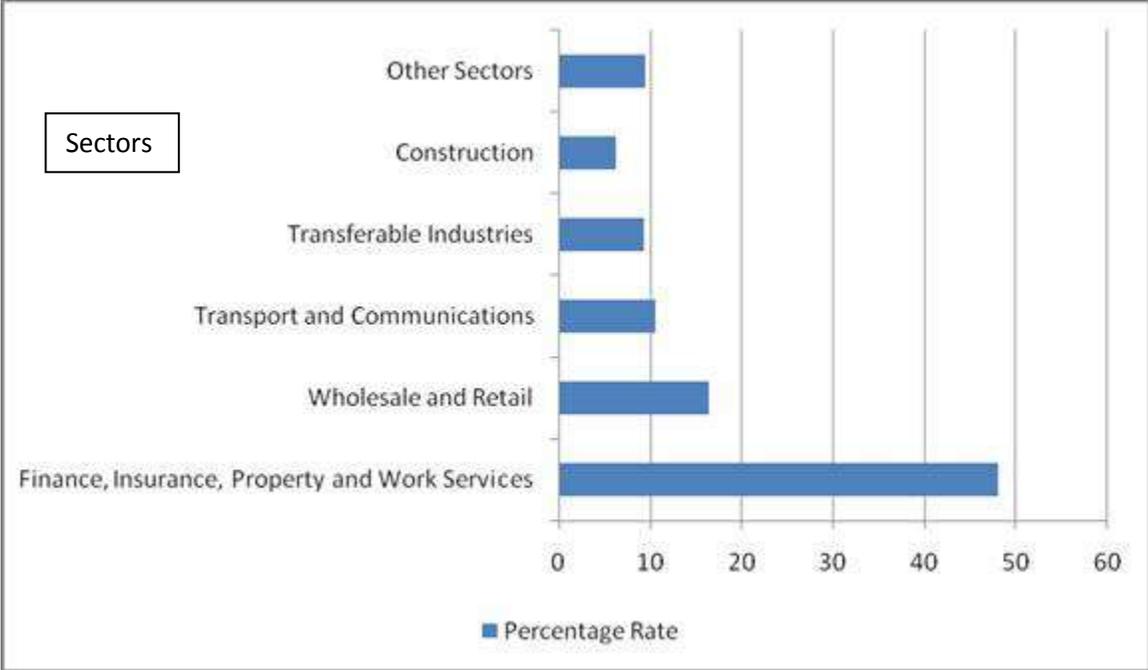
SOURCE: based on data obtained from:
Arab Planning Institute (API) <http://www.arab-api.org>
National Bank of Kuwait (<http://www.nbk.com>)
Kuwait Central Statistics Office (2009) *Statistical Review – Department of Publications and Dissemination*.

With regard to the sector split within the activities of the private sector, 48% of activity is focused on three principal sectors: finance, insurance and real estate, and work services (which may be regarded as a start-point for transforming Kuwait into a regional financial centre). The transport and communications sectors represent only 10.6% of the total contribution to GDP of the private sector, an issue that needs to be addressed quickly if these sectors are to make a more effective contribution to providing the basic components necessary for transforming Kuwait into a major commercial centre. The remaining private sector activities also remain small - Transferable industries - including the private oil industry -for example, represented only 9.3% of private sector output during the period 2002-2006 (Figure 4.9), a result of the total dominance of the public sector

and the absence of sufficient incentives offered to the private sector in this important area of commercial activity.

FIGURE 4.9

SECTOR DISTRIBUTION OF THE PRIVATE SECTOR OUTPUT



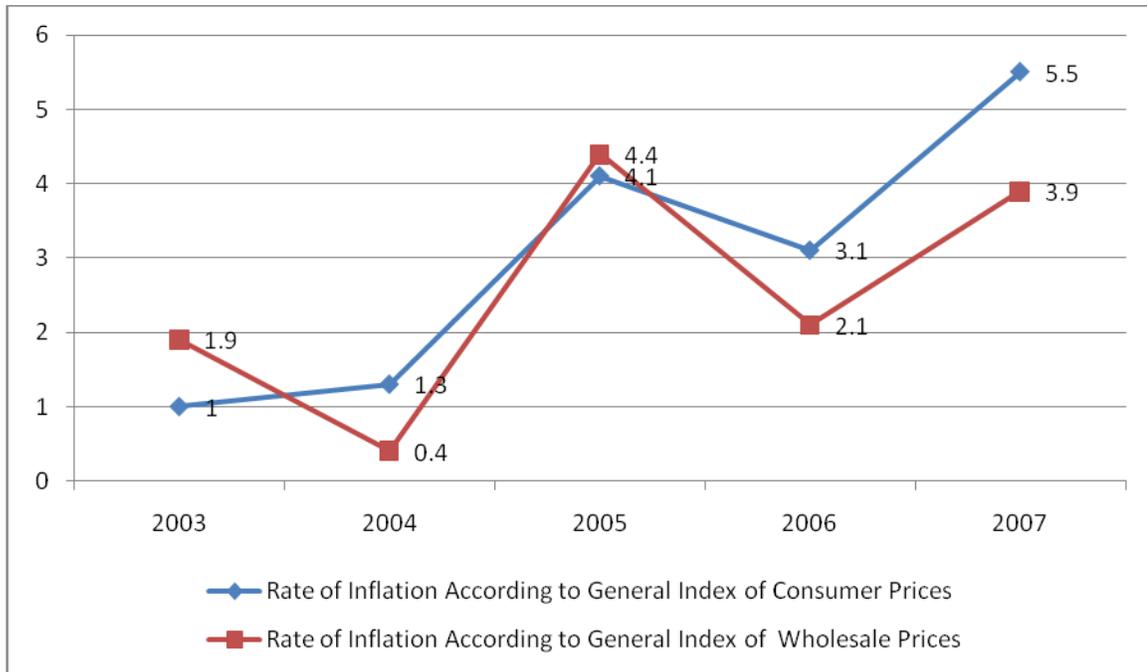
SOURCE: based on data obtained from:
Arab Planning Institute (API) <http://www.arab-api.org>
National Bank of Kuwait (<http://www.nbk.com>)
Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

4.11.6 INFLATION

The inflation rate in Kuwait is estimated to be around 4.5%. This has increased over the past 5 years and also from 2002 till 2007. Figure 4.10 shows the changes in inflation measured in terms of consumer prices and wholesale prices.

FIGURE 4.10

DEVELOPMENT OF INFLATION RATE 2002-2007



SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

4.11.7 SCALE OF INVESTMENT NECESSARY FOR INNOVATION

Recent years have witnessed a significant rise in the mode of expenditure on total formation capital as a result of expenditure increases on investment projects - whether by government or the private sector. The private sector's share of total investments reached 45% on average during the period 2002-2006 (40% 2002 and 46% in 2006). On analyzing the components of private sector activity, it is clear that 80% of total private investment was directed at only two sectors; the finance, insurance, real estate and work services sector (45% of investment), and the transportation and communications sector (35% of private sector investment).

Overall, and as is evident from Table 4.10, expenditure on total State capital formation registered an annual growth of 22% on average (2002-2006). The

value of capital expenditure doubled in less than four years, to reach around 4,366 million dinars in 2006. These indicators confirm a state of recovery in investors' confidence in the economy, and we can now observe that the recorded levels of demand for expatriate workers (non-domestic) increased during the past three years.

TABLE 4.10
DEVELOPMENT OF TOTAL FORMATION CAPITAL (2002-2006) AT CURRENT PRICES

Period	Value of Total Formation Capital (million dinars)	Percentage Annual Growth
2002	1,985.1	--
2003	2,373.2	19.6
2004	3,185.5	34.2
2005	3,876.7	21.7
2006	4,366.4	12.6
Average for the Period 2002-2006	3,157.4	22.0

SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) *Statistical Review – Department of Publications and Dissemination*

Despite these positive developments, there are still some negative, structural phenomena. Amongst the most important is the continued dominance of final consumption in GDP. Table 4.11 and Figure 4.11 outline that the relative importance of capital formation did not rise during 2002-2006, recording an average of around 16.5% (as opposed to around 55% for final consumption). These percentages are low when measured against international criteria, and could have a negative impact for the future growth of the local economy.

TABLE 4.11

**DEVELOPMENT OF THE RELATIVE IMPORTANCE OF FORMATION CAPITAL
IN GDP (COMPARED WITH THE RATES OF OTHER EXPENDITURE) AT
CURRENT PRICES FOR (2002-2006)**

Type of Expenditure/Relative Importance %	2002	2003	2004	2005	2006	Average for the Period
Final Consumption	74.9	65.7	57.3	47.9	43.2	54.1
Formation Total Capital	17.1	16.6	18.2	16.4	15.2	16.5
Exports of Goods and Services	44.6	52.1	56.9	64.0	66.5	59.3
Imports of Goods and Services	36.6	34.5	32.4	28.3	24.9	29.9
Expenditure on GDP	100	100	100	100	100	100

SOURCE: based on data obtained from:

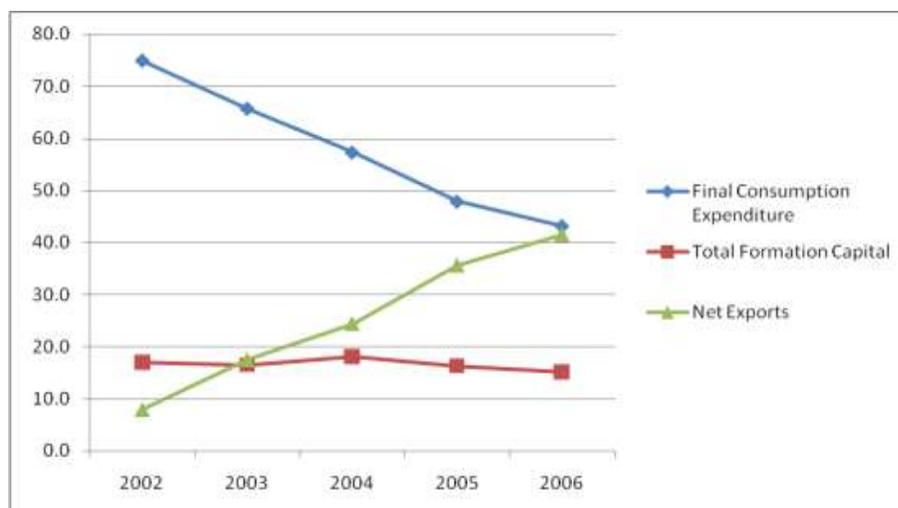
Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

FIGURE 4.11

EXPENDITURE ON GDP



SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

This mismatch in the relative relationship between consumption and capital formation is one of the phenomena which Kuwait aims to deal with within its development strategy. This will be done through a series of initiatives aimed at raising the ability of the national economy to absorb the largest part of savings capacity a large proportion of which is currently invested outside the geographical boundaries of Kuwait. Recorded results have shown that the proportion of total capital formation to net savings did not exceed 50% on average during 2002-2006.

4.11.8 FOREIGN TRADE

As is clear from Table 4.12 the rate of annual growth during this period was in the region of 38.8% (on average). On this basis, the value of exports at current prices doubled about four times between 2002 and 2006, and the proportion of exports to GDP reached approximately 59.3% (on average) during this period. In contrast imports at current prices during the same period grew at a rate of 13.9% on average (whilst the proportion of imports to GDP was around 30% on average).

TABLE 4.12

DEVELOPMENT OF FOREIGN TRADE AT CURRENT PRICES (2002-2006)

Data	2002 Value	2003 Value (Growth %)	2004 Value (Growth %)	2005 Value (Growth %)	2006 Value (Growth %)	Average Value (Growth%)
Exports of Goods and Services	5,171 -----	7,432 43.72%	9,970 34.15%	15,094 51.39%	19,038 26.13%	11,341 38.85%
Imports of Goods and Services	4,243 -----	4,917 15.88%	5,672 15.35%	6,670 17.60%	7,123 6.79%	5,725 13.91%

SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>) Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

As a result of this clear disparity in the speed of growth of exports on the one hand and imports on the other, the Kuwaiti economy was able to bolster its excellent position vis-à-vis its foreign exchange balances. The trade balance rose from 928 million dinars in 2002 to 11,915 million dinars in 2006 (5,616 million dinars on average), with crude oil representing more than 90% of total Kuwaiti exports. At the same time the contribution of other exports and re-export activities remained very modest, undermining Kuwait's desire to transform itself into a regional commercial centre. An analysis of the structure of imports confirms the modest nature of their role in supporting the Kuwaiti economy, since basically they are made up of consumer goods and various service imports. Similarly, their increase in the proportion of GDP directs revenues more towards consumer spending than towards savings and investment and generally weakens the basic productivity structure in the local economy. The first, inclusive strategic goal is to diversify the economy's productivity base, establish a competitive economy and create tangible changes in the structure of GDP.

4.12 INNOVATION CAPACITY IN THE GULF AND KUWAIT

Wilson (2010) questions whether it is possible to build sustainable innovation in oil rich countries of the Gulf that are heavily dependent on wealth from a single resource. In this regard he ascertained that each of the six Gulf States is pursuing some economic diversification strategy to move their respective economies away from hydrocarbon dependence. Wilson (2010) and Palliam (2010) are consistent in their views over diversification and suggest that any move by Gulf countries towards diversification needs responses to the questions:

Firstly, how economically viable is the diversification measured in terms of global competitiveness?

Secondly, what are the best practices and to what degree the best practices are embodied in these new diversified sectors;

Thirdly, what is the role of innovation in this regard; and

Fourthly, would Gulf economies be able to sustain new diversified sectors particularly when wealth from one leading sector is used to leverage the new diversified sector.

Innovation and whether it is sustainable impacts directly upon the international competitiveness of a country. Palliam (2010) contends that competitiveness is the key to productivity growth and goes on to define competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. Competitiveness is simultaneously driven by a combination of macroeconomic policies, a sound institutional framework, modern infrastructure and an efficient financial system to ensure an enabling business and investment climate. From this point of view Gulf countries seem to be more than adequate. However, one impediment to global competitiveness particularly of the new diversified sector is – to what extent is the economy open and accessible. Gulf countries are not homogeneous economies. However, one issue that is common is the lack of international competitiveness that emanate from several inadequacies (Wilson, 2010). In this regard Palliam (2010) critically attributes the lack of international competitiveness to inadequate institutions in the Gulf to address unnecessary bureaucracies; dysfunctional regulatory authorities; high prevalence of corrupt officials; and the low levels of innovation capacity and innovation systems as a result of a reluctance to build capacity.

To achieve best practices in any sector, particularly in a knowledge-based economy, investment in research and development is paramount. Wilson (2010) identifies the role of universities in this regard. Palliam (2003) argues that no economy can exist without a university to support and no university can exist without a good economy to sustain it. University and

economy collaboration in research and development is a result of a long history of good governance, and coherent science, technology and innovation policies. The role of educational institutions in empowering individuals (human capital) with intellectual capital is also critical. Wilson (2010) goes on to conclude that Gulf States lag dramatically behind OECD countries in terms of research and development. Within this context Wilson (2010:5) contends that “there is very little scope currently for Gulf States to become more internationally competitive with respect to innovation and knowledge fundamentals”.

To build a knowledge-based economy and society requires the development of innovation through: knowledge production; knowledge application and knowledge diffusion. Gulf States willingness and earnestness to diversify its narrow economic base are indeed the first signs of innovation and of course there are many initiatives to broaden the education base of Gulf States. Wilson (2010) cites the United Kingdom’s Department of Trade and Industry which defines a knowledge-driven economy as one in which the generation and exploitation of knowledge play the predominant part in the creation of wealth. This in essence suggests that economic success of any country depends upon knowledge creation and learning. The OECD makes an identical assertion – that the term “knowledge-based economy” results from a fuller recognition of the role of knowledge and technology in economic growth. Intellectual capital in any form (natural or artificial intelligence) has always been central to economic development. For any successful economy to sustain innovation, it must be able to produce, distribute and use knowledge more than ever before. The ability to improve the economy’s intellectual capital is indeed a source of competitive advantage.

The next related issue is how a knowledge economy measured – Knowledge Economy Index. For this purpose, Wilson (2010:6) identifies the use of a World Bank Institute Index that comprises of four pillars, namely:

Pillar One - Economic and Institutional Regime where the country's economic and institutional regime must provide incentives for the efficient use of existing and new knowledge and the flourishing of entrepreneurship.

Pillar Two - Education and Skills where citizens need education and skills that enable them to create and share, and to use it well.

Pillar Three - ICT Infrastructure where a dynamic information infrastructure is needed to facilitate the effective communication, dissemination, and processing of information.

Pillar Four – An Innovation system where the country's innovation system - firms, research centers, universities, think tanks, consultants, and other organizations - must be capable of tapping the growing stock of global knowledge, assimilating and adapting it to local needs and creating new technology.

Table 4.13 presents the rankings of the Gulf States in terms of 146 countries that constituted the sample for the World Bank Institute Index. The Knowledge Economy Index for the Gulf States is provided in the accompanying table. The ranking of Kuwait in relation to the six Gulf States is also provided.

TABLE 4.13

THE RANK OF GULF COUNTRIES AMONG 146 COUNTRIES WITH REGARD TO KNOWLEDGE ECONOMY INDEX (KEI)

Country	KEI Overall	KI Diffusion	Pillar 1 Economic	Pillar 2 Education	Pillar 3 ICT	Pillar 4 Innovation
Bahrain	49	56	48	60	40	80
Kuwait	52	59	51	76	46	70
Oman	66	79	40	86	76	71
Qatar	44	45	42	67	27	48

Saudi Arabia	68	73	58	80	52	86
UAE	45	44	47	79	21	46
Kuwait Ranking	3rd out of Six	4th out of Six	5th out of Six	2nd out of Six	4th out of Six	3rd out of Six

Source: Adapted from Wilson (2010) Is it possible to build sustainable innovation capacity in oil rich Gulf Countries? XXII ISPIIM Conference, June 12- 15, 2010 – Hamburg Germany.

Overall Kuwait's ranking 52 out of 146 country augers well for the Gulf State. However, the factors that impede the creation and diffusion of a knowledge environment need to be taken more seriously. In terms of education Kuwait ranks 2nd out of six Gulf States. This is not surprising particularly when one considers that Kuwait has a large number of foreign educational institutions offering a variety of programs. Unfortunately, most of the private educational institutions are not in the public domain. Kuwait ranking 5th out of six, needs to address its economic and institutional infrastructure where Kuwait must create incentives for the efficient use of existing and new knowledge to ensure that entrepreneurship flourishes.

Generally Gulf countries are way behind in terms of educational and innovation fundamentals compared to competitiveness of other countries. It is important that countries in the Gulf bridge the substantial gaps. Due consideration must be given to whether Gulf countries would be able to sustain their extravagance with their current wealth status and at the same time ignoring competitive innovation systems and knowledge economy fundamentals. Economic diversification encompassing sustainable innovation systems and diversification enabling an environment of national innovation ecosystems are recommended by Wilson (2010). This recommendation is consistent with what Palliam (2011) refers to as issues in Gulf Security.

4.13 RESULTS OF THE PUBLIC FINANCES

Recently Kuwait has seen significant growth in government revenues as a result of the growth in oil income. Government revenue growth exceeded

growth in government spending, and the result was a large, financial surplus which came to the fore with effect 2002/2003. The value of this surplus reached around 670 million dinars in that year. It is evident from the following table that since then the surplus has continued to increase, reaching around 5,493 million dinars in 2005/2006 before falling back to around 3,650 million dinars in 2006/2007. Based on this data, the annual average surplus was in the region of 2,457 million dinars during the period 2002/2003 – 2006/2007, with oil revenues representing the equivalent of 91.2% of the total value of public revenues. As far as expenditure is concerned (and as is evident from the data in Table 4.14), current expenditures, as compared to capital expenditures dominate. Current expenditures reached around three times that of capital expenditures on average during the period (basically due to a rise in the proportion of public sector wages, salaries and internal transfers as the government employs more than 85% of the country's indigenous workforce).

Although the current financial situation is largely satisfactory (as these huge recorded oil revenues over the past five years have largely contributed to supporting the activities of the State), the outgoings are regarded as a drain on oil wealth. The wealth is being transformed to direct government spending instead of being invested in income bearing assets (which could finance government expenditures from their returns whilst preserving the assets). Equally, the domination of oil revenues – which is considered revenue ready to disburse – has weakened the basic role of other revenue sources. For example, direct and indirect taxes have made no real contribution (>2.2%) towards financing the budget of the State at any rate during the last five years.

TABLE 4.14

DEVELOPMENT OF THE VALUES AND FRAMEWORK OF REVENUES AND PUBLIC EXPENSES (2002/2003)-(2006-2007) (VALUE IN MILLIONS)

Data	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Average
<u>Total Public Revenues</u>						
Value	6,219	6,937	8,962	13,728	15,509.23	10,271
Rate of Growth	16.5	11.6	29.19	53.17	12.97	
<u>Total Expenses</u>						
Value	4,927	5,523	6,315	6,862	10,306.36	6,787
Rate of Growth	3.8	12.1	14.35	8.658	50.2	
Surplus	670	720.7	1,751	5,493	3,651.95	2,457
<u>Relative distribution of the Public revenues Framework</u>						
Oil Revenue	88%	89%	91%	94%	94%	91%
Non-Oil revenue	12%	11%	9%	6%	7%	9%
Total Public Revenues	100%	100%	100%	100%	100%	100%
<u>Development of the Values and Relative Distribution of the Public Expenses Framework</u>						
Salaries						
Value	1,542	1,637	1,754	1,931	2,225.89	1,818
%	31.2	29.6	27.8	28.1	21.6	27.7
Commodity Necessities and Services						
Value	11.8	668.2	870.3	1058	1,372.49	910.2
%	5.82	12.1	13.8	15.5	13.4	13.3
Transport, Equipment and supplies						
Value	23.7	40.6	44.5	58.64	77.08	48.9
%	0.5	0.7	0.7	0.8	0.7	0.7
Construction and Maintenance Projects						
Value	461	569.5	678.3	750.5	989.45	689.8
%	9.4	10.3	10.7	11	9.6	10.2

Various Expenses and Transformed Payments						
Value	2,319	2,608	2,968	3,064	5,641.45	3,320
%	47.1	47.3	47	44.6	54.7	48.1
<u>Total Expenses</u>						
Value	4,927	5,523	6,315	6,862	10,306.36	6,787
%	100	100	100	100	100	100

SOURCE: based on data obtained from:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

4.14 INNOVATION IN THE COMMERCIAL AND FINANCIAL SERVICES SECTORS

Developing these two sectors represents the lynchpin if the State is to achieve its vision of transforming the country into a regional, commercial and financial centre.

The country's financial sector has witnessed quantitative and qualitative developments during the past five years. Its rates of growth have risen and its assets have clearly increased (Table 4.15). This sector basically consists of local banks, Islamic, traditional investment companies, investment funds, insurance companies and the Kuwait stock exchange. As far as banks are concerned and as is evident in the following table, the value of their assets rose significantly in recent years from about 17 billion dinars in 2002 to around 35 billion dinars at the end of 2007 (an annual percentage growth of 22% on average).

TABLE 4.15
VALUE OF LOCAL BANK AND INVESTMENT COMPANIES' ASSETS
2002-2007 (IN MILLIONS OF DINARS)

Data	2002	2003	2004	2005	2006	2007
Value of Bank Assets	17,063	18,813	19,144	21,611	26,990	35,552
(Rate of Growth)	-----	10.3%	1,8%	12.9%	24.9%	31.7%
Value of Traditional Investment Companies' Assets	3,465	4,236	4,868	6,471	7,569	9,386
(Rate of Growth)	-----	22.3%	14.9%	32.9%	17.0%	24.0%
Value of Islamic Investment Companies' Assets(Rate of Growth)	880	1,291	1,488	2,482	3,568	6,634
	-----	46.7%	15.3%	66.8%	43.8%	85.9%

SOURCE: based on data obtained from:

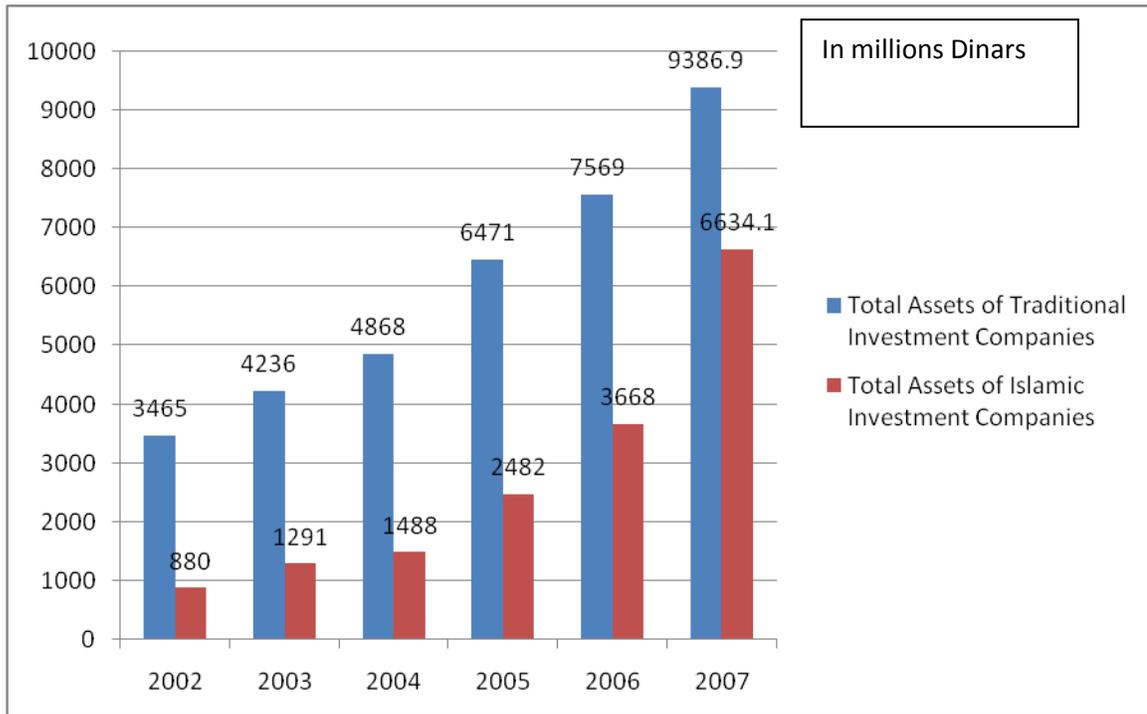
Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

Assets of investment companies registered with the Central Bank of Kuwait also enjoyed a huge rise for the period 2002-2007, from around 3.5 billion dinars to reach approximately 16 billion dinars (51% of which were traditional investments and 41% Islamic investments), an annual rate of growth of 54% on average. Assets of traditional investment companies also doubled to reach 9.4 billion in 2007 whilst assets of Islamic investment companies rose six times to a figure estimated at 6.6 billion dinars (Figure 4.12).

FIGURE 4.12
ASSETS OF KUWAITI INVESTMENT COMPANIES
(TRADITIONAL AND ISLAMIC) 2002-2007



SOURCE: based on data obtained from:
 Arab Planning Institute (API) <http://www.arab-api.org>
 National Bank of Kuwait (<http://www.nbk.com>)
 Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

To complement the strong resurgence of the Kuwaiti financial sector, investment funds' assets witnessed a strong annual growth of 36% approximately during 2002-2006 (as reflected in Table 4.16). This resulted in a rise of asset values from around a billion dinars in 2002 to around 3 billion in the year 2006, with the number of investment funds increasing from 33 to 79. As for the insurance sector, despite its relatively limited capacity (compared with other countries), it also witnessed a significant growth in recent years. This can be explained as the Ministry of Commerce and Industry granted licences for the pursuance of insurance activity to several companies in 2004. During the period 2002-2006 their assets rose to 27% on average to reach almost 679 million dinars in 2006.

TABLE 4.16

**VALUE OF INVESTMENT FUND AND INSURANCE COMPANIES ASSETS
REGISTERED WITH THE CENTRAL BANK DURING THE PERIOD 2002 TO
2006 (MILLIONS OF DINARS)**

SOURCE: based on data obtained from:

Item	2002	2003	2004	2005	2006
Total Investment Fund Assets	1,016	1,686	2,342	2,868	2,843
(Rate of Growth)	-----	66%	39%	22%	-1%
Total Insurance Company Assets	326.4	385.1	411.9	469.4	678.8
(Rate of Growth)	-----	18%	7%	14%	45%

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

Kuwait Central Statistics Office (2009) Statistical Review – Department of Publications and Dissemination.

As for the Kuwait Stock Exchange, it has also witnessed clear growth in the numbers of registered companies and in its market value in recent years. The market, one of the biggest and most active in the Gulf and Arab region, had a market value reaching about 16.7 billion dinars in 2006 (6.7 billion in 2002). As evidence of the outstanding performance of the financial sector, Kuwait recently secured a risk grading of AAA, the highest valuation level given by the leading agencies of international credit classification (such as Standard and Poor's, Moodys, Capital Intelligence, the Fitsh Group and Investment Information). Despite these positive developments, growth in the financial sector and the realization of a positive rate of development in the next five years is conditional upon the sector's ability to confront the challenges which might impede future success. Kuwait has responded to this with "The Kuwait Report 2020: Transforming Kuwait into a Commercial and Financial Centre". This included 23 important initiatives for transforming the country into a specialist, regional financial centre. In this context the most important priority lies in dealing with the administrative and organizational obstacles which confront the sector, and in developing a legislative environment (including updating the legal framework for business operations, and implementing the principles of "good, organizational,

management practice”°. It also includes the establishment of the “independent body for the financial markets” which will organize and oversee the market in a way that enables Kuwait to achieve the international standards laid down by the International Commission for Financial Markets, and thereby raise the level of competition in the banking sector.

The commercial sector has continued to play a limited role in the economic activity of the State. According to the available data, the contribution of the wholesale and retail commercial sector to non-oil GDP was around 8.5% on average. Data from the Kuwait Chamber of Commerce and Industry shows that this sector recorded significant growth in value during the last two years, and resulted in a rise of expenditure which exceeded the billion dinar barrier for 2005 and 2006 (1.01 and 1.09 billion respectively). Furthermore, the wholesale and retail sector (plus restaurant and hotel operations) absorbed the largest part of the workforce in the Kuwaiti economy - the number of workers in this sector reaching around 481 thousand at the end of 2006 (which is equivalent to 45.4% of the total workforce).

These developments are a reflection of the recent rise in economic growth rates and the resultant rise of the individual’s share of GDP (due to an increase in demand for consumer goods). They are also a reflection of the availability of an independent, civil judiciary to resolve commercial disputes. In this context, Kuwait has striven in recent years for more trade openness, and for a greater strengthening of commercial relations with a number of states (both regionally and globally). In 2005 custom tariffs on imports originating from the member states of the Greater Arab Free Trade Organization were revoked and in the same year a number of bi-lateral agreements were signed with a number of states to avoid tax duplication (South Africa, South Korea, Singapore, Malaysia and Hong Kong). During this period, Kuwait also signed a general framework agreement for trade and investment with the USA as a first step towards developing free trade agreement between the two countries.

In their entirety, these measures are initial steps which will contribute towards strengthening Kuwait's strategic geographical status, allowing it to perform a pivotal role in commercial goods trade. However, facing up to the challenges which confront the commercial sector are imperative in order to achieve Kuwait's vision as a commercial centre. The most important of these challenges is in the area of logistics. The initiatives aim to achieve greater development of the commercial infrastructure; including warehousing and Customs depots, an increase in frozen storage capacity and facilities to preserve and handle perishable goods. The plan is also expected to monitor the commercial sector so as to eliminate commercial cheating and manipulation and to guarantee the protection of the consumer. The organizational and legal environment will also require form, especially the laws restricting commercial activity, the obstacles which stand in the way of issuing licenses to companies, and the full gamut of customs procedures.

4.15 RECORDED RESULTS OF KUWAIT'S COMPETITIVE ABILITY

Competitiveness is considered as one of the components for analyzing the health of an economy's performance. By using a group of indicators we can measure the degree of economic policy effectiveness and the government's capability of enabling national, economic entities or regional partnerships to resist foreign, competitive pressure within the Kuwaiti market. These indicators can also measure the ability of these economic entities to penetrate neighbouring and international markets. The latest global competition reports indicate that Kuwait's position on the business competition index - which lists the states of the World-wide report for competition - is 44 out of a total of 126 states for the year 2006-2007. Similarly Kuwait occupied the eighth position in the report of 10 states (amongst those states sampled by the National Kuwaiti Competitiveness Commission; Table 4.17) after Qatar and the Emirates. The business competition index is based on two important elements for measuring competitiveness; the competency of the companies and the quality of their strategies on the one hand (abilities of the private sector) and the extent of the quality of the business atmosphere nationally on the other.

TABLE 4.17**KUWAIT'S COMPETITIVE POSITION**

Globe Competition Index 2006-2007			Business Competition Index 2006-2007		
State	Table of Global Competition Report	Table of Sample of National Kuwaiti Competitiveness Commission	State	Table of Global Competition Report	Table of Sample of National Kuwaiti Competitiveness Commission
Singapore	5	1	Singapore	11	1
Norway	12	2	Norway	14	2
Estonia	25	3	Estonia	24	3
Emirates	32	4	Emirates	31	4
Slovenia	33	5	Slovenia	34	5
Slovakia	37	6	Slovakia	36	6
Qatar	38	7	Qatar	40	7
Kuwait	44	8	Kuwait	44	8
Cyprus	46	9	Cyprus	45	9
Bahrain	49	10	Bahrain	51	10

The State's general competition index reflects the quality level of a group of basic fundamentals for competition; a stable, economic framework, effective private and public institutions, suitable infrastructure, an educated workforce enjoying good health and opportunities for training, the competency of the markets and the ability to exploit available technological resources. In accordance with this index, Kuwait's position amongst the states listed in the world-wide report for competition is also 44 (Table 4.17) and Kuwait also occupies the eighth position amongst the sample States taken by the National Kuwaiti Competitiveness Commission after Qatar and the Emirates.

Kuwait's Competitiveness Commission also specified the strengths and weaknesses of the Kuwaiti economy based on a number of secondary indicators.

We can summarize the country's strengths vis-à-vis global competitiveness in the following table (Table 4.18).

TABLE 4.18
MOST PROMINENT STRENGTHS AND WEAKNESSES OF THE KUWAITI ECONOMY IN ACCORDANCE WITH THE INDEX OF GLOBAL COMPETITION 2006-2007

Strengths		Weakness	
Element	International Position	Element	International Position
Budget Surplus	1	Restrictions on Foreign Ownership	125
National Savings Average	1	Direct Foreign Investment and Technology Transfer	119
Extent and Effect of Taxes	4	Innovative Ability	110
Brain Drain	8	Dependence on Professional Management	102
Flexibility in Determining Salaries	9	Government purchase of technological products	100
Government Debt	10	No. of Procedures for starting a commercial operation	94
Organized Crime	12	Effectiveness of the Boardrooms	93

On the basis of these indicators the report of the Kuwaiti National Competitiveness Commission calls on the government to upgrade the proficiency of the economy, improve the infrastructure (through investment in physical capital), restructure the educational system (to improve the quality of the human resource), expand the academic and technical infrastructure (to strengthen the information resource, improve the business environment to strengthen the private sector and reinforce the business ethic) and its associated legislation (Table 4.19).

TABLE 4.19

MOST IMPORTANT GENERAL ECONOMIC POLICIES RESULTING FROM THE KUWAITI COMPETITIVENESS REPORT

General Economic Policies	Proposed Mechanisms and Initiatives
Upgrading the Proficiency of the Economy	<ol style="list-style-type: none"> 1. Limiting Bureaucracy 2. More Decentralization in Decision Making 3. Establishment of a Competent Tax System 4. Guaranteeing a higher degree of Accountability in private and public institutions 5. Guiding the use of public funds to reduce levels of waste 6. Better co-operation
Improving the Infrastructure by Investing in Physical Capital Assets	<ol style="list-style-type: none"> 1. Suitable programmes to raise the level of services so that they comply with highest standards 2. Improve port services 3. Improve communications network 4. Expand the water and electricity networks
Restructuring the Educational system to Improve the Quality of the Human Capital Resource	<ol style="list-style-type: none"> 1. Import the quality of education 2. Raise percentages of primary school enrolment 3. Improve the internal competency of the educational system 4. Improve the quality of teaching staff 5. Improve the external competency of the educational system 6. Increase the role of the private sector in education and training
Expanding the Academic and Technical Infrastructure to strengthen the information resource	<ol style="list-style-type: none"> 1. Increase National expenditure on research and development 2. Strengthen the relations between industry and academic research sectors 3. Mechanisms to increase

	<p>innovative ability</p> <p>4. Establishment of a complex for national excellence and talent</p>
Improving the Business Environment to strengthen the Private Sector	<p>1. Widen the base of economic diversification</p> <p>2. Greater dependence on market systems and participation of the private sector</p> <p>3. Development of the financial market</p> <p>4. Increase the levels of competency in business administration</p> <p>5. Guarantee greater protection of intellectual property rights</p> <p>6. Issue anti-monopoly laws</p>
Strengthening the Business Ethic and its Legislation	<p>1. Guarantee greater transparency</p> <p>2. Pass anti-corruption legislation</p> <p>3. Adopt a special anti-corruption commission</p> <p>4. Establish a special court for this purpose</p>

4.16 THE KUWAITI WORKFORCE

Recorded growth results indicate that the period 2002-2006 saw important developments at the level of the workforce. The total workforce in 2006 reached more than 1.87 million and the number of Kuwaitis in work rose to 6.7 annually on average from 258,540 employees in 2002 to 335, 238 in 2006. Women represented 51.4% of the total workforce compared with a percentage of 36.9% in 2002. The first indications showed that the formal education programmes (chapter 3) were bearing fruit. By 2002, the number of Kuwaitis holding higher and intermediate qualifications within the workforce had reached 59%. However, the overall job market is still suffering from the (continuing) concentration of Kuwaiti employees in the government sector, thereby escalating the scale of hidden unemployment. 85% of the total Kuwaiti workforces are employed in the government sector, whilst 15% approximately have made their way into the private sector. The focus and concentration of the expatriate workforce has continued to be in both the private and domestic sectors. The policy of bringing in expatriate workers shows that less than 19% hold higher and intermediate certificates, and

there has been an increase in the percentage of expatriate workers without qualifications (to around 59% of the total workforce in 2006).

The increase of an uneducated expatriate workforce puts great pressure on public services subsidized by the State, and is considered as one of the challenges which the plan will have to deal with - and is due to employers having freedom to bring in expatriate workers.

TABLE 4.20

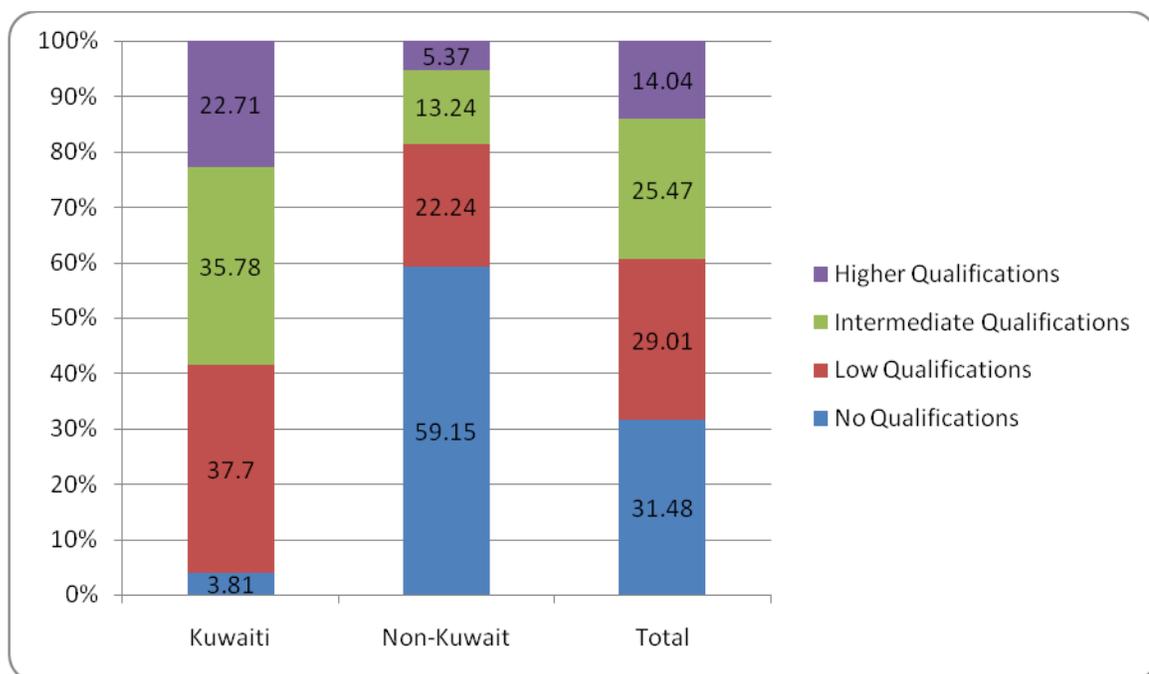
**DISTRIBUTION OF THE WORKFORCE BY ACADEMIC QUALIFICATIONS
2002-2006**

Year	Kuwaiti Workforce			Non-Kuwaiti Workforce		
	Intermediate or less	Secondary	University or Above	Intermediate	Secondary	University
2002	41%	19%	40%	77%	12%	11%
2003	40%	19%	41%	79%	12%	10%
2004	39%	20%	41%	80%	10%	9%
2005	39%	21%	40%	82%	10%	9%
2006	40%	21%	39%	81%	10%	8%

The phenomenon represents a threat to growth and deep fragmentation has emerged in the Kuwaiti job market between increasing the employment of Kuwaitis in the private sector on the one hand, and achieving minimum costs of employment for the private sector on the other.

FIGURE 4.13

THE WORKFORCE BY ACADEMIC QUALIFICATIONS-2006



In recent years the government has worked on gradually rectifying the situation by implement a number of reforms, the most prominent of which was the workforce reconstruction plan for the country. However, these reforms are of limited value, focusing as they do on the supply element of the national job market, and fail to move employment away from the traditional, government jobs. The government is determined to bolster reform by way of executive projects aimed at expanding privatization, freeing up the markets and developing the private sector to increase its ability to create more job opportunities. Also, the government aims to encourage the national workforce to take up employment in the private sector, by continuing to compel this sector to employ an increasing percentage of the national workforce.

4.17 INNOVATION AND EDUCATION

The human growth and development indicator prepared by the UN Development Programme has shown that Kuwait falls within the category of nations with high

levels of human development, and the latest reports show that Kuwait clearly exceeds that of its counterparts amongst Arab countries.

TABLE 4.21
EDUCATIONAL CHARACTERISTICS OF THE PEOPLE

Kuwaiti: K Non-Kuwaiti: N-K

Educational Level	1985		1995		2006	
	K	N-K	K	N-K	K	N-K
Above Secondary but below University	4.7%	2.4%	5.3%	2.7%	16.0%	10.2%
University and Above	5.7%	8.1%	9.3%	9.7%	7.9%	2.7%
Total:	10.4%	10.5%	14.6%	12.4%	23.9%	12.9%

Although the State has spared no effort in laying the groundwork for the success of the educational sector, as is evident from the rise in the student's average share of public expenditure on education, yet this sector continues to face a number of challenges especially at the level of internal proficiency.

The Kuwait report on competition made clear that one of the weak in the fields of Maths and applied sciences. The reason for this basically, is that the most important educational expenditure allocations are directed at the twin sectors of technical and administration. Only a small proportion of expenditure is allocated to education development research – methods of teaching, curriculum and teacher development - and these aspects are amongst the most important in the education system.

4.18 HUMAN GROWTH AND DEVELOPMENT: HEALTH INITIATIVES

As for the health sector, Kuwait during recent years has strengthened its relatively outstanding position amongst other states in the area of health service standards. Kuwait offers a basic system of health care which is considered by the standards of other Arab states to be advanced and the equivalent of what is offered in a

number of advanced industrial countries. As is made clear by Table 4.22, the period 2002-2006 witnessed more important developments on a number of indicators connected with public health and health services.

TABLE 4.22
DEVELOPMENT OF PUBLIC HEALTH AND HEALTH SERVICE INDICATORS
FROM 2002 UNTIL 2006

Public Health Indicator	2002	2003	2004	2005	2006
Expected life Span at birth of the citizens	74.95	75.36	75.02	76.87	78.02
Children under 5 death rates for every 1000 births	11.11	9.87	10.60	9.70	10.10
Infant death rates for every 1000 births	9.45	8.15	8.70	8.03	8.33
Death rates of mothers for every 1000 births	7.1	3.5	10.1	3.2	3.2
Percentage of births supervised by skilled health professionals	100%	100%	100%	100%	100%
Percentage of inhabitants who receive basic health care (improved health facilities)	100%	100%	100%	100%	100%
Doctors for every 1000 patients	1.68	1.74	1.78	1.86	1.94
Dentists for every 1000 patients	0.27	0.35	0.37	0.4	0.434

The public health indicators highlight significant developments the most important of which is that, amongst the Arabs, Kuwaitis have a longer life span. It is clear that the average anticipated life span at birth was around 78 years in 2006. This average mirrors that of advanced countries it is also clear there has been a significant drop in deaths amongst children under five, amongst suckling children and mothers. The health service indicators confirm that a 100% percentage has been maintained vis-à-vis the birth indicators and particularly those births

supervised by skillful health operators. The 100 % figure is maintained in the indicator of citizens who have received primary health care. With regards to the indicator of the number of doctors per 1000 individuals, which is considered one of the most important indicators of health service proficiency, the indicator value rose from 1.68 doctors for every 1000 persons in 2002 to 1.94 doctors per 1000 individuals in 2006. This signifies that the numbers of doctors are on the increase and that there is a gradual improvement in health service. It is worth noting that the indicator value in this case is close to the international indicators in countries where health services are of the highest quality. The indicator value for dentists per 1000 individuals in Kuwait increased from 0.27 in 2002 to 0.434 in 2006. The Ministry of Health suffers from a lack of space and a deficiency in the number of foreign clinics. This situation increases the pressure on current health resources as well as the burden on primary health care and emergency services and it is hoped to remove these difficulties in the future.

In the field of women, women's share of employment opportunities at various levels witnessed some progress. The entrusting of a Kuwaiti woman with a ministerial position for the first time in the history of the country in 2005 was the most important success story in this field. However, the percentage of women represented in leading appointments below ministerial has remained low and steady at around 5% which does not reflect the percentage of women within the government apparatus nor the percentage of those holding high qualifications.

As far as co-operatives are concerned, their number reached 49 in 2006. The number of Kuwaiti citizens participating as members in these co-operations rose to 362,061 in the same year which is roughly 35.9% of the population. This expansion of the membership base enabled the co-ops to undertake various roles and to show a high degree of flexibility in facing up to the economic changes. In the area of civil society organizations, and as is evident in the following table, the period in question witnessed a tangible improvement especially in the total number of private societies (non-governmental) from 52 in 2002 to 79 in 2006. This widespread concern reflects the importance attached to organizing the efforts of

individuals in Kuwaiti society in the service of public issues including that of growth and development.

TABLE 4.23
DEVELOPMENT OF THE CIVIL SOCIETY ORGANIZATIONS FROM 2002 TO 2006

Data	2002	2003	2004	2005	2006
Total No. of Private Societies (non-governmental)	52	52	53	75	79
No. of Charities	-	5	5	9	9
<u>Societies Concerned with Specific Social groups:</u>					
Children	3	4	4	4	6
Women	5	5	5	5	5
Specific fields (professional Societies)	15	15	15	15	15
Public Societies for the Preservation of the Environment	1	1	1	1	1
Professional Unions (Businessmen's Unions)	30	34	36	36	38

Despite some positive developments on the social level, several phenomena have emerged which are threatening the foundations and stability of Kuwaiti society and which the government trying to deal with is resolved to deal with. Amongst the most important phenomena of social challenges is the issue of increasing corruption as a socially accepted behavior and its negative impact on the structure of social values. Some indicators also point to the increasing phenomenon of breakdown in the role of the family and the resultant inconsistency in the structure of social values and to an intensity in the struggle between modern values and social inheritance. Issues of identity and problems of social violence have also

emerged. The government, through proposals for legislation, mechanisms and programmes, will strive to help in the following areas:

To encourage social cohesiveness, activate the role of the individual, provide the opportunity for individual initiatives and strengthen social units and especially that of the family;

To increase the effective action of civil society organizations and the concern for issues of childhood, women, those with special needs and the elderly;

To ascertain issues of youth concern and their social problems and dealing with issues of leisure time; stimulate voluntary work, strengthen the value of participation and spread awareness of the relationship between citizen and state; and inculcate sound, social values and principles through education.

4.19 CONCLUSION

This chapter initially considered innovation and the diffusion of innovation within Kuwait. Since innovation depends on the strength of a strong demand from consumers and citizens for newer and creative ideas and innovative products and services, creating the optimal framework and possibilities to innovate becomes paramount. In essence there must be an acceptance for an innovation friendly market. In this regard, Kuwait is in need of new commitments. Economic metrics dictate the innovation initiatives. Economic measures that preserve established structures and organizations can diminish innovation initiatives. Consequently, countries like Kuwait could render themselves incapable of coping with the economic challenges that they face in a global economy if innovation is not nurtured and supported. Economic and growth metrics were provided to present Kuwait as an economy ready for the innovation take-off. The various sectors of Kuwait must be ready to invest in structural changes as Kuwait can only become comprehensively innovative if all sectors become involved. While this broad strategy needs to engage all parties – businesses, the public sector, producers and consumers – specific innovation-enhancing initiatives need to be focused on certain sectors. It also involves “buy-in” from key stakeholders. In the ensuing

chapters, we examine the perspectives of these stakeholders on current innovation processes.

CHAPTER FIVE

RESEARCH METHODOLOGY

“The first key to wisdom is assiduous and frequent questioning...for by doubting we come to inquiry, and by inquiry we arrive at trust.” (Peter Abelard)

5.1 INTRODUCTION

The previous chapters provided a foundation for expanding the knowledge of the separate and combined roles innovation and technology can play in reducing a country’s dependence on depleting, mineral natural resources (such as oil). The need for this research is to expose the opportunities available (sustainable innovation strategies) in turning a currently abundant natural resource into a catalyst for developing a non-mineral, technology based economy. The conceptual and theoretical frameworks examined in the literature review on the resource curse and on innovation offer an insight into developing processes to enable those in power to guide the economy away from such resource dependence. The process of turning knowledge into new wealth is an essential activity for an economy, and consequently ought to bring benefits to the economy, environment, and society. This chapter therefore describes the research design employed to achieve the objectives of this study.

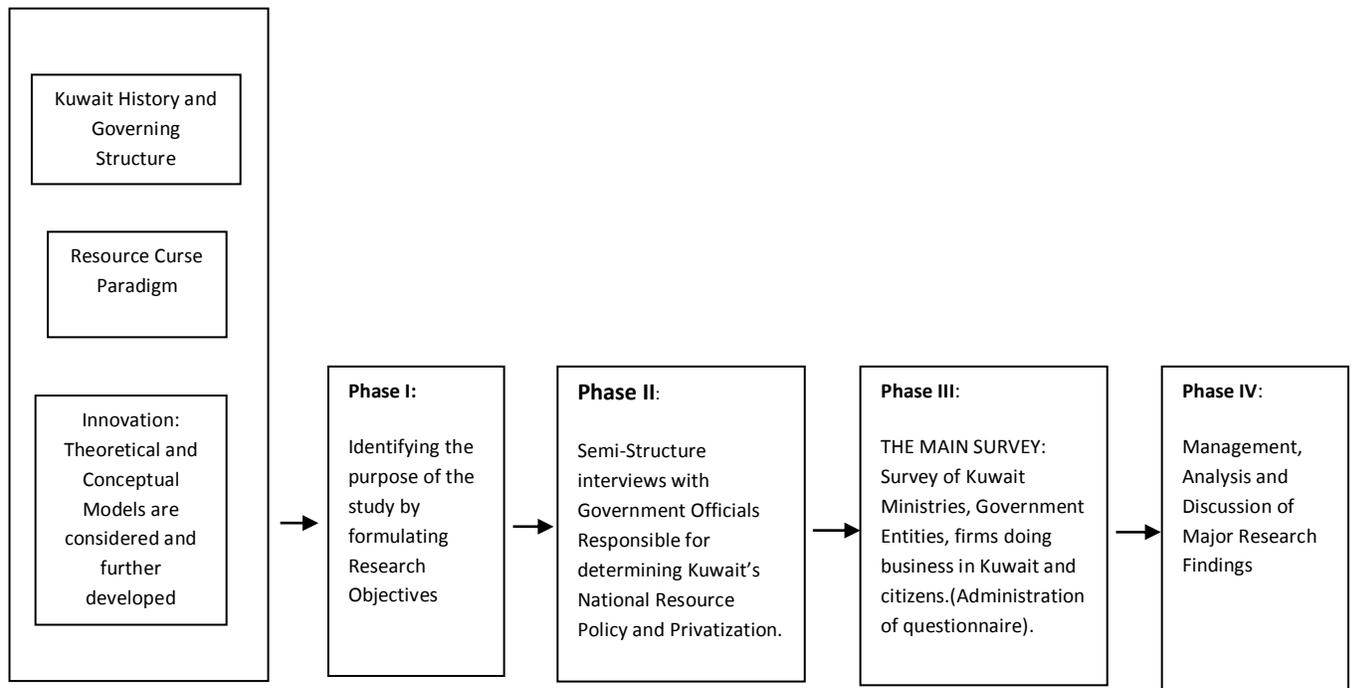
5.2 RESEARCH PLAN AND DESIGN

The plan or blueprint for research used in this study is a four-phase, exploratory research model or design. In phased research, each phase highlights issues and raises questions that are developed in subsequent phases. The phases are exploratory. At each stage one’s knowledge is improved and an understanding of the processes needed to enhance outcomes is acquired. This acquisition of knowledge is further utilized in subsequent phases with the intention of finding possible solutions to identified problems. This design is illustrated in Figure 5.1 and shows the

procedural steps in data acquisition. While the Four Phase Exploratory design commences with Phase One (“the formulation of objectives phase”), prior to this a detailed literature survey in the areas of the resource curse and innovation was undertaken. The purpose of this was to create an awareness of the extent of the problem worldwide and within the context of the history and governing structure of Kuwait.

FIGURE 5.1

FOUR-PHASE, EXPLORATORY RESEARCH DESIGN



As a result clear research objectives were formulated (Phase I). In Phase II, semi-structured or elite interviews were held with nine key government officials and highly ranked personnel of the private sector. The opinions of these high-ranking individuals who are ultimately responsible for determining, implementing, or advising on any changes in Kuwait’s national resource policy, are critical to the findings of this study. The knowledge gained and issues identified in Phase II provide the additional knowledge needed to explore the subject further and develop strategies within the

context of Kuwait. This phase was vital in constructing a research instrument for the main survey. In Phase III, the questionnaire as a research instrument was administered. After accumulating, analyzing, summarizing, and synthesizing the information gained in Phases I, II and III, one was in a strong position to present major research findings, and to describe a “road-map” for Kuwait’s future. This was accomplished in Phase IV.

5.3 PRE PHASE I - LITERATURE SURVEY AND REVIEW

A literature review is an opportunity to critique the status of knowledge on a carefully defined topic. Apart from providing an understanding of the existing knowledge, the literature review helps define the rationale for our research. Critically evaluating previous studies justifies the need for new research. Personal judgment together with knowledge acquired through the literature review allows us to identify any gaps in previous research, and resolve any conflicts in contradictory findings of such research. This was fundamentally necessary since this study is the first of its kind for Kuwait.

5.4 PHASE I: PURPOSE OF THIS STUDY

This study: "**resource curse reduction through innovation: The Case of Kuwait**" considers the strategic issues surrounding the governance of oil resources and its implication for the growth and development of Kuwait through innovation. There is an urgent need to take forward the agenda of this research with specific reference to Kuwait. Should Kuwait fail to build upon its resource base productively and exert caution in its use, the result would be reduced future growth. Since Kuwait’s overt social and economic dependence is on oil resources, as a researcher one has to ascertain whether natural resources are a blessing or a curse for Kuwait. The prevalence of abundance of oil may appear to represent automatic wealth, yet when fragile institutions and factional politics are prevalent (as discussed in Chapter Two); resource abundance may be a mixed blessing.

The problem however lies not with the resources themselves, but in how the resources are managed, for whilst there may be strong evidence of the resource curse syndrome, there do remain some compelling examples of economies who have converted the curse into a blessing. This study thus considers innovation within the context of high oil revenues in Kuwait, and how these oil revenues have impacted on the nature and growth of other sectors.

5.5 PHASE II: SEMI-STRUCTURED INTERVIEWS

A qualitative method of enquiry was chosen in Phase II because of the exploratory nature of this research and for the information input it provides. Due to the small nature of the sampled population, this research method is often labelled elite interviewing, due to the difficulty of accessing the referenced population, who are in important, high prestige positions. It is also referred to as expert sampling, a subcategory of purposive or judgmental sampling. This type of sampling is used when, as in this case, the researcher desires to identify particular issues for a more in-depth investigation, and gain the views of some selected stakeholders in difficult to reach, highly specialised positions (Neuman, 2003). Although the sample size for this phase of the research might appear to be overly small ($n = 9$), the specific knowledge, expertise and power of these stakeholders on key issues that affect the very foundation of national economic structure obliges us to obtain their opinions prior to formulating a more detailed research questionnaire. In short, the sampled population frame consists of those high-level experts in the private sector and government officials who; know what to do, who can do, and who will be critical players in directing Kuwait away from oil dependence.

Semi-structured interviews with knowledgeable, high ranking officials are essential to address the major research questions identified for the purpose of this study. While it was not an intention to determine whether these officials were innovative, their views are important since many of them have

custody over some of the innovation initiatives that take place within the country. Additionally, these interviews provide input to the next phase (Phase III) where a wider range of respondents are selected, and the questions asked are more highly structured. The questions asked in these semi-structured interviews were based on a desire to obtain information on two major research issues:

- Which industry sectors are likely to deliver the greatest amount of technological growth and innovation in the Kuwaiti economy?
- How can government intervention facilitate such innovation?

Answers to these questions provide many solutions as to how Kuwait can maintain revenues and expenditure so as to survive during the period after oil reserves are depleted. Interviews were based on asking each respondent ten initial questions, plus the open-ended question, "What else should we have asked you?" Each interview was restricted to these questions due to time constraints. Meeting these respondents for 30 minutes should be considered an achievement as these stakeholders are extremely busy. The only exception to the ten-question policy was in the case of the Kuwait Investment Authority (KIA). In this instance (for the one individual interviewed) four additional questions were asked dealing specifically with the operations of the KIA. This was necessary in order to carry out the full research agenda. In selecting specific individuals to interview, the main criteria are: that they be decision makers and must be major players in Kuwait. Individuals both from the governmental and the private sector were included. Each of the individuals was considered to be knowledgeable and highly experienced and was aware of the challenges that face Kuwait. As well as having a thorough understanding of its history, these individuals also have a major input into society, with their advice often sought by policy makers on initiatives resulting from Kuwait's resources.

The questions asked of each of the individuals interviewed, with the exception of the Kuwait Investment Authority (KIA), are shown in Table 5.1. Interviews were conducted exclusively by the researcher in the month of March 2008. The meetings were held at the convenience of the decision makers.

All interviews were conducted in the private office of the interviewee, with only the interviewer and the interviewee present. The researcher was the sole individual conducting the interviews in order to provide reliability and validity in reporting and thereby remove the possibility of interviewer bias. The discussions were conducted in the interviewee's native language - Arabic. The interviews were then translated into English immediately. Each interview was of approximately 30-to-45 minutes in duration, with the exception of one which lasted one hour.

In each instance, the interviewees were contacted well in advance of the interview. The importance of the information provided by this research was stressed, and a time for the interview was agreed and established to suit the convenience of both parties. For every appointment, the interviewee was punctual and courteous and accorded the professional respect one would expect of the position held. While a professional tone was established for each interview, the interviewer initially took time to put the interviewee at ease and feel comfortable about sharing ideas. The interviewer kept to schedule, except in those instances in which the interviewee desired to talk longer. Each was given a list of the questions to be asked in advance of the interview, and the interview consisted of soliciting responses.

TABLE 5.1

SEMI-STRUCTURED QUESTIONS ASKED OF ALL RESPONDENTS WITH THE EXCEPTION OF THE KUWAIT INVESTMENT AUTHORITY (KIA)

NO	Questions
1	How has the resource abundance of oil shaped the Kuwaiti economy in your opinion?
2	Does Kuwait use its resources effectively for further economic growth and development?
3	What are the weaknesses of an oil dependent state in your opinion?
4	What are the major options available to reduce oil dependency in Kuwait?
5	What would you propose Kuwait do to use its oil resources more effectively?
6	Do you feel the abundance of oil in Kuwait has been a blessing, or a curse? Why?
7	What do you think about the Kuwait Investment Authority's policies? What role should KIA have in the future?
8	Which sector of the economy is the leading candidate for privatization in Kuwait in your opinion?
9	Which economic sector in Kuwait, if it gets more attention, will have the greatest potential for innovation?
10	What are the primary ways in which Kuwait can transform itself into a diversified, technologically advanced economy?
11	What additional question should we have asked you in shaping Kuwait's oil and growth policies?

Questions asked to KIA executives (including the four additional questions) are shown in Table 5.2.

TABLE 5.2

**SEMI-STRUCTURED QUESTIONS ASKED OF KUWAIT INVESTMENT
AUTHORITY (KIA) RESPONDENT**

Number	Questions
1*	Would you please state KIA's main objectives and goals?
2*	What are the major ways in which KIA is involved in privatization in Kuwait?
3*	Are you satisfied with the results obtained by the privatization process of companies that are under the accountability of KIA?
4*	Can you give me a successful and a failure example of privatization that KIA took care of? Examples?
5	How has the resource abundance of oil shaped the Kuwaiti economy in your opinion?
6	Does Kuwait use its resources effectively for further economic growth and development?
7	What are the weaknesses of an oil dependent state in your opinion?
8	What are the major options available to reduce oil dependency in Kuwait?
9	What would you propose Kuwait do to use its oil resources more effectively?
10	Do you feel the abundance of oil in Kuwait has been a blessing, or a curse? Why?
11	What do you think about the Kuwait Investment Authority's policies? What role would you like them to have in the future?
12	Which sector of the economy is the leading candidate for privatization in Kuwait in your opinion?
13	Which economic sector in Kuwait, if it gets more attention, will have the greatest potential for innovation?
14	What are the primary ways in which Kuwait can transform itself into a diversified, technologically advanced economy?
15	What additional question should we have asked you in shaping Kuwait's oil and growth policies that I did not ask?

*These questions are in addition to those asked of the other participants in the semi-structured interviews.

TABLE 5.3**DESCRIPTION OF INTERVIEWEES AND BASIS FOR INCLUSION IN PHASE II
OF THE RESEARCH**

Number	Role/Position in Kuwait Economy	Basis for Inclusion
1	Assistant Under Secretary for the Planning Sector, Ministry of Communications (MOC), Kuwait	This individual received his PhD in the United Kingdom on the subject of Privatizing the Communication Sector in Kuwait.
2	Legal Adviser to the Council of Ministers	This individual received his law PhD in France, and has worked on a variety of economic laws for the government of Kuwait.
3	Professor, Management & Accounting Division Head, Business & Economics, College of Arts & Science, American University of Kuwait	It is important to have a qualified, academic view of the Kuwaiti situation.
4	Chairman, Kuwait Financial House	Chairman of one of the biggest Islamic banks in the region.
5	CEO, National Bank of Kuwait	This individual is the CEO of the best performing bank in the Middle East over 5 years (according to rating institutes such as Moody's, Standard & Poor's, Fitch Ratings). He has also received awards from organizations such as The Banker, Euro Money and The Middle East Banker.
6	Advisor in the Diwan of His Highness, the Prime Minister	This individual received his PhD in Law from a leading law school in France, and has been the Kuwaiti Ambassador in Switzerland, Spain, Malaysia and Oman before becoming advisor to the Kuwaiti Prime Minister.
7	Deputy Director for Government Performance Follow-up Agency	For the age of this individual (37 years-old), his career trajectory has been remarkable, and provides an opinion from a fresh, dynamic young mind.
8	Governor of the Central Bank of Kuwait & Chairman of the Board of Directors	The individual interviewed has held this position as Central Bank Governor for over 20 years. Therefore it was crucial to have his input in this research.
9	Executive Director, Kuwait Investment Authority's General Reserve Sector	KIA is an independent government body responsible for managing and administrating the local and the overseas investments for and on behalf of the State of Kuwait.

Characteristics and the positions held by these individuals interviewed are shown in Table 5.3. In selecting individuals to participate, an attempt was

made to gather as many opinions, ideas and thoughts as possible from these individuals who are likely to assume an increasingly important role as Kuwait seeks to move away from its mineral (oil) dependence.

The participants that were interviewed for the study were selected as 'key informants' (Churchill and Lacobucci, 2005; Seidler, 1974) based on having expert knowledge of industrial development in Kuwait. Therefore although the sample size may seem to be small, it was not intended that the research should provide results to be generalised, rather it was the aim to provide preliminary insights based on the expertise of the participants (Denzin and Lincoln, 1994) on the issues being considered. Using these key informants it was also possible to gain higher levels of reliability and validity to the findings of this research.

The data collection was undertaken using a semi-structured interview guide. The interview questions were drafted for the analysis of the national system of innovation within Kuwait in general, and for understanding the management of innovation in particular. The interviews also examined the sensitivity with which the diffusion of innovation would proceed in Kuwait. Because of the exploratory nature of the research, this initial investigation used a semi-structured in-depth interviewing technique. The aim was to get the participants to talk as freely as possible and to discuss the area in their own terms. This technique aims to gain the perspectives of informants so that the research topics could be explored (Daymon and Holloway 2004), and this would allow the interviewees to express their perceptions and feelings at length in their own words, leading the dialogue, thereby obtaining insight and understanding. The interview guide was developed with the aim of ensuring interviews lasted no more than one hour, although in a few cases this was exceeded.

In-depth interviews were the primary data-collection method of this study since they provide richness and depth of information, particularly about the national system of innovation within Kuwait and managerial viewpoints with respect to the issues. Interviews were conducted either face-to-face. In addition, it should be noted that a few interviews were undertaken with more than one interviewee, where appropriate or where the circumstances made this necessary. Analysis was through coding and attributing content to identified dimensions, thus recognising any commonalities or trends (Schilling, 2006; Miles and Huberman, 1994).

5.6 PHASE III – ADMINISTRATION OF IN-DEPTH SURVEY INSTRUMENT

Once these initial face-to-face interviews were completed, a survey instrument for the main survey was developed for use in Phase III. A pilot study was conducted with twenty individuals (10 Arabic speaking and 10 English-Arabic speaking) to test the validity and reliability of the questionnaire. These individuals included students, housewives, people working in the private and public sectors, and English and Arabic Professors. A detailed and final questionnaire (translated into Arabic too) was then constructed and administered randomly to 125 respondents to elicit qualitative and quantitative responses. The respondents were from the various sectors identified in Chapter Seven. The survey was undertaken during May and June 2009. Ninety questionnaires were returned and 78 were found usable. (Copies of the questionnaire – in both Arabic and English – are included in the Appendix.)

5.7 PHASE IV - ANALYSIS OF DATA

The data was analysed using SPSS and several parametric and non-parametric tests were conducted. Extensive frequency analyses, especially cross-tabulations, were used to illustrate contrasting beliefs or approaches, and this is presented in the penultimate chapter of this study (Chapter

Seven). Based upon the analysis of this data, recommendations are provided in the final chapter of the study.

5.8 FORMULATION OF HYPOTHESIS³

As with all empirical studies demographic data are usually extracted, particularly if it is the first study of its kind. For the purposes of this study the demographic data included: age, education, nationality, gender, nature of employment (public sector or private sector), number of years employed, position held at work and income. The sample is dominated by Kuwaitis with a very high level of education, working in the private sector and holding high managerial positions. The sample represents various aged groups, has differential years of working experience and is predominantly male. The sample for this study was dominated largely by Kuwaitis with a very high level of education, working in the private sector and holding high managerial positions. The sample represents various aged groups, has differential years of working experience and is predominantly male.

The second part of the survey included questions that dealt with the respondents' attitude towards innovation in Kuwait. This was necessary for recommending a national system of innovation as a means of reducing the curse effects in Kuwait. Consequently, it was necessary to identify the top ranking sectors and the worst performing sectors, and to determine the underlying reasons advanced by the respondents for such a ranking. Since oil is Kuwait's single export commodity that generates almost all the wealth for the country, it is hypothesized:

H_0 : That the oil sector is the most innovative sector; and

³ I considered the hypotheses as statements about the relationship between two identifiable variables in each case. Since the hypothesis is a specific, testable prediction about what I expect to happen in my study, the hypothesis explains the course of my research. Hypotheses do not have to be correct. While the hypotheses help predict what a researcher expects to see, the goal of research is to determine whether this expectation is true or not. In the process I merely explored which ones might contribute to the ultimate outcome. As I have found that the results do not support the original hypothesis, it becomes imperative that I as a researcher suggest other options that should be explored in future studies.

H_0 : The most innovative sector a result of adequate public expenditure on research and development.

However, the study established (Chapter Seven) the following: the banking industry clearly leads the way. The inability of the oil sector to be the most innovative sector may suggest a possible resource curse effect. The main reasons for classifying these sectors as being innovative, **it was as a result of high to moderate level of expenditure on ICT**, and not public expenditure on research and development.

Since Kuwait is a desert country, it is hypothesized:

H_0 : That the agricultural sector is the least innovative sector; and

H_0 : This is a result of inadequate public expenditure on research and development.

The least innovative sector was the **public education** and the reason advanced was the level of expenditure on ICT and the level of recruitment of science and engineering graduates are not sufficient to allow this sector to be innovative (Chapter Seven).

Kuwait is home to over 120 different nationalities. Each nationality carries different perception about various issues and it was necessary to determine whether there is a difference between Kuwaitis and Non Kuwaitis on issues relating to innovation. Non Kuwaitis are expatriates in Kuwait and who basically work and reside in Kuwait. The reasons for working in Kuwait generally vary from high standard of living, safety and security and high salaries that are paid. At times expatriates are more critical of the developments that take place in the country. In this regard and the following hypotheses were tested in this regard:

H_{1N} : There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the 5 best sectors associated with innovation.

- H_{2N}** : There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the reasons for selecting the best sector associated with innovation.
- H_{3N}** : There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the 5 worst sectors associated with innovation.
- H_{4N}** : There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the reasons for selecting the worst sector associated with innovation.

Two sectors were used in this study, namely the public sector and the private sector. Since there are differences in innovation in the two different sectors, the attitudes towards innovation by employees in these sectors should ideally be different. In this regard the following hypothesis will be tested:

- H_{1S}** : There are significant differences between people employed in the private and public sector when perceiving the 5 best sectors associated with innovation.
- H_{2S}** : There are significant differences between people employed in the Private and public sector when perceiving the reasons for selecting the best sector associated with innovation.
- H_{3S}** : There are significant differences between people employed in the private and public sector when perceiving the 5 worst sectors associated with innovation.
- H_{4S}** : There are significant differences between people employed in the private and public sector when perceiving the reasons for selecting the worst sector associated with innovation.

Innovation is a function of the degree to which individuals have access to innovative thought, ideas and innovation itself. There is therefore a need to

test whether employment positions present differences in innovation in the different sectors. The following hypotheses were formulated in this regard:

- H_{1P}** : There are significant differences between the different employment positions when perceiving the 5 best sectors associated with innovation.
- H_{2P}** : There are significant differences between the different employment positions when perceiving the reasons for selecting the best sector associated with innovation.
- H_{3P}** : There are significant differences between the different employment positions when perceiving the 5 worst sectors associated with innovation.
- H_{4P}** : There are significant differences between the different employment positions when perceiving the reasons for selecting the worst sector associated with innovation.

We also tested whether there are differences in male and female attitudes vis-à-vis what are perceived to be the best and worst sectors. In general, Kuwait is a patriarchal society with strong cultural and religious traditions which have created stereotypes of women as being physiologically and intellectually inferior to men. Arab women generally face an unequal access to opportunities compared to their male counterparts. Therefore the following hypothesis was formulated:

- H_{1G}** : There are significant differences between males and females when perceiving the 5 best sectors associated with innovation.
- H_{2G}** : There are significant differences between males and females when perceiving the reasons for selecting the best sector associated with innovation.
- H_{3G}** : There are significant differences between males and females when perceiving the 5 worst sectors associated with innovation.
- H_{4G}** : There are significant differences between males and females when perceiving the reasons for selecting the worst sector associated with innovation.

The tests and findings for each of the hypotheses stated above are presented in Chapter Seven.

5.9 CONCLUSION

This chapter has presented a detailed systematic approach which underpins the study. The purpose of the study was delineated, the use of the Four Phase Method was justified, and the steps within each method were identified. The research design outlined guided the empirical study undertaken. Our objective was to identify the opportunities available for turning a currently abundant natural resource into a catalyst for developing a non-mineral, technology based economy. Opportunities in this regard can only be identified through a methodical approach. The conceptual and theoretical frameworks examined in the literature review on the resource curse and on innovation offered an insight into developing processes to enable those in power to guide the economy away from such resource dependence. Several sets of hypothesis were formulated. This chapter therefore described the research design employed to achieve the objectives of this study, with the research findings presented in the following chapters.

CHAPTER SIX

FINDINGS OF SEMI-STRUCTURED INTERVIEWS

"I have learned silence from the talkative, toleration from the intolerant, and kindness from the unkind; yet, strange, I am ungrateful to those teachers". (Kahlil Gibran)

6.1 INTRODUCTION

The process of resource-curse reduction or resource-blessing enhancement through innovation requires a methodological approach. Any random decision may result in severe repercussions for any economy and its social fabric. Key decision makers should base their decisions on both curse reduction and their goals in terms of the respective national, socio-economic and institutional challenges. Two methods are typically employed to address the challenges of development and for curse reduction: firstly, an aggressive so called 'big bang' approach and secondly a gradualist or incremental approach. An overview of these methods is necessary as their applicability depends on the sensitivity of groups of people (principals) and policy-makers to embrace them. Since the decisions of such key stakeholders are often interdependent, preliminary interviews were conducted with members of this grouping so as to capture their views on key development strategies and options. This chapter presents the findings of the semi-structured interviews.

6.2 'BIG BANG' AND GRADUALISM AS METHODS

Camerer and Loewenstein (2004) contend that economic policies necessitate thorough planning, which is a demanding task. In the 20th Century the end of autocratic political regimes created unique opportunities for people in former socialist and communist economies as political freedom was followed by democracy and economic liberalization. However, the transition from central planning to a free market economy differed across

these economies, and two schools of thought on the speed and sequence of economic reforms were identified (Lipton and Sachs, 1990). On the one hand, a “fast as possible”, or rapid breakaway from the immediate past and a quick introduction of new economic reforms was pursued (the “big bang” method), while on the other a more gradual approach could be adopted (Roland, 1991). According to Roland (2000), proponents of gradualist and ‘big bang’ methods present empirical evidence supporting their point of view, and both sides explain the difference in outcomes and the increasing gap between the two groups of transition countries in terms of the extent to which they have introduced the “**favoured**” method.

The ‘big bang’ approach to planning and implementation is the more radical method, designed to create an immediate impact on a nation's economy with government intervention rapidly reduced, and large state expenditure on varied projects curtailed. In contrast, as in the case of Dubai, government dependence is reduced incrementally over a longer time period. This gradualist method, it is argued, produces a more stable transition, because the impact is neither immediate nor intense. However, there is no universal consensus as to which method is superior, and both strategies could be effective when properly employed in specific economies. In choosing whether to adopt a ‘big bang’ or gradualist strategy, nations must carefully consider time and place factors, the suitability of each method, and the perspective of key stakeholders on policy and policy change.

6.3 INDIVIDUAL INTERVIEWS

In an effort to determine the emotional climate associated with Kuwaiti dependence on natural oil resources, individual interviews with key stakeholders were therefore held prior to the major research questionnaire being undertaken.

An individual interview is a research technique that collects data through an interaction with the interviewer on a specific topic. This was conducted as an exploratory, formative, or process evaluation of the research topic. This was particularly useful as empirical evidence and literature relating to curse-blessing effects in Kuwait is limited. In this study, the individual interview method was used. The initial purpose of the interview was to gain an in-depth understanding of key stakeholders' perceptions of Kuwait's oil production and its implication for innovation. Secondly, the interview identified the wider challenges that face the economy. Thirdly, it assisted in both reformulating the hypothesis for the study and informing the development of a questionnaire for wider distribution among key stakeholders in Kuwaiti society. Nine major stakeholders were interviewed and the summary findings are presented in the next section. The participants interviewed were as follows:

- Mr. Bader Abdul Muhsen Al-Mukhaizeem, Chairman Kuwait Financial House;
- Mr. Ibrahim Dabdoub, CEO National Bank of Kuwait;
- His Excellency Sheikh Dr. Salem Jaber Al-Ahmad Al-Sabah, Advisor the Diwan of His Highness the Prime Minister;
- Sheikh Thamer Jaber Al-Sabah, Deputy Director, The Government Performance Follow-up Agency;
- Mr. Bader A. Al-Ajeel, Executive Director, Kuwait Investment Authority's General Reserve Sector;

- Professor Jeremy Cripps, FCA, CPA, Ph.D, Head of Business Accounting and Economics Division, American University of Kuwait;
- Dr. Waleed D.S. Al Najjar Assistant Under Secretary for the Planning Sector Ministry of Communications (MOC), Kuwait;
- Dr. Bilal Sandid Legal Adviser at Council of Ministers; and
- H.E. Sheikh Salem Abdulaziz Al-Sabah, Governor of the Central Bank of Kuwait and Chairman of the Board of Directors

There are several limitations that are associated with interviews as a method of data collection. The interviews were time consuming and were very resource intensive. Despite these limitations, these individual interviews proved adequate for this preliminary research and formed the basis for the major project. All interviews were conducted in Arabic except for the one conducted with Prof. Jeremy Cripps. This allowed the interviewees to express themselves freely in a language they best understood. The observations and discussions were translated into English for the purpose of the study. Whilst the summary findings may appear general in nature, this is our intention, so that the views of the interviewees are not presented in a distorted fashion. Moreover, individual responses were collated and are presented as summary findings since much of the findings overlap. All issues addressed in the interview are reported in the next section.

The responses of each of the interviewees were recorded manually. No electronic equipment was used as this was considered too personal and would perhaps inhibit responses. The responses were all collated and reported upon collectively in terms of the ten different issues that are presented in the next section. The questions posed to each interviewee

were identical and the recording of information was done in a thorough and consistent fashion by the researcher himself.

6.4 SUMMARY FINDINGS OF THE INDIVIDUAL INTERVIEWS

The first issue addressed in the interview was the extent to which resource abundance in the form of oil shaped the Kuwaiti Economy.

One has to focus on two distinct periods when considering this first issue: before and after the oil discovery. Before the discovery of oil, shipbuilding and trading in wood, gold and dates and diving for pearls characterised the economy. After oil's discovery, this situation changed as many of these activities collapsed. Economically, oil discovery came just in time, as Japan had started making artificial pearls which impacted negatively on the lucrative pearl business of Kuwait. Prior to the discovery of oil, Kuwait was driven by the private sector. Even during the 1950's the private sector was contributing approximately 80% of GDP (as compared to 15% today).

Oil brought life to Kuwait's economy, and became the single most important source of revenue for the state. Undoubtedly today government expenditure in Kuwait is shaping the country's economy. Oil revenue that came directly to the state from the first shipment became the main source of national income and government revenue. The magnitude of this resource rent transformed the whole country, and led to a new era of innovation and advance with regard to the oil fields. Consequently, the national economy also changed. New oil-linked companies and institutions, with huge capital investments and new specializations, emerged as a result of the discovery. New laws were promulgated regulating business practice in both the oil sector and beyond. Courts were empowered to maintain law and order consistent with the laws that were promulgated. Clear methods to deal with disputes were developed and oil abundance was used to establish infrastructure including major projects such as airports, harbours, highways,

electricity and telecommunications. At the same time, growing oil revenues created a dependency on oil as the major source of national income.

The second issue considered was whether Kuwait uses its natural resources in effective ways 'vis-à-vis' further development.

The response to this second issue ranged from 'strong negative' to 'strong positive' sentiments. The 'strong negative' sentiments related to the inability to transform the economy into a fully vibrant economy consistent with First World economies. The 'strong positive' sentiments centred on the goodwill of the leaders of the country and the creation and maintenance of "The Next Generation Fund" which is fully funded by the oil resources. It was the proceeds of this fund that were used to rebuild the country after the Iraqi invasion.

However, the interviewees felt that still more needs to be done, because this fund is inadequate to meet the salary expenditure needed to sustain the Kuwaiti labour force. The general view is that the fund should also encourage foreign investment to come to Kuwait. A decrease in taxation applicable to foreign companies will support this (the tax rate was 55%, and was recently reduced to only 15%). While fees for a variety of services and utilities are also very low in Kuwait, it was felt that the fees should be increased to those found in a market economy driven by supply and demand.

It was also noted that since oil became the cornerstone for development of the country, some of the revenue has been invested abroad. This places Kuwait in a better position compared to other countries in the Gulf. Interviewees also argued that the country is not utilizing its resources effectively, as numerous policies that the government has instituted in past decades have extended government control over economic activities, without providing a clear vision as to the private sector's role in different

areas. Given the private sector could complement the activities of the government, it was felt important to allow the private sector to play a more meaningful role. The diminished role of the private sector in Kuwait and the enhanced role of the public sector over the issues of oil production has rendered the governance of oil production as ineffective. Of particular importance is the issue of human resources. Kuwait has a large quantity of quality human resources, whose reputation is not only known locally, but throughout the region. Finally, the interviewees acknowledged that a perception of abuse of resources is something that is widely discussed, but has not been the subject of sufficient research.

The third issue required interviewees to consider the weaknesses of an oil dependent State.

Interviewees felt there were a number of weaknesses, varying from the absence of policies to develop other economic sectors, to an absence of policies to develop human capital in the country. Unfortunately, for oil rich countries such as Kuwait, the major part of the national income is generated in the oil sector, and the remaining economic sector's contributions are very limited, which means numerous opportunities are lost to enhance the skills, abilities and qualifications of the youth in Kuwait. This is not only applicable to Kuwait, but also applicable to other oil rich countries in the Gulf. The problem, the interviewees noted, with a sole major revenue source is that governments tend to become complacent and do not think of diversifying income. With oil, there are specific problems as it will eventually be depleted, although numerous researchers are currently focusing their efforts on finding a substitute to oil. In a few years, oil may no longer be a strategic good. Hence, any country depending on a single natural resource such as oil should have a long term strategy in place to counteract the natural depletion of its resource. While other countries are looking to natural energy sources such as wind/water/sun to generate electricity, Kuwait is not yet active in these areas. This complacent conduct is a major cause for

concern. Kuwait's current prosperity is built on a reliable supply of oil. The economic, social and political consequences are yet to be fathomed should the oil supply fall towards depletion. While there are major causes for concern, oil depletion is not one of the items on Kuwait's agenda. This is one criticism that has been highlighted by the interviewees. Diversification of the economy and a well sustained programme of innovation are key solutions that oil producing countries need beyond the production of oil. Any reduction in the price of oil greatly affects the economy of a country dependent on it. The interviewees cited that in 1997, when the oil price dropped to \$12 a barrel, foreign investment was higher than the oil revenue. Caution was urged as the country's budgets are based on the revenues derived from the resource, and a real danger emerges if prices fall and there is not a sufficiently diversified economy.

The fourth issue considered by the interviewees related to the options to reduce oil dependency in Kuwait.

The reduction of oil dependency was felt not to be an option, but a necessity. However, complete dependency is neither tenable nor healthy for the country in the short term. Yet, if one does not sow the seeds of development, future generations will not reap anything - and will likely suffer from an inability to reduce the dependency. True development and growth ought not to be dependent on commodity trade. Commodities that experience major fluctuations in price have additional problems and a very clear strategy needs to be formulated for economic development. Human development was felt to be paramount, yet much of the culture of a hard working Kuwaiti society seemed to have been lost. Consequently, productivity had fallen and this is perhaps one of the resource curse effects of oil in Kuwait. Kuwait has exhibited increasing dependence on a global economy providing it with most of the resources beyond oil. In this regard there is complex network of exchanges of goods and services which include unskilled labour for ordinary tasks that can easily be performed by a

householder or a citizen. Economic policies need to be formulated to bring back the national memories of a nation that worked and produced culture. Kuwait was blessed with citizens that were committed to working together long before the discovery of oil. The government therefore needs to take the initiative and establish a legal framework, encouraging investment in all economic sectors, discouraging a culture of waste, promoting import substitution, and production and exportation of products. Equally, it was important to establish a more efficient and comprehensive oil industry, as it is well known that a large number of products can be developed from the oil industry (such as chemical products and plastics). External expertise could be brought in initially to help the stakeholders to develop these industries. Moreover, a complete service industry should be established to attract foreign companies (once the right investment environment has been created for them).

In Kuwait financial institutions offering services such as banking and insurances need to be revisited. The government should make it easier for banks to extend their operations and services beyond the borders of the country. The interviewees felt that the general perception was that oil revenues may also be misappropriated. For this reason, the government was reluctant to abolish some of the archaic laws and regulations which prevented an expansion of these services. However, the interviewees believed that the quality of these services would improve as a result of a relaxation of these laws and regulations.

Looking at oil as the main source of revenue for Kuwait, one should focus on this and expand the related products that can be manufactured out of it. One should also not neglect the necessity to look for substitutes for oil. This is an issue that is currently receiving attention.

The fifth issue considered was how to use Kuwait's resources more effectively.

Unproductive employees were viewed as a result of the government's inability to train its workforce, and this is a major concern in Kuwait. The government spends an enormous amount of money, however very little goes towards the development of the worker in terms of promoting work ethics. Any discussions on the effective use of resources should address the issue of these unproductive workers - ensuring that a new psyche of hard work is created. This would entail an investment in human capital. In private and State entities the right person should be placed in the right position. The dissolution of groups of unproductive employees may be one solution. The establishment of a strong private sector which results in a growing economically active workforce might be another. The separation of economic decision-making from political interference is paramount. Encouraging the private sector to take the initiative in implementing government projects will ensure the smooth delivery of goods and services and the creation of viable job opportunities - resulting in real development of a nation that has lost its culture of hard working citizens.

One should also look at service fees for utilities. These should be consistent with sound economic principles and practices. Also, Kuwait should consider introducing taxes. Taxation in indirect and direct forms would create a society that understands and appreciates the culture of payment for services. The government can then be held accountable for the effective use of tax revenue.

Investment in education is a major consideration. A substantial amount of money is spent on education, but rarely is the education considered to be adequate. Governments of other countries use expertise from different sectors to develop viable projects, but Islamic literature condemns wasteful

conduct or *Israf*. While oil may be precious, so is time, yet it is not uncommon to observe time wastage in various occupations in Kuwait. The unity and stability of a nation should emerge from policies and procedures that get people to work effectively. A vision for development with targeted goals may be embodied in the country's constitution. With no such vision, one cannot achieve any meaningful development.

The sixth issue considered is the perception of oil as a curse or a blessing.

Oil was viewed as a blessing to the country, transforming the country and the way of living for its citizens. State revenue allows society to reach its goals, however, it may turn out to be a curse should one only depend on that source. Not utilizing the blessing in an effective way now may, over time, turn it into a curse. The management of the resource is a key issue in perceiving oil as a curse or a blessing. One needs to examine to what extent has management of the resources translated the blessings into real blessings in the form of improved education, improved health care, improved social security benefits and improved quality of life of the citizens. Overall oil discovery and all its manifestations were considered more of a blessing than a curse.

The seventh issue considered concerns the thoughts of stakeholders regarding the Kuwait Investment Authority's policies and roles.

It was felt that the Kuwait Investment Authority's (KIA) representatives have very limited roles, and are therefore unable to affect development plans for the country. Stakeholders felt that this may be a result of a conflict between the role of the government and the KIA, as the constitution mandates the government to draw up plans and programmes for the country. As for KIA, its role is based on managing the country's investment funds in a manner that is approved by all. In some quarters the policies of the KIA were

considered adequate, but political interference was also felt to strongly negate the performance of the KIA. Nevertheless, it was felt the KIA needed to update its standards, rules and regulations, consistent with the numerous economic and social changes that have taken place in Kuwait. Communication with other government entities or organizations also responsible for investments is required as there is very little co-ordination at present. Improved co-ordination would have benefited the country.

One of the specific roles of the KIA was to set target goals that have a major influence on the magnitude of the next generation's fund. In this way interest revenues from this fund could become the substitute for oil revenue thereby providing a flow of funds to meet government expenditure when the oil reserves are depleted. The current working method of the KIA is based on taking low risks and, as a result, this generates low returns. While this was felt to be the right strategy, interviewees agreed that the KIA also needed to improve their investment policies.

The eighth issue considered the stakeholders priorities for privatization.

Although this study does not deal with privatization per se, it was felt that an idea of the stakeholder's view on this issue would help inform our thesis. A general belief was that the electricity, health and education sectors ought to be a top priority for privatization. These sectors are inter-connected as they are related to the quality of life of Kuwaiti citizens and an improved quality of these services will affect in a direct way the development of Kuwaiti society. For example: education is strongly connected with building human capital, which is the first target for all development plans and programmes. Electricity is a major commodity in Kuwait and central to the development of infrastructures. Improving health services is as important for Kuwait as it is in any other part of the world. Telecommunication and air transport companies were also mentioned as candidates for privatization. Kuwait

Airlines is the flag carrier of Kuwait and is in urgent need of restructuring. Future railway and harbour development also need private input.

The ninth issue considered sectors that stakeholders rated as having potential for innovation.

The government needs to empower the private sector giving it greater autonomy to support the innovation initiatives of small and medium enterprises. Turkey was identified as a country that had a planned strategy for the development of small and medium enterprises. In Turkey, the support for small projects has reached \$85 billion and if this strategy was replicated in Kuwait innovation from entrepreneurs would result. Awarding development contracts to major competent and private organizations could result in innovation that benefits the whole nation. On the contrary bureaucracy was viewed as a manifestation of government in Kuwait, restricting the growth potential of the country for decades. Reduced bureaucracy is in itself innovation.

The second sector after oil, based on the latest GDP figures, is the financial sector, and interviewees felt these two sectors would offer the main impetus for innovation.

The tenth issue considered how Kuwait can transform itself into a diversified technologically advanced economy.

To achieve this, numerous steps need to be taken. These include investment in meaningful technical education, engineering and computer science. The result would be a new generation of Kuwaiti graduates who can become the cornerstone for other national, economic and social initiatives. The constant use of outside consultants and outsourcing offers a paramount challenge for change. There must be plans and a vision from the government to support the private sector and to ensure a well-diversified economy. Increasing education levels and adjusting the teaching material

to suit a country that is in need of technical education are key factors. State of the art technology will not be meaningful if one is unable to use it. Kuwait needs a long term plan with a clear vision. Kuwait's employees are also in need of motivation, and a healthy working atmosphere, excellent services and an open economy can help provide this motivation.

6.5 CONCLUSION

The findings of these semi-structured interviews suggest that Kuwait is in urgent need of a long term economic plan with a clear vision. Failure to plan for an economy that can sustain itself is indeed a plan to fail. Should the private sector's role continue to shrink, it will adversely affect the Kuwaiti economy. Innovation is sorely needed to add impetus to the economy. However, the government of Kuwait needs more than just generic advice. The initiative to innovate rests with key stakeholders, the government being the most important of these. Yet innovation requires innovators. Firstly, a culture of innovation is seen as fundamental if the government is to effectively manage and survive in a dynamic environment. What makes for an innovative government culture? When innovation strategies are applied simultaneously, they create a powerful synergistic force for change enabling the private and public sector to be successful in addressing socio-economic and community development issues. Yet as innovation usually disrupts established norms, relationships and behaviours, innovation in government requires courage and imagination. In the private sector innovation may result in large financial benefits, so companies have learned to value, promote and invest in innovation. As the Kuwaiti government is a monopoly provider of many goods and services, there has been little incentive to engage in innovation.

CHAPTER SEVEN

FINDINGS OF THE EMPIRICAL STUDY AND DATA ANALYSIS

"Once numbers are tortured, it would confess to anything". (Anonymous)

7.1 INTRODUCTION

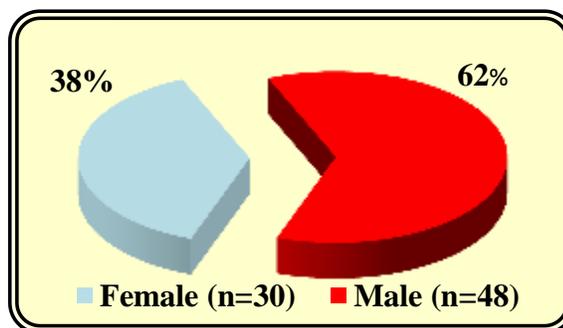
This chapter covers the analysis and the findings of the data gathered through our research questionnaire. It begins by presenting some descriptive statistics of the general characteristics of the respondents. In the second part of this chapter we identify the sectors where innovation is taking place (or is lagging behind), and the corresponding reasons as to why this is happening. In the third section of this chapter we will discuss the impact of innovation, and comment upon its importance within the GCC countries. To be able to interpret the gathered information, the program SPSS v.17 was used, as this allows various descriptive and advanced statistical tests to be applied in our endeavour to understand how innovation is currently being perceived within the Kuwaiti environment.

7.2 THE SAMPLE SURVEY: DEMOGRAPHIC ANALYSIS

Out of the 125 questionnaires randomly distributed within different public and private organizations, 90 were returned of which 78 were valid for analysis, therefore giving us a valid response rate of 62%. The gender composition of our studied sample, shows that 62% of the respondents are male, compared to 38% female (Figure 7.1). As a result of oil income that launched Kuwait on a path of economic modernization, there was a rapid impact on women who, on one hand, now have access to better educational and new occupational opportunities and, on the other hand, still confront conservative societal restrictions based on Islamic norms and values. Kuwait is similar to other Arab and Islamic societies that is also driven by tribal customs and traditions and continue to have gender inequalities. With

any sudden wealth, educational and employment advancements are expected to have profound effects on both men and women and their perception of social norms and values. Already in 1999, one of the most pressing issues in Kuwait was women's suffrage, a decree granting women the right to vote and hold elected office was issued. This culminated with remarkable success on May 16, 2009 when four female representatives were elected to the National Assembly. Their electoral success had ushered a new phase in Kuwait's political process in which women finally became active participants. Determining the impact of issues on different boundaries such as separating Kuwaiti from non-Kuwaiti, elites from other social groups and classes, educated and less educated can also be extended to determine significant differences between women and men in relation to innovation. Using gender as a lens, aspects of Kuwait's innovation policy in terms of gender differences should be examined and as a result four gender hypotheses were also formulated (refer section 7.6).

FIGURE 7.1
GENDER DISTRIBUTION OF SAMPLE



The age group distribution shows a fairly even division between the respondents in their twenties, thirties and forties, with a slightly lower response rate among those aged 50 years old and above - who accounted for 21% of the total sample (Figure 7.2).

FIGURE 7.2

AGE GROUP DISTRIBUTION

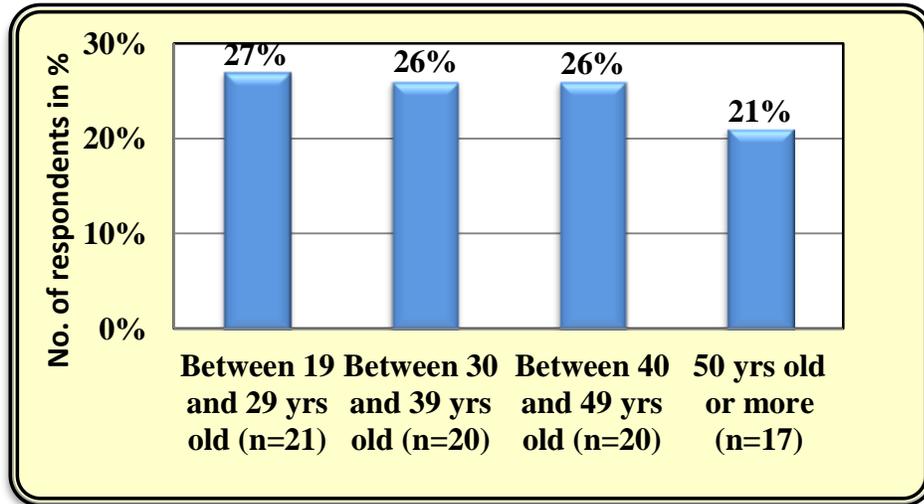


Figure 7.3 illustrates that 65% of the respondents are of Kuwaiti origin against 35% non-Kuwaitis (who reside and work in the State of Kuwait). While this does not reflect the actual picture of Kuwait, where locals are outnumbered by foreigners, Kuwaitis hold a higher proportion of key posts than foreigners and such a distribution (Kuwaiti/non-Kuwaiti) is to be expected. Table 7.1 indicates that over three quarters of the female respondents are Kuwaitis (against 58% for the men).

TABLE 7.1

SAMPLE DISTRIBUTION BY NATIONALITY

		Kuwaiti	Non-Kuwaiti
Gender	Female	Count	23
		%	76.7%
	Male	Count	28
		%	58.3%
		7	20
		23.3%	41.7%

FIGURE 7.3

GENDER AND NATIONALITY CROSS TABULATION

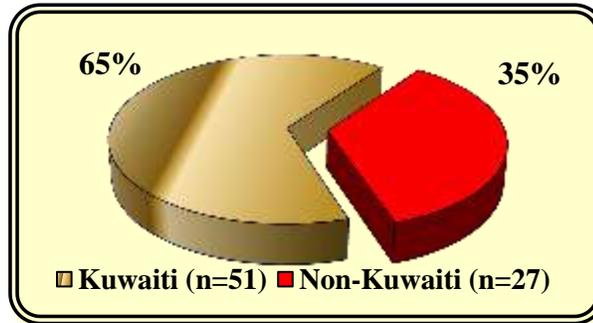
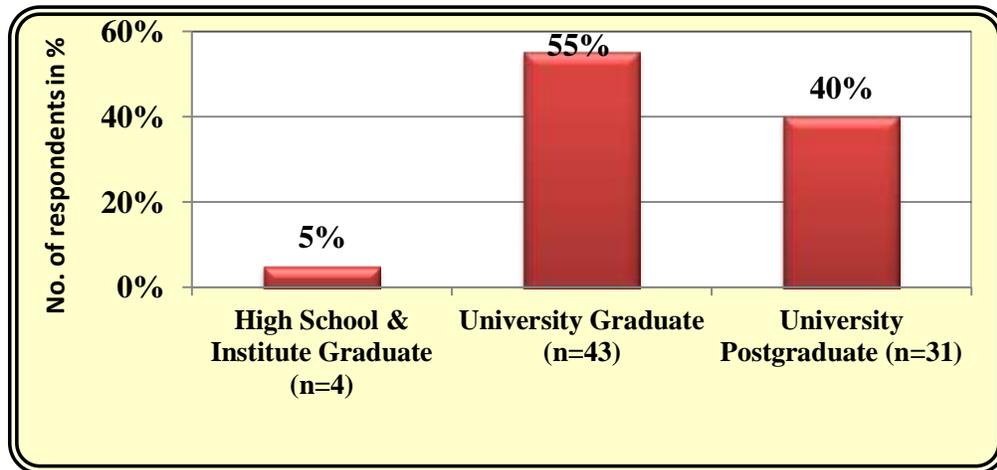


FIGURE 7.4

**SAMPLE
DISPERSION IN TERMS OF LEVEL OF EDUCATION**



Our sample shows (Figure 7.4) a very high level of education, with 95% of respondents holding a university or higher degree (55% and 40% respectively). Only 5% have a high school and/or an institute background.

The cross tabulation between gender and the level of education (Table 7.2) indicates that 48% of males hold postgraduate qualifications against 27%

for females. Females therefore outnumber males when it comes to first degrees, with respectively, 67% and 48%.

TABLE 7.2
GENDER AND LEVEL OF EDUCATION

		High School & Institute Graduate	University Graduate	University Postgraduate	
Gender	Female	Count	2	20	8
		%	6.7%	66.7%	26.7%
	Male	Count	2	23	23
		%	4.2%	47.9%	47.9%

The figures are pretty well balanced when it comes to postgraduate studies by nationality, though the Kuwaitis have the upper hand (57% compared to 52%) when university undergraduate degrees are examined (Table 7.3).

TABLE 7.3
NATIONALITY AND LEVEL OF EDUCATION

		High School & Institute Graduate	University Graduate	University Postgraduate	
Nationality	Kuwaiti	Count	2	29	20
		%	3.9%	56.9%	39.2%
	Non-Kuwaiti	Count	2	14	11
		%	7.4%	51.9%	40.7%

The respondents' sector of employment is largely dominated by the private sector (with 60%), as illustrated in Figure 7.5. Table 7.4 indicates that 71% of the men sampled work in the private sector, whereas 57% of females are employed in the public sector. An examination of employment by nationality points to a dominance of foreigners operating in the private sector (82%) as opposed to Kuwaitis (who are fairly equally divided between the public and private sector with, respectively, 51% and 49% as shown in Table 7.5).

FIGURE 7.5
EMPLOYMENT SECTOR

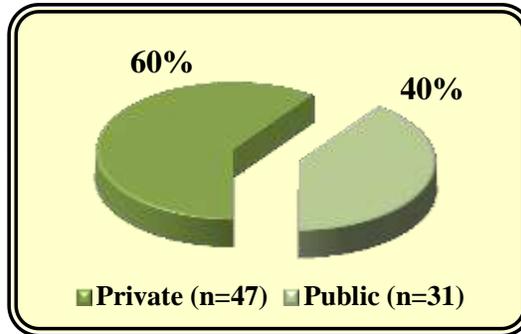


TABLE 7.4
GENDER AND EMPLOYMENT SECTOR

		Private	Public	
Gender	Female	Count	13	17
		%	43.3%	56.7%
	Male	Count	34	14
		%	70.8%	29.2%

TABLE 7.5
NATIONALITY AND EMPLOYMENT SECTOR

			Private	Public
Nationality	Kuwaiti	Count	25	26
		%	49.0%	51.0%
	Non-Kuwaiti	Count	22	5
		%	81.5%	18.5%

TABLE 7.6
POSITIONS HELD AT WORK

POSITIONS AT WORK	Frequency	Percent
Senior Management	22	28%
Middle Management	17	22%
Lower Management	10	13%
Supervision	9	11%
Other	6	8%
Professional & Self Employed	14	18%
Total	78	100%

With regard to the working positions of our studied sample, Table 7.6 illustrates that 28% of our respondents hold senior management positions, followed by 22% in middle management. Therefore precisely half of our sample work in the highest managerial positions within the public or private sector. Figure 7.6 indicates that 32% of respondents have more than 10 years working experience in their current position. The largest group (44%) has 5 or less years of professional experience in that same position, while 24% have been working for 6 to 10 years at that level.

FIGURE 7.6
YEARS OF EXPERIENCE IN THE CURRENT POSITION

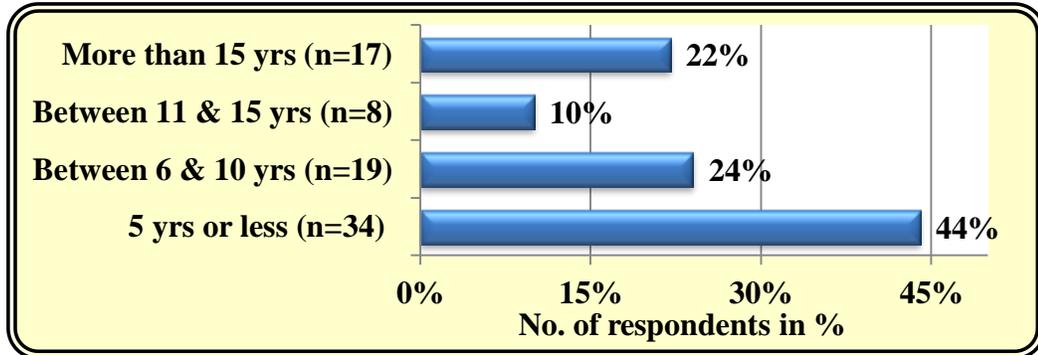


TABLE 7.7
ANNUAL INCOME IN TERMS OF AMERICAN DOLLARS

ANNUAL INCOME	Frequency	Percent
\$60,000 or less	42	54%
Between \$60,001 and \$90,000	13	17%
Between \$90,001 and \$120,000	11	14%
Between \$120,001 and \$150,000	5	6%
More than \$150,000	7	9%
Total	78	100%

Finally, the respondents were also asked to indicate the level of their current salaries. As indicated in Table 7.7, 54% of our sample claim to earn 20,000 Kuwaiti Dinar (\$60,000) or less per year, this compares with 9% who earn more than 50,000 Kuwaiti Dinar (\$150,000). This illustrates that our sample is composed of a variety of respondents holding diverse levels of incomes, from both the public and private sector.

To summarise, we can say that our sample is dominated by Kuwaitis with a very high level of education, working in the private sector and holding high

managerial positions. The sample represents various aged groups, has differential years of working experience and is predominantly male.

7.3 INNOVATION ANALYSIS

In order to produce a comprehensive classification of the “best – worst” sector, we first allocated a weighting for each response provided by the respondents. Although a variety of weightings could be used, after experimentation we settled for the weighting criteria in Table 7.8.

**TABLE 7.8
BEST AND WORST SECTOR WEIGHING**

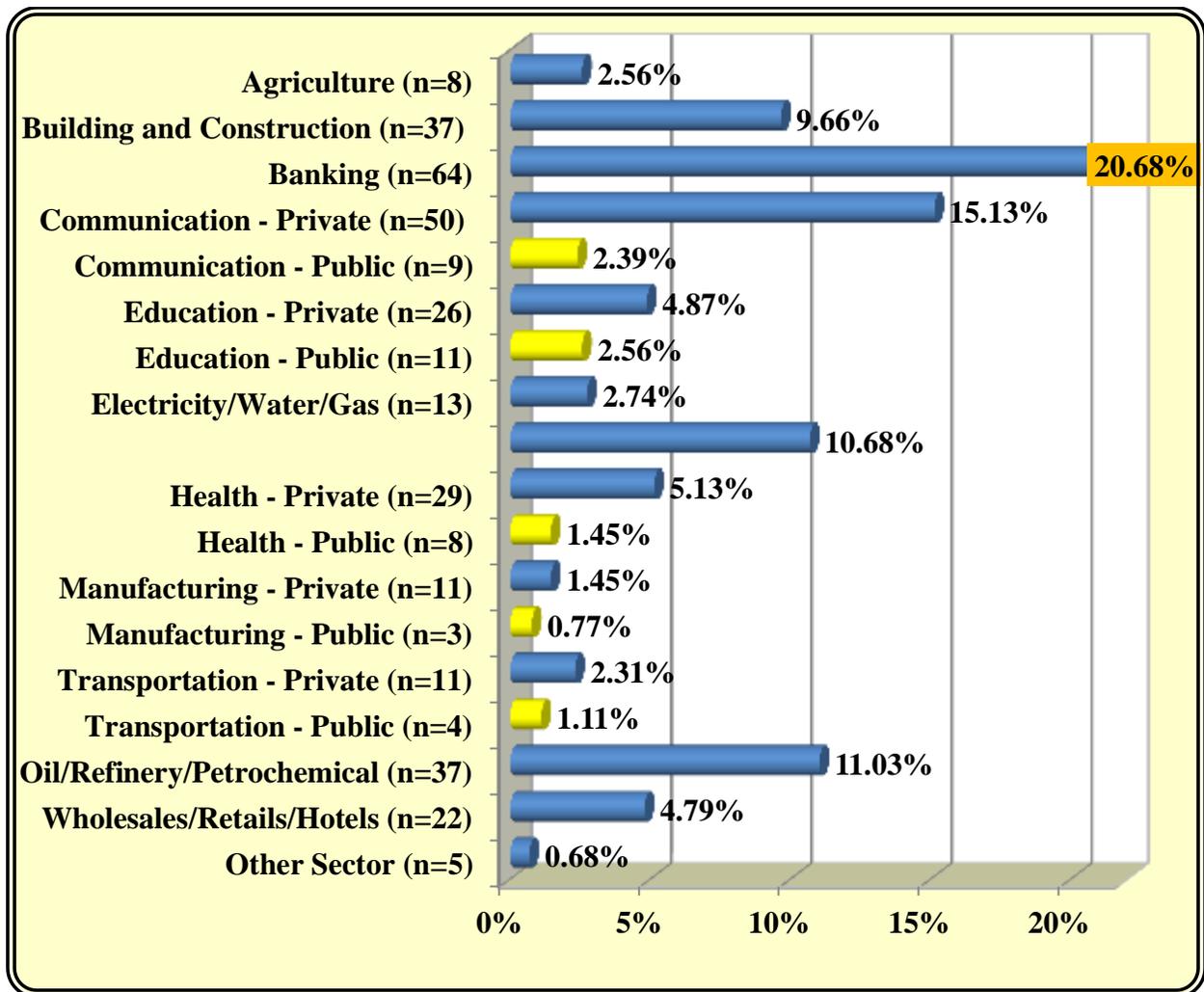
“Best” sector weighting	“Worst” sector weighting
First best place: Scores 5 points	First worst place: Scores 5 points
Second best place: Scores 4 points	Second worst place: Scores 4 points
Third best place: Scores 3 points	Third worst place: Scores 3 points
Fourth best place: Scores 2 points	Fourth worst place: Scores 2 points
Fifth best place: Scores 1 points	Fifth worst place: Scores 1 point

7.3.1 THE BEST INNOVATIVE SECTORS

The first task of our research was to ascertain which sectors were doing well and which ones were lagging behind. Figure 7.7 illustrates all the sectors and denotes how they were ranked by our respondents in terms of being the most “innovative”. Clearly of all the 18 sectors listed, the banking sector was cited most often (20.68%), followed by the private communications sector (15.13%), the oil/refinery and petrochemical sector (11.03%), the finance, insurance, real estate and business services industries (10.68%) and the fifth ranked sector was building and construction (9.66%). These results are not really surprising as it is these

industries that are often viewed as being at the forefront of the Kuwaiti economy and, indeed, they show clear dynamism and competitiveness within the GCC and even the MENA (Middle East and North Africa) region). Although the country's main resource is oil, this industry along with building and construction was only ranked third and fifth respectively. The implications are that even though oil production is the major source of revenue in Kuwait, the ability of the industry to innovate is very limited. One should expect innovation in this sector to be high. The inability of the oil sector to be the most innovative sector may suggest a possible resource curse effect.

FIGURE 7.7
THE MOST INNOVATIVE SECTORS IN KUWAIT



The same figure also shows that all the sectors under the umbrella of the government (except oil) scored very low, being perceived as industries where not much innovation is taking place. In other words, our sample appears to indicate that sectors like public health, education, transportation and even utilities are (not in the respondents' views) adapting to the pace of innovation, all scoring an average of just over 2%.

The next task was to find out the reasons why these industries are perceived to be in the forefront of innovation. In order to achieve this (and to avoid any loss of gathered information), we extracted all the information related to the best 5 sectors identified above (banking; private communications; oil/refinery and petrochemical; finance, insurance, real estate and business services industries; and finally building and construction) with comments both from those who felt these sectors were innovative and from those who did not think it was the case. This classification scoops all the available information (good or bad) about these sectors. Table 7.9 indicates the number of respondents that classified these five identified sectors as best and those that classified them as worst. As the number of respondents classifying these sectors as worse is small (ranging from 3% to 20%), it was decided to focus our analysis here on the respondents that classified these sectors as best. Therefore the tables that will be provided in the subsequent analysis will only show the reasons given by those respondents ranking the sector as best, although some comments will be made in the discussion about those ranking these same sectors as worst. Nine indicators(attributes) were identified to illustrate the extent of innovation in the various sectors. These indicators (attributes) include:

- Public expenditure on research and development;
- Good links with foreign direct investment;
- Dynamic small and medium enterprises;
- Competitive small and medium enterprises;
- Level of expenditure on ICT;

Use of science/engineering graduates;
 Level of industry expenditure on research and development;
 Level of manufacturing expenditure; and
 Industry receiving public money for innovation

These indicators (attributes) are consistent with studies conducted by Trott (2005).

**TABLE 7.9
 NUMBER OF RESPONDENTS RANKING THE BEST SECTORS (BEST VS.
 WORST)**

<u>Best ranked sectors</u>	Number of respondents ranking the sector	Respondents ranking the sector as BEST (%)		Respondents ranking the sector as WORST (%)	
	N	n	%	n	%
1 - Banking	66	64	97%	2	3%
2 - Private Communication	54	50	93%	4	7%
3 - Oil, Refinery & Petrochemical	42	37	88%	5	12%
4 - Finance, Insurance & R. Estate & Business Services	46	42	91%	4	9%
5 - Building & Construction	46	37	80%	9	20%

Tables 7.9 and 7.10 indicate that 66 respondents provided their opinions about the **Banking** industry, of which 97% ranked it as best. Next, nine different reasons were presented to the respondents as to why this may be so. Table 7.10 indicates that the best reason respondents' felt helped the banking sector to be innovative was: the high level of expenditure on Information & Communication Technologies (ICT) (70%). The other reasons that were identified as helping the banking sector to be most innovative scoring over 50%, are: the industry's good links and access to

Foreign Direct Investment (FDI) (58%), the dynamism of the sector, its competitiveness and its level of expenditure on R&D (53% and 52%).

TABLE 7.10
REASONS FOR SELECTING THE FIRST BEST SECTOR

Reasons for selecting No. 1 best sector BANKING	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	N	%	n	%	n	%
1 - Public expenditure on R&D	18	28%	12	19%	13	20%	21	33%	64	100%
2 - Good links with FDI	6	9%	9	14%	12	19%	37	58%	64	100%
3 - Dynamic SME sectors	2	3%	11	17%	17	27%	34	53%	64	100%
4 - Competitive SME sectors	3	5%	13	20%	15	23%	33	52%	64	100%
5 - Level of expenditure on ICT	1	2%	9	14%	9	14%	45	70%	64	100%
6 - Level / use of science/engineering graduates	12	19%	15	23%	14	22%	23	36%	64	100%
7 - Level of industry expenditure on R&D	9	14%	4	6%	18	28%	33	52%	64	100%
8 - Level of manufacturing expenditure	19	30%	8	13%	20	31%	17	27%	64	100%
9 - Industry receives public money for innovation	15	23%	16	25%	19	30%	14	22%	64	100%

Amongst those that did not perceive the banking sector as being innovative (3% - Table 7.9) several reasons were cited: the industry relies too much on public money to innovate, insufficient recruitment of science and engineering graduates, and the lack of competitiveness within the industry.

Out of the 54 respondents that provided their opinions on the **Private Communication** sector, 93% of them believe that this sector is innovative (Table 7.9). Table 7.11 indicates that the main reasons behind their beliefs is the high level of ICT expenditure (88%), the high level of recruitment of newly graduated students that are capable of bringing new ways of doing things and implementing the latest concepts and techniques (70%), and also because the sector is competitive (66%). However 7% (Table 7.9) did not agree and felt the sector lacks dynamism and that it relies too much on public money to innovate.

TABLE 7.11
REASONS FOR SELECTING THE SECOND BEST SECTOR

Reasons for selecting No. 2 best sector PRIVATE COMMUNICATION	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	n	%	n	%	n	%
1 - Public expenditure on R&D	17	34%	9	18%	12	24	12	24%	50	100%
2 - Good links with FDI	5	10%	8	16%	10	20	27	54%	50	100%
3 - Dynamic SME sectors	5	10%	10	20%	12	24	23	46%	50	100%
4 - Competitive SME sectors	2	4%	8	16%	7	14	33	66%	50	100%
5 - Level of expenditure on ICT	0	0%	5	10%	1	2%	44	88%	50	100%
6 – Level / use of science/engineering graduates	2	4%	8	16%	5	10%	35	70%	50	100%
7 - Level of industry expenditure on R&D	3	6%	8	16%	10	20%	29	58%	50	100%
8 - Level of manufacturing expenditure	4	8%	8	16%	12	24%	26	52%	50	100%
9 - Industry receives public money for innovation	12	24%	15	30%	9	18%	14	28%	50	100%

The third best innovative sector is the **Oil, Refinery and Petrochemical** sector. Here the respondents agree and strongly agree that the innovation was possible thanks to the amount of government support on R&D public expenditure and the high level of science and engineering graduate recruitment (81% and 70% respectively) as shown in Table 7.12. As these industries represent the backbone of the Kuwaiti economy and generate funds for social welfare investments it is not surprising therefore that the government invests in R&D and on education, so as to support the recruitment of well qualified science and engineering students.

Amongst those that expressed their opinions unfavourably about this industry (12% - Table 7.9), these respondents believe that innovation is not taking place because the oil, refinery and petrochemical sector is not competitive and the level of expenditure on ICT is too low.

TABLE 7.12
REASONS FOR SELECTING THE THIRD BEST SECTOR

Reasons for selecting No. 3 best sector OIL/REFINERY/PETROCHEMICAL	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	n	%	N	%	n	%
1 - Public expenditure on R&D	0	0%	2	5%	5	14%	30	81%	37	100%
2 - Good links with FDI	2	5%	5	14%	6	16%	24	65%	37	100%
3 - Dynamic SME sectors	5	14%	7	19%	12	32%	13	35%	37	100%
4 - Competitive SME sectors	6	16%	12	32%	10	27%	9	24%	37	100%
5 - Level of expenditure on ICT	0	0%	10	27%	7	19%	20	54%	37	100%
6 - Level /use of science/engineering graduates graduates	0	0%	5	14%	3	8%	29	78%	37	100%
7 - Level of industry expenditure on R&D	2	5%	2	5%	7	19%	26	70%	37	100%
8 - Level of manufacturing expenditure	0	0%	3	8%	6	16%	28	76%	37	100%
9 - Industry receives public money for innovation	2	5%	4	11%	11	30%	20	54%	37	100%

The fourth best sector with regard to innovation is the **Finance, Insurance, Real Estate and Business Services** sector. Table 7.9 indicates that out of the 46 respondents that selected this sector, 91% of them believe that they are strongly innovative in their respective fields. The reasons identified as fostering innovation are: the good existing links with FDI (62%), an acceptable level on ICT expenditure (57%), followed closely by the competitiveness of the sector (55%) as illustrated in Table 7.13. When examining the responses of those that believe these sectors are not innovative (9% - Table 7.9), we found that the biggest critique was because the industry relies on public money to innovate.

TABLE 7.13
REASONS FOR SELECTING THE FOURTH BEST SECTOR

Reasons for selecting No. 4 best sector FINANCE/INSURANCE/ REAL ESTATE/ BUSINESS SERVICES	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	n	%	n	%	n	%
1 - Public expenditure on R&D	12	29%	11	26%	9	21%	10	24%	42	100%
2 - Good links with FDI	4	10%	5	12%	7	17%	26	62%	42	100%
3 - Dynamic SME sectors	3	7%	9	21%	8	19%	22	52%	42	100%
4 - Competitive SME sectors	4	10%	6	14%	9	21%	23	55%	42	100%
5 - Level of expenditure on ICT	2	5%	4	10%	12	29%	24	57%	42	100%
6 - Level / use of science/engineering graduates	10	24%	8	19%	10	24%	14	33%	42	100%
7 - Level of industry expenditure on R&D	6	14%	8	19%	14	33%	14	33%	42	100%
8 - Level of manufacturing expenditure	8	19%	9	21%	17	40%	8	19%	42	100%
9 - Industry receives public money for innovation	6	14%	11	26%	12	29%	13	31%	42	100%

The fifth and final best sector **Building and Construction** was seen as innovative mainly because of its competitiveness (74%) and its ability to attract foreign direct investments to the country (65%), as illustrated in Table 7.14. On the other hand the 20% (Table 7.9) who feel the industry is not innovative attributed this to the level of expenditure on ICT (attribute 5).

TABLE 7.14
REASONS FOR SELECTING THE FIFTH BEST SECTOR

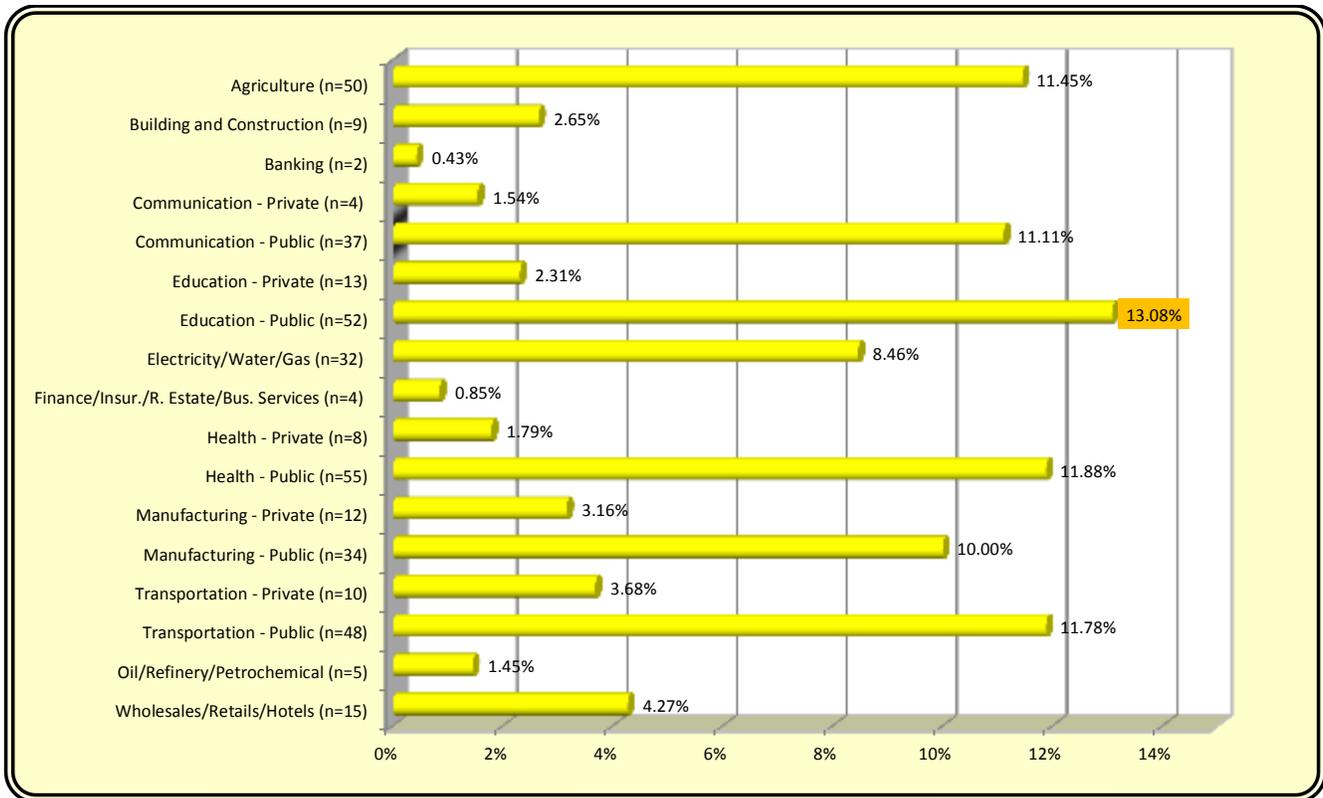
Reasons for selecting No. 5 best sector BUILDING AND CONSTRUCTION	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	N	%	n	%	n	%	n	%	n	%
1 - Public expenditure on R&D	6	16%	4	11%	7	19%	20	54%	37	100%
2 - Good links with FDI	3	8%	5	14%	5	14%	24	65%	37	100%
3 - Dynamic SME sectors	0	0%	4	11%	13	35%	20	54%	37	100%
4 - Competitive SME sectors	0	0%	0	0%	9	24%	28	76%	37	100%
5 - Level of expenditure on ICT	4	11%	8	22%	15	41%	10	27%	37	100%
6 - Level / use of science/engineering graduates	3	8%	7	19%	8	22%	19	51%	37	100%
7 - Level of industry expenditure on R&D	5	14%	9	24%	8	22%	15	41%	37	100%
8 - Level of manufacturing expenditure	6	16%	2	5%	11	30%	18	49%	37	100%
9 - Industry receives public money for innovation	3	8%	1 4	38%	4	11%	16	43%	37	100%

To conclude this first section on the most innovative sectors and the underlying reasons for this, we can say that it is the banking industry that clearly leads the way, followed by the private communications sector. The third, fourth and fifth most innovative sectors were very closely ranked: Oil, Refinery and Petrochemical industries; Finance, Insurance and Real Estate and Business Services; and Building and Construction. When examining the main reasons for classifying these sectors as being innovative, generally speaking we can say that it is because of their high to moderate level of expenditure on ICT, their good links with FDI, and also for their recruitment of science and engineering graduates. Amongst those that perceived these industries as not innovative, there seems to be a perception that it is because they do not receive enough public money to innovate (except for the oil, refinery and petrochemical sector). This is not an unexpected result if we recall that the State of Kuwait does help and support most industries, public and private. People in Kuwait are used to seeing the government giving financial support to any organisation and/or sector that requests assistance and/or help. For some people, it seems the role of the government and public finances is crucial for innovation to take place.

7.3.2 THE WORST INNOVATIVE SECTORS

In this section we analyze the situation of those sectors that have been identified as lagging behind in the innovation field, weighting each response provided by the respondents as presented at the start of the previous section (see Table 7.8).

FIGURE 7.8
THE LEAST INNOVATIVE SECTORS IN KUWAIT



The general results clearly identify the public sector and its various industries as poor innovators (along with the agricultural sector, although this is hardly existent in Kuwait). Figure 7.8 shows the aggregate findings regarding the worst innovative sectors. It can be seen that our respondents classified the public education sector as being the worst in innovation terms (13.08% of respondents); followed by both the public health (11.88%) and

public transport sectors (11.78% each), the agricultural sector (11.45%) and the public communications sector (11.11%). Apart from the public education sector, ranked worst with a percentage point of 13%; all the other identified sectors scored similar results with percentages around the 11% mark. This suggests, perhaps, that all the sectors belonging to the public sector (with the exception of the oil/refining/petroleum sector) are being perceived as doing equally poorly in terms of innovation, with education being perceived the worst.

In order to identify the reasons as to why respondents classified these sectors as least innovative (as with the best sectors), here again we extracted all the information provided about these sectors, including those respondents that claimed these sectors were not innovative, and the rather smaller number of respondents who conversely viewed these five sectors as innovative (Table 7.15).

TABLE 7.15
NUMBER OF RESPONDENTS RANKING THE WORST SECTORS
(WORST VS. BEST)

<u>Worst ranked sectors</u>	Number of respondents ranking the sector	Respondents ranking the sector as WORST (%)		Respondents ranking the sector as BEST (%)	
	N	n	%	n	%
1 - Public Education	63	52	83%	11	17%
2 - Public Health	63	55	87%	8	13%
3 - Public Transportation	52	48	92%	4	8%
4 - Agriculture	58	50	86%	8	14%
5 - Public Communication	46	37	80%	9	20%

To start with the least innovative sector **public education**, 48% of respondents believe that both the level of expenditure on ICT and the level

of recruitment of science and engineering graduates are not sufficient to allow this sector to be innovative (Table 7.16). When examining the responses of those that claim the public education sector is in fact innovative (17%), it seems that this is principally because the government supports the sector through money spent on R&D.

TABLE 7.16
REASONS FOR SELECTING THE FIRST WORST SECTOR

Reasons for selecting No. 1 worse sector PUBLIC EDUCATION	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	n	%	n	%	n	%
1 - Public expenditure on R&D	4	8%	18	35%	10	19%	20	38%	52	100%
2 - Good links with FDI	12	23%	21	40%	7	13%	12	23%	52	100%
3 - Dynamic SME sectors	12	23%	17	33%	16	31%	7	13%	52	100%
4 - Competitive SME sectors	12	23%	10	19%	16	31%	14	27%	52	100%
5 - Level of expenditure on ICT	4	8%	25	48%	4	8%	19	37%	52	100%
6 - Level / use of science/engineering graduates	6	12%	25	48%	7	13%	14	27%	52	100%
7 - Level of industry expenditure on R&D	11	21%	21	40%	11	21%	9	17%	52	100%
8 - Level of manufacturing expenditure	15	29%	11	21%	15	29%	11	21%	52	100%
9 - Industry receives public money for innovation	9	17%	15	29%	9	17%	19	37%	52	100%

The second worst sector in innovative terms was the **Public Health** sector. The reasons behind this poor perception can be seen in Table 7.17. The factor that seems to matter the most to respondents (87% of respondents classified this sector as the second worst - Table 7.15) is that the public health industry as a whole is not spending enough on R&D to allow it to innovate (47%). For those that believe that the public health sector is innovative (13% - Table 7.15), this belief is linked to the (sufficient) number of science and engineering graduates employed.

TABLE 7.17
REASONS FOR SELECTING THE SECOND WORST SECTOR

Reasons for selecting No. 2 worse sector PUBLIC HEALTH	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	n	%	n	%	n	%
1 - Public expenditure on R&D	2	4%	20	36%	15	27%	18	33%	55	100%
2 - Good links with FDI	8	15%	24	44%	13	24%	10	18%	55	100%
3 - Dynamic SME sectors	11	20%	23	42%	16	29%	5	9%	55	100%
4 - Competitive SME sectors	14	25%	11	20%	20	36%	10	18%	55	100%
5 - Level of expenditure on ICT	1	2%	21	38%	18	33%	15	27%	55	100%
6 - Level / use of science/engineering graduates	4	7%	14	25%	10	18%	27	49%	55	100%
7 - Level of industry expenditure on R&D	3	5%	26	47%	10	18%	16	29%	55	100%
8 - Level of manufacturing expenditure	16	29%	15	27%	10	18%	14	25%	55	100%
9 - Industry receives public money for innovation	2	4%	19	35%	8	15%	26	47%	55	100%

The third worst innovative sector is **Public Transportation**. Table 7.18 indicates the reasons behind this lack of innovation. These are reasons linked to the lack of investment on ICT (54%) and R&D, both through government help and private initiatives (52% and 44%) and the **level** of competition (6%). There is a lack of support by the government to modernize and invest in this sector, explained perhaps by the fact that public transportation is only used by the foreign population coming in from South East Asia and other Arab countries, and never by the Kuwaitis and other expatriates that have their own private means of transport. A smaller group of respondents, 8%, (Table 7.15) did view public transportation as innovative, claiming that this is happening thanks to government expenditure on R&D and the provision of sufficient public money to allow innovation to take place.

TABLE 7.18
REASONS FOR SELECTING THE THIRD WORST SECTOR

Reasons for selecting No. 3 worse sector PUBLIC TRANSPORTATION	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	N	%	n	%	n	%
1 - Public expenditure on R&D	4	8%	21	44%	7	15%	16	33%	48	100%
2 - Good links with FDI	12	25%	19	40%	7	15%	10	21%	48	100%
3 - Dynamic SME sectors	4	8%	19	40%	19	40%	6	13%	48	100%
4 - Competitive SME sectors	6	13%	22	46%	16	33%	4	8%	48	100%
5 - Level of expenditure on ICT	5	10%	26	54%	5	10%	12	25%	48	100%
6 - Level / use of science/engineering graduates	8	17%	19	40%	10	21%	11	23%	48	100%
7 - Level of industry expenditure on R&D	6	13%	25	52%	8	17%	9	19%	48	100%
8 - Level of manufacturing expenditure	15	31%	18	38%	5	10%	10	21%	48	100%
9 - Industry receives public money for innovation	4	8%	18	38%	12	25%	14	29%	48	100%

The fourth least innovative sector, as perceived by 86% of the respondents (Table 7.15) is the **Agricultural** sector. The key reason for this failure in the innovative field (Table 7.19) is seen as due to the lack of competitiveness in this sector (46% of the respondents). This can be attributed to the fact that the agricultural sector only represents a very small percentage of Kuwaiti GDP and, as a consequence, is not seen as a strategic industry for the economy to focus on. Moreover, due to the hostile climate, it is (and will remain) much cheaper to import agricultural products than it will be to produce them locally.

Those who perceive that the agricultural sector is innovative, 14% (Table 7.15), link this to the level of public expenditure on R&D.

TABLE 7.19
REASONS FOR SELECTING THE FOURTH WORST SECTOR

Reasons for selecting No. 4 worse sector AGRICULTURE	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	N	%	n	%	n	%	n	%	n	%
1 - Public expenditure on R&D	4	8%	11	22%	13	26%	22	44%	50	100%
2 - Good links with FDI	9	18%	17	34%	11	22%	13	26%	50	100%
3 - Dynamic SME sectors	5	10%	18	36%	13	26%	14	28%	50	100%
4 - Competitive SME sectors	6	12%	23	46%	10	20%	11	22%	50	100%
5 - Level of expenditure on ICT	4	8%	21	42%	10	20%	15	30%	50	100%
6 - Level / use of science/engineering graduates	2	4%	18	36%	16	32%	14	28%	50	100%
7 - Level of industry expenditure on R&D	5	10%	15	30%	11	22%	19	38%	50	100%
8 - Level of manufacturing expenditure	15	30%	15	30%	10	20%	10	20%	50	100%
9 - Industry receives public money for innovation	9	18%	14	28%	9	18%	18	36%	50	100%

The final sector to have been identified (fifth worst) is the **Public Communications** sector. The 37 respondents who perceived the public communications sector as not innovative enough, attribute this to the fact that it is operating under the Ministry of Communication and therefore lacks sufficient State expenditures on R&D (46%) as shown in Table 7.20. Meanwhile the respondents, 20%, (Table 7.15) who perceive the public communications sector as being sufficiently innovative attributed this to the receipt of sufficient public money and the recruitment of enough science and engineering graduates to allow it to innovate.

TABLE 7.20
REASONS FOR SELECTING THE FIFTH WORST SECTOR

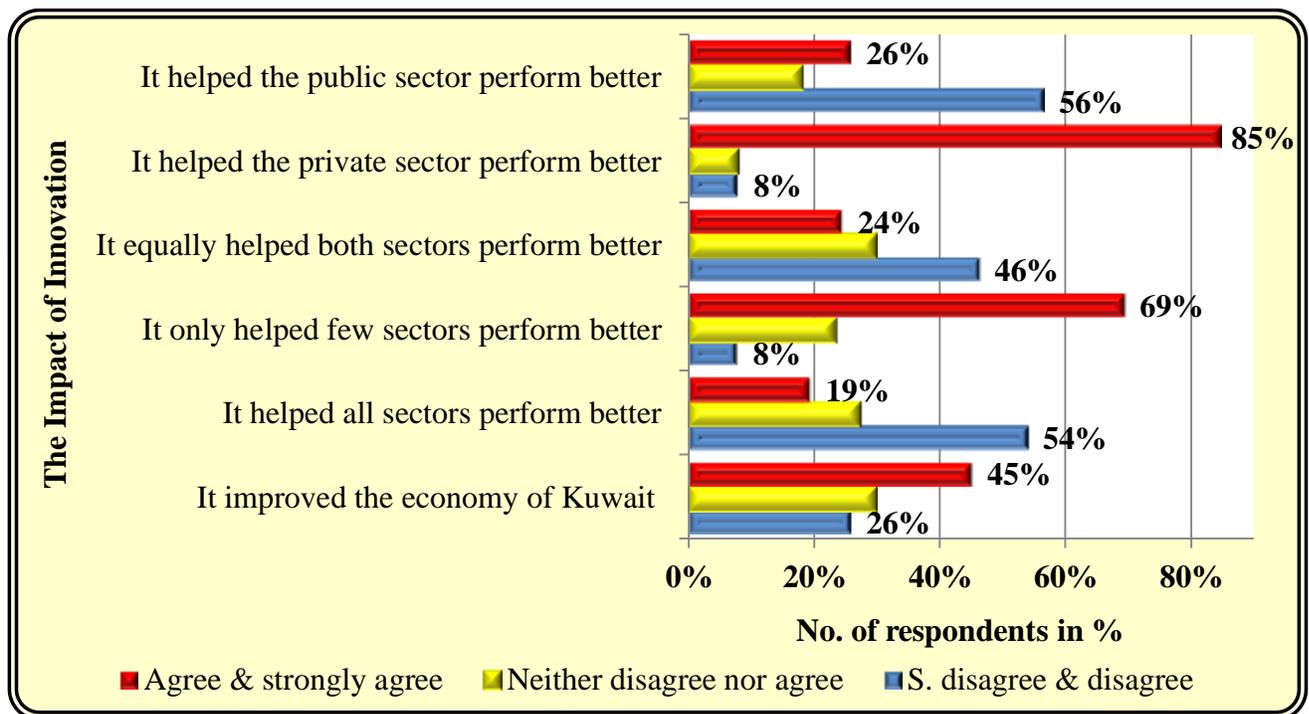
Reasons for selecting No. 5 worse sector PUBLIC COMMUNICATION	Not applicable		Strongly disagree & disagree		Neither disagree nor agree		Agree & strongly agree		TOTAL	
	n	%	n	%	n	%	n	%	n	%
1 - Public expenditure on R&D	5	14%	9	24%	7	19%	16	43%	37	100%
2 - Good links with FDI	12	32%	12	32%	5	14%	8	22%	37	100%
3 - Dynamic SME sectors	14	38%	8	22%	9	24%	6	16%	37	100%
4 - Competitive SME sectors	13	35%	12	32%	7	19%	5	14%	37	100%
5 - Level of expenditure on ICT	2	5%	12	32%	1	38%	9	24%	37	100%
6 - Level / use of science/engineering graduates	2	5%	10	27%	8	22%	17	46%	37	100%
7 - Level of industry expenditure on R&D	7	19%	17	46%	4	11%	9	24%	37	100%
8 - Level of manufacturing expenditure	10	27%	14	38%	7	19%	6	16%	37	100%
9 - Industry receives public money for innovation	7	19%	11	30%	0	0%	19	51%	37	100%

To summarize, this second section of the data analysis has identified the worst sectors in the field of innovation (and the reasons that might be associated with this failure). We have shown that respondents view the public sector, with its various branches (education, health, transportation and communication), as well as agriculture as being the poorest performers. On one hand, we can understand why the agricultural sector is not a major innovating industry, as it is cheaper to import many food products than produce them locally. On the other hand, understanding why the other sectors are not viewed as innovating is more problematic. Public health and education, two central pillars in any country's economy, are seen as underperforming in the innovation field, despite significant levels of financial investment year on year in both sectors.

7.4 IMPACT OF INNOVATION ANALYSIS

Our sample was also asked to give us their perception about the impact of innovation within the State of Kuwait. Six different statements were presented to the respondents and they were asked to comment upon these statements according to a 5 point Likert scale (from strongly disagree to strongly agree). Figure 7.9 illustrates the answers of our 78 respondents.

FIGURE 7.9
PERCEPTION: THE IMPACT OF INNOVATION IN KUWAIT



When asked whether innovation helped the private sector perform better, 85% claimed to be in total agreement with this statement, representing the highest registered score. The other statement that also recorded a very high rate of approval (69%) suggested innovation did not benefit all, and only helped a few industries perform better - although 45% of the respondents did claim that it had impacted favourably on Kuwaiti

development. So we can say that “yes”, innovation has made a contribution to national development, but the perception for many is that it has only benefited few industries.

An examination of the disapproval rates indicates that 56% of the respondents felt that innovation had not helped the public sector perform better, with 46% expressing the view that innovation had benefited the private, rather than the public sector.

We went a step further in our analysis and asked our respondents what would then be the factors that, in their opinion, would enhance innovative behavior in the state of Kuwait. These innovation enhancers are consistent with studies already cited in this study. Table 7.21 indicates that "increasing knowledge and education to allow more creativity" was supported by 30% of all respondents. In fact, Tony Blair, former Prime Minister of the United Kingdom has, in the reform agenda he prepared for a Kuwait Vision 2035 documentary, identified "Upgrading the Education System" as an important point.

The following steps were proposed to increase the performance orientation of schools in the Kuwait Vision document:

- introduce competition among schools,
- introduce private sector elements into the public school system,
- allow for outsourced private sector management of schools, where providers can offer the Government "turnkey" solutions to create high performing schools,
- recruit the system for administrating exams and conducting school inspection,
- establish an independent monitoring and evaluation unit
(Rt. Hon. Tony Blair, Vision Kuwait 2035, executive summary).

TABLE 7.21

WAYS TO ENHANCE INNOVATION IN KUWAIT

Best ways to enhance innovative behaviour in Kuwait	Frequency	Percent
Better implementation with the application of quality control	8	14%
Better IT usage at all levels & in all sectors	4	7%
Change of attitude & mentality with better work ethics	8	14%
Good training and development	8	14%
Increase expenditures & more R&D	5	9%
Increase knowledge & education to allow more creativity	17	30%
Open up the country, promote FDI & private initiatives	14	25%
Total	56	100%

When directly asked whether foreign investment could help stimulate innovation in the State of Kuwait, the results showed a resounding “yes” (with 89%), as shown in Figure 7.10. It is clear that there is a strong belief that innovating improvement can be achieved through foreign investment. When asked how this can be achieved, different suggestions were made as documented in Table 7.22. The respondents’ claims that foreign investment will enhance competitiveness topped all suggestions (with 38%); followed by the fact that it will bring know-how and expertise (with 31%). Moreover, it was felt this can only be achieved if there is a clear reduction of bureaucracy, coupled with the creation of better rules and regulations that favour the influx of foreign investment (21%). Tony Blair, in The Vision document, agrees that Kuwait can reduce the direct costs of starting a business by reducing general licensing and registration fees to a minimum and eliminating minimum capital requirements. Ideally, a one-stop-shop for business start-ups should be set up in order to streamline processes and improve coordination of authorities. The Vision document also suggests Kuwait should reduce the burden of customs rules and procedures, streamline international trade procedures, create integrated customs zones

and improve the visa regime so as to be more attractive to foreign investors (Rt. Hon. Tony Blair, 2010).

FIGURE 7.10
FOREIGN INVESTMENT AS A STIMULUS TO HELP INNOVATE

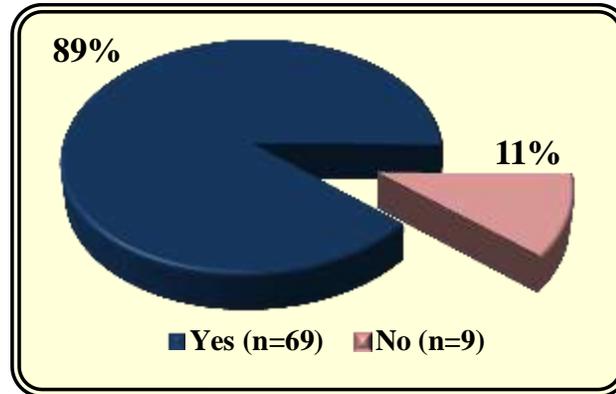


TABLE 7.22
MOST IMPORTANT WAY FOREIGN INVESTMENTS CAN HELP STIMULATE INNOVATION IN KUWAIT

Foreign Investments can help stimulate innovation in Kuwait	Frequency	Percent
If bureaucracy is reduced & better rules & regulations are put in place	11	21%
It will bring know-how and expertise	16	31%
It will create competitiveness	20	38%
It will enable better education for Kuwaitis	5	9%
Total	52	100%

We also checked how gender and nationality impacted upon these statements, using cross tabulation techniques. First, in the case of gender (Table 7.23), we can observe that for Impact 1 (Innovation has helped the public sector perform better) and Impact 3 (Innovation has equally helped both the public and private sector perform better) females tend to strongly disagree/disagree significantly more than males (63% and 60% compared to 52% and 38%). However when looking at Impact 2 (Innovation has helped the private sector perform better),

although both results are very high, it is the males that are voicing a stronger favourable opinion (with 88% compared to 80% for females). There is also a slight difference regarding Impact 6 (Innovation has improved the economy of Kuwait), where female respondents agree/ strongly agree (47%) slightly more compared to the males (44%). Out of the four cases, however, only Impact 3 (Innovation has equally helped both the public and private sector perform better) shows a statistically significant difference between genders (Table 7.23), although reasons for this difference in opinion are not immediately clear.

TABLE 7.23
GENDER VERSUS INNOVATION IMPACT CROSS TABULATION

		IMPACT 1			IMPACT 2			IMPACT 3			IMPACT 6		
		1&2	3	4&5	1&2	3	4&5	1&2	3	4&5	1&2	3	4&5
FEMALE	Count	19	5	6	4	2	24	18	7	5	10	6	14
	%	63%	17%	20%	13%	7%	80%	60%	23%	17%	33%	20%	47%
MALE	Count	25	9	14	2	4	42	18	16	14	10	17	21
	%	52%	19%	29%	4%	8%	88%	38%	33%	29%	21%	35%	44%
Pearson Chi-Square [Asymp. Sig. (2-sided)]		Sig: .594 (df:4)			Sig: .070 (df:4)			Sig: .021 (df:4)			Sig: .618 (df:4)		

1&2 = S. disagree & disagree; 3 = Neither disagree nor agree; 4&5 = Agree & strongly agree

Gender versus innovation impact was a casual observation. No meaningful inferences can be made but it would suffice to say that further research should be conducted to make more significant inferences. A similar analysis was carried out with regard to the nationality of the respondents. In three out of four of the studied impact statements (Impact 1, 2 and 3), it is the Kuwaiti nationals that tend to hold the strongest beliefs. However when it came to Impact 6 (Innovation has significantly improved the economy of Kuwait), it is the non-Kuwaitis that agree and most strongly agree with this

statement (56% against 39% for Kuwaitis). This latter result is the only result that proved to be statistically significant however (Table 7.24).

TABLE 7.24
NATIONALITY VERSUS INNOVATION IMPACT CROSS TABULATION

		IMPACT 1			IMPACT 2			IMPACT 3			IMPACT 6		
		1&2	3	4&5	1&2	3	4&5	1&2	3	4&5	1&2	3	4&5
Kuwaiti	Count	29	8	14	4	3	44	26	14	11	13	18	20
	%	57%	16%	27%	8%	6%	86%	51%	27%	22%	25%	35%	39%
Non-Kuwaiti	Count	15	6	6	2	3	22	14	9	8	7	5	15
	%	56%	22%	22%	7%	11%	82%	37%	33%	30%	26%	19%	56%
Pearson Chi-Square [Asymp. Sig. (2-sided)]		Sig: .885 (df:4)			Sig: .698 (df:4)			Sig: .336 (df:4)			Sig: .035 (df:4)		

1&2 = S. disagree & disagree; 3 = Neither disagree nor agree; 4&5 = Agree & strongly agree

7.5 INNOVATION WITHIN THE GCC

In the final section of our questionnaire about innovation we asked our respondents to classify the 6 GCC countries in terms of how advanced they were in innovation terms. The results are very clear (and to a certain extent were expected). Ranked top is the United Arab Emirates (UAE). Selected by 83% of respondents, the UAE was the only country never classified below third place. Second in the ranking came Qatar, with a score of 41%, here again a very much expected result given the speed of development this country has experienced in a very short period of time. In third place was Saudi Arabia with 26%, followed by Kuwait in fourth position, then Bahrain and finally Oman (Table 7.25).

TABLE 7.25
INNOVATION ADVANCEMENT IN THE GCC COUNTRIES

	BAHRAIN (n=73)	KUWAIT (n=72)	OMAN (n=72)	QATAR (n=73)	S. ARABIA (n=72)	UAE (n=76)
First	1%	4%	1%	7%	4%	83%
Second	15%	13%	8%	41%	14%	11%
Third	15%	19%	10%	23%	26%	7%
Fourth	18%	35%	13%	10%	25%	0%
Fifth	30%	13%	28%	14%	14%	0%
Sixth	21%	17%	40%	5%	17%	0%
	100%	100%	100%	100%	100%	100%

When asked for the reasons behind ranking a country first, as our results predominantly put the UAE well ahead of the rest, we will focus mainly on the comments made about the UAE. In general, our respondents clearly believe that the UAE is the regional leader in the field of innovation because it is bureaucracy free; investors who wish to establish themselves and bring their know-how to the country are welcomed. The country managed to eliminate much of its administrative paper work to allow things to happen/start happening respondents felt, and consequently it has created a dynamic environment where innovation can thrive. All this could only happen with leaders believing in change, strong strategic planning and with a vision of where they want to see the UAE in the future. As a consequence, the country has managed to innovate in most sectors, while at the same time encouraging and creating new (and various) market opportunities for locals as well as foreigners.

7.6 DEMOGRAPHIC AND ORGANIZATIONAL CHARACTERISTIC COMPARISONS

We also tested a series of hypotheses to check whether there are significant differences in the mean scores between groups. The groups being tested concern gender, nationality, and working sector and employment position. Two types of tests were carried out, the independent t-test (two groups) and the analysis of variance - ANOVA (more than two groups). The formulation of the hypothesis is based on previous studies conducted in the region by the Arab Planning Institute. While the testing of these hypothesis were not originally intended the data available allowed the author to move the study further providing an impetus for further research in this area.

GENDER HYPOTHESES:

- H1G:** There are significant differences between males and females when perceiving the 5 best sectors associated with innovation.
- H2G:** There are significant differences between males and females when perceiving the reasons for selecting the best sector associated with innovation.
- H3G:** There are significant differences between males and females when perceiving the 5 worst sectors associated with innovation.
- H4G:** There are significant differences between males and females when perceiving the reasons for selecting the worst sector associated with innovation.

In Tables 7.26 and 7.27 data relating to the comparative analysis between genders is presented. Here the Levene test results show that the equality of variance is assumed for all except for the reason "level/use of Science/Engineering graduates" when selecting the best No.1 sector (significant level $p \leq$ than 0.05).

TABLE 7.26
INDEPENDENT SAMPLE TEST FOR THE GENDER – BEST SECTOR
AND REASONS

		Levene's Test		t-test for Equality of Means				
							95% Conf. Interval	
		F	Sig.	T	Sig.-2tailed	Mean Diff.	Lower	Upper
Best sector								
Best No 1 Sector	Equal var. assumed	3.773	.056	-1.006	.318	-1.275	-3.800	1.250
	Equal var. not assumed			-1.048	.298	-1.275	-3.701	1.151
Best No 2 Sector	Equal var. assumed	.673	.415	-1.311	.194	-1.458	-3.674	.757
	Equal var. not assumed			-1.332	.188	-1.458	-3.646	.729
Best No 3 Sector	Equal var. assumed	.165	.686	1.166	.247	1.375	-.973	3.723
	Equal var. not assumed			1.173	.245	1.375	-.968	3.718
Best No 4 Sector	Equal var. assumed	.329	.568	.551	.583	.625	-1.635	2.885
	Equal var. not assumed			.556	.580	.625	-1.621	2.871
Best No 5 Sector	Equal var. assumed	.745	.391	-1.432	.156	-1.542	-3.685	.602
	Equal var. not assumed			-1.465	.148	-1.542	-3.643	.559
Reasons for selecting the best No. 1 sector: BANKING								
Public Expenditure on R&D	Equal var. assumed	.013	.908	.752	.454	.346	-.570	1.262
	Equal var. not assumed			.749	.457	.346	-.577	1.269
Good links with FDI	Equal var. assumed	.864	.355	.493	.623	.196	-.595	.986
	Equal var. not assumed			.511	.611	.196	-.569	.961
Dynamic SME Sectors	Equal var. assumed	.322	.572	-.067	.947	-.025	-.773	.723
	Equal var. not assumed			-.067	.947	-.025	-.770	.720
Competitive SME Sectors	Equal var. assumed	.068	.795	1.167	.247	.433	-.306	1.173
	Equal var. not assumed			1.175	.245	.433	-.304	1.171
Level of Expenditure on ICT	Equal var. assumed	.479	.491	-.340	.735	-.117	-.800	.567
	Equal var. not assumed			-.348	.729	-.117	-.786	.553
Level/use of Science / Engineering graduates	Equal var. assumed	5.264	.025	.554	.581	.208	-.540	.957
	Equal var. not assumed			.587	.559	.208	-.499	.916
Level of Industry Expenditure on R&D	Equal var. assumed	1.277	.262	.096	.923	.038	-.737	.812
	Equal var. not assumed			.099	.921	.038	-.719	.794
Level of Manufacturing Expenditure	Equal var. assumed	2.089	.152	1.224	.225	.471	-.295	1.237
	Equal var. not assumed			1.268	.209	.471	-.270	1.212
Industry Receives Public Money for Innovation	Equal var. assumed	.147	.703	1.447	.152	.600	-.226	1.426
	Equal var. not assumed			1.426	.159	.600	-.242	1.442

Moving to the t-test figures in both tables (and in particular looking at the column labelled Sig. (2-tailed)), only two reasons for selecting the worst sector indicate differences between men and women (significance level $p \leq$ than 0.005) as highlighted in Table 7.27. It seems that females perceive “Dynamic SME sector” and “Level of expenditure on ICT” as less important contributing factors for the public health and agricultural sector (women’s mean=2.53 compared to 1.55 for

men and women's mean=3.10 compared to 1.96 for men). Consequently hypotheses H1G, H2G, H3G are rejected and H4G is accepted for the 2 above mentioned factors and is rejected for the rest.

TABLE 7.27

INDEPENDENT SAMPLE TEST FOR THE GENDER – WORST SECTOR AND REASONS

		Levene's Test		t-test for Equality of Means				
							95% Conf. Interval	
		F	Sig.	t	Sig.-2tailed	Mean Diff.	Lower	Upper
Worst sector								
Worst No 1 Sector	Equal var. assumed	.802	.373	.327	.745	.388	-1.972	2.747
	Equal var. not assumed			.334	.739	.388	-1.927	2.702
Worst No 2 Sector	Equal var. assumed	.081	.777	.641	.523	.600	-1.264	2.464
	Equal var. not assumed			.646	.521	.600	-1.257	2.457
Worst No 3 Sector	Equal var. assumed	2.155	.146	-1.342	.183	-1.433	-3.560	.693
	Equal var. not assumed			-1.263	.212	-1.433	-3.712	.846
Worst No 4 Sector	Equal var. assumed	.579	.449	.727	.469	.913	-1.586	3.411
	Equal var. not assumed			.718	.475	.913	-1.630	3.455
Worst No 5 Sector	Equal var. assumed	.355	.553	-1.593	.115	-1.742	-3.919	.436
	Equal var. not assumed			-1.555	.126	-1.742	-3.985	.502
Reasons for selecting the worst No. 1 sector: PUBLIC HEALTH & AGRICULTURE								
Public Expenditure on R&D	Equal var. assumed	.435	.512	.898	.372	.317	-.385	1.019
	Equal var. not assumed			.881	.382	.317	-.403	1.036
Good links with FDI	Equal var. assumed	.077	.783	-.820	.415	-.292	-1.000	.417
	Equal var. not assumed			-.810	.421	-.292	-1.012	.429
Dynamic SME Sectors	Equal var. assumed	2.057	.156	2.129	.036	.763	.049	1.476
	Equal var. not assumed			2.047	.046	.763	.016	1.509
Competitive SME Sectors	Equal var. assumed	1.501	.224	1.640	.105	.592	-.127	1.310
	Equal var. not assumed			1.590	.118	.592	-.154	1.337
Level of Expenditure on ICT	Equal var. assumed	.051	.823	3.862	.000	1.142	.553	1.730
	Equal var. not assumed			3.773	.000	1.142	.536	1.748
Level/use of Science /Engineering graduates	Equal var. assumed	.831	.365	.341	.734	.133	-.646	.913
	Equal var. not assumed			.331	.742	.133	-.674	.941
Level of Industry Expenditure on R&D	Equal var. assumed	1.196	.278	1.464	.147	.492	-.177	1.160
	Equal var. not assumed			1.402	.167	.492	-.212	1.195
Level of Manufacturing Expenditure	Equal var. assumed	1.793	.185	1.692	.095	.617	-.109	1.343
	Equal var. not assumed			1.625	.110	.617	-.144	1.377
Industry Receives Public Money for Innovation	Equal var. assumed	.043	.836	.932	.354	.363	-.412	1.137
	Equal var. not assumed			.932	.355	.363	-.415	1.140

NATIONALITY HYPOTHESES

- H1N:** There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the 5 best sectors associated with innovation.
- H2N:** There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the reasons for selecting the best sector associated with innovation.
- H3N:** There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the 5 worst sectors associated with innovation.
- H4N:** There are significant differences between Kuwaitis and Non-Kuwaitis when perceiving the reasons for selecting the worst sector associated with innovation.

After testing the above four hypotheses related to nationality, the results showed no significant differences between Kuwaitis and non-Kuwaitis in terms of either their classification of the best and worst sectors, or the reasons behind their selections (Appendices 3.1 and 3.2 show the full results). Therefore all 4 hypotheses were rejected.

EMPLOYMENT SECTOR HYPOTHESES

- H1S:** There are significant differences between people employed in the private and public sector when perceiving the 5 best sectors associated with innovation.
- H2S:** There are significant differences between people employed in the private and public sector when perceiving the reasons for selecting the best sector associated with innovation.
- H3S:** There are significant differences between people employed in the private and public sector when perceiving the 5 worst sectors associated with innovation.

H4S: There are significant differences between people employed in the private and public sector when perceiving the reasons for selecting the worst sector associated with innovation.

When testing for differences according to the employment sector where the respondents operate, the results indicate that Hypotheses H1S, H2S and H4S are rejected as no significant differences were found (the results of the best sectors can be seen in Appendix 3.3). However Table 7.28 (Worst Sectors and Reasons) shows that hypothesis H3S is accepted when examining the selection of the third worst sector. In other words, choosing public transportation as the third worst choice was rated much higher by the respondents working in the private sector than the ones in the public sector (means=10.30 and 8.16 respectively). This could be explained by the fact that those working in the public sector may be less critical of what is being delivered to and, experienced by, customers than respondents based in the private sector. The rest of the hypotheses are rejected (for the worst No.1, 2 and 4 sectors), as no differences were found.

EMPLOYMENT POSITION HYPOTHESES

H1P: There are significant differences between the different employment positions when perceiving the 5 best sectors associated with innovation.

H2P: There are significant differences between the different employment positions when perceiving the reasons for selecting the best sector associated with innovation.

H3P: There are significant differences between the different employment positions when perceiving the 5 worst sectors associated with innovation.

H4P: There are significant differences between the different employment positions when perceiving the reasons for selecting the worst sector associated with innovation.

The final set of hypotheses to be tested required the use of the analysis of variance (ANOVA) technique, as we are dealing with more than two groups, namely the respondents' employment positions. The results showed no significant statistical differences between the major working positions, (namely whether one is in senior, middle, lower and/or in supervision management, including those operating in individual professions and self employed people). Therefore our four hypotheses are rejected (Appendices 3.4 and 3.5 show the detailed results of the analysis of variance).

TABLE 7.28
INDEPENDENT SAMPLE TEST FOR THE WORKING SECTOR – WORST
SECTORS AND REASONS

		Levene's Test		t-test for Equality of Means				
							95% Conf. Interval	
		F	Sig.	t	Sig.-2tailed	Mean Diff.	Lower	Upper
Worst sector								
Worst No 1 Sector	Equal var. Assumed	6.321	.014	-1.030	.306	-1.206	-3.537	1.125
	Equal var. not assumed			-.976	.333	-1.206	-3.683	1.272
Worst No 2 Sector	Equal var. Assumed	.811	.371	-.374	.709	-.349	-2.205	1.507
	Equal var. not assumed			-.366	.715	-.349	-2.252	1.555
Worst No 3 Sector	Equal var. Assumed	.104	.748	2.043	.044	2.137	.054	4.219
	Equal var. not assumed			1.986	.052	2.137	-.017	4.291
Worst No 4 Sector	Equal var. Assumed	.074	.787	.494	.623	.617	-1.872	3.106
	Equal var. not assumed			.496	.621	.617	-1.865	3.099
Worst No 5 Sector	Equal var. Assumed	.081	.777	.252	.802	.278	-1.922	2.478
	Equal var. not assumed			.254	.800	.278	-1.906	2.462
Reasons for selecting the worst No. 1 sector: PUBLIC HEALTH & AGRICULTURE								
Public Expenditure on R&D	Equal var. Assumed	.698	.406	-.224	.823	-.079	-.780	.623
	Equal var. not assumed			-.221	.826	-.079	-.794	.636
Good links with FDI	Equal var. Assumed	.170	.681	.817	.416	.289	-.415	.993
	Equal var. not assumed			.817	.417	.289	-.418	.995
Dynamic SME Sectors	Equal var. Assumed	1.283	.261	-.883	.380	-.322	-1.048	.404
	Equal var. not assumed			-.868	.389	-.322	-1.063	.420
Competitive SME Sectors	Equal var. Assumed	.214	.645	-.120	.905	-.044	-.771	.683
	Equal var. not assumed			-.120	.905	-.044	-.778	.690
Level of Expenditure on ICT	Equal var. Assumed	.118	.732	-.782	.436	-.251	-.888	.387
	Equal var. not assumed			-.773	.443	-.251	-.899	.398
Level/use of Science/ Engineering graduates	Equal var. Assumed	.421	.519	.841	.403	.326	-.446	1.098
	Equal var. not assumed			.850	.398	.326	-.440	1.092
Level of Industry Expenditure on R&D	Equal var. Assumed	.114	.737	-.002	.998	-.001	-.675	.674
	Equal var. not assumed			-.002	.998	-.001	-.661	.659
Level of Manufacturing Expenditure	Equal var. Assumed	.723	.398	1.236	.220	.452	-.276	1.180
	Equal var. not assumed			1.275	.207	.452	-.255	1.158
Industry Receives Public Money for Innovation	Equal var. Assumed	.049	.825	1.496	.139	.574	-.190	1.337
	Equal var. not assumed			1.486	.142	.574	-.198	1.346

7.7 CONCLUSION

This chapter presents the analysis and the findings of the data gathered through our research questionnaire. The sample of 78 respondents is predominantly composed of highly educated Kuwaiti males who hold high managerial positions in the private sector with varied level of working experiences. The descriptive statistics of the general characteristics of the respondents are initially presented and the extent to which innovation is taking place in the various different sectors (or is lagging behind) is then identified. In the study a series of hypotheses were formulated and tested. The study ascertained that there are non-significant differences in the mean scores between the groups being tested (gender, nationality, and working sector and employment position). Two types of tests were carried out, the independent t-test (two groups) and the analysis of variance - ANOVA (more than two groups).

The most innovative sectors in the State of Kuwait are all in the private sector, except for the **oil, refinery & petrochemical industry**, which is state owned and operates relatively independently. The best ranked industries are **banking**, followed by **private communication, finance, insurance & real estate & business services and building & construction**. High levels of expenditure on ICT, their good links with FDI, their recruitment of science and engineering graduates and their competitiveness are reasons cited for their high ranking. In the case of the oil sector, it was also perceived as innovative as a result of the expenditure on research and development.

The least innovative sectors within the State of Kuwait are found in the public sector and all its branches (except for the oil industry as previously mentioned). The worst ranked sectors include: **education, health, transportation and communication**. Amongst the main identified reasons for perceiving these sectors as not innovative are: the poor level of

expenditure on ICT and the lack of dynamism within the sector. The **agricultural** sector was also identified as one of the least innovative sectors in Kuwait. This can be explained by the fact that it is cheaper to import many food products than produce them locally. In terms of regional innovation expertise Kuwait was classified fourth, just ahead of Bahrain and Oman. The respondents clearly classified the UAE and Qatar as the best innovative countries.

CHAPTER EIGHT

CONCLUSIONS

"Innovation is the specific instrument of entrepreneurship. The act that endows resources with a new capacity to create wealth." Peter F. Drucker

8.1 INTRODUCTION

Productive activity have always characterised the lives of the citizens of the Gulf and prior to the discovery of oil in particular. Innovation is a result of productive activity. During the periods of difficult and trying circumstances Gulf Countries tended to innovate and ensured the sustainability of human existence. Innovation could have been extensive during this period. This could have changed subsequent to the discovery of oil. The exploitation of natural assets is a matter of grave concern throughout the world, exploration and exploitation are costly and risky exercises in terms of growth and profitability and the risks are manifest in terms of social, political and economic consequences. Governments of oil rich Gulf Countries need to cultivate a culture that fosters creative ideas associated with, among others, safety and security of their natural and human resources, morality, employment and health within the context of an increasingly global environment. A lack of a shared vision, purpose and strategy reduces the vital role that innovation can play. A planned investment in innovation is therefore critical and Kuwait needs to reorient itself economically, politically, socially, ethically and morally in this regard. Failure to achieve this would result in Kuwait failing to fulfill its mandate, thereby reducing the return to private effort and initiatives.

This final chapter therefore presents the conclusions drawn from the literature survey and the empirical study. The idea that a 'decent' investment in innovation should become the true test of civilization is supported in this study. The chapter concludes with the major challenges that were encountered throughout the study and an outline for further research is provided.

8.2 EVALUATION OF SUBSTANTIVE FINDINGS OF THIS STUDY

The idea that innovation is vitally important for Kuwait's economic growth and human development has already been recognized throughout this study. The empirical findings presented in Chapter Seven support the general literature review that countries abundant in natural resources face the dilemma of how to effectively and productively manage sources of revenues accruing from the exploitation of natural resources. The literature and empirical findings suggest that resource abundance can cause weaknesses in the social, economic and (particularly) political environments where weak governance structures may result. The inability of Kuwait to grow and develop in accordance with classical economic growth theories where the national income is divided among labourers, landlords and capitalists in the form of wages, rent, interest and profits, suggests that an abundance of oil may result in curse effects. Classical economic theory raises the question of how an economy could be organized around a system in which each person sought his or her own (monetary) gain. Moreover, classical economic theories moved away from an analysis of the ruler's personal interests to broader national interests. Adam Smith in the *Wealth of Nations* saw national income as that produced by labour, land, and capital with property rights to land and capital held by individuals.

Although this should be a cause of great concern, there are many initiatives adopted by the current Kuwaiti government that reduce the effects of any possible curse. However, optimal innovative solutions need to be addressed. The purpose of this study was to present innovation as a curse reductive mechanism.

Kuwait derives almost all its budget directly from oil production, thus making Kuwait a rentier state. Being a rentier state also manifests itself to a certain extent in an adversity to democracy, with bureaucratic state machinery

seeking to regulate markets. Rentier states can also oversee a poor innovation strategy. However, our empirical findings indicate that innovation in the finance and service sectors of Kuwait is more pronounced than in the oil sector and in this regard, innovation in the banking sector is identified as a critical driver for future growth and development. That the banking sector in Kuwait understands the role of innovation augers well for Kuwait in any policy making initiatives in other sectors.

One of the aims of the study was to analyse the importance of innovation, then determine which sectors innovate the best (why and how). Competition is propelling both corporations and governments to find new and alternative ways to increase productivity, and this is creating renewed interest in the need to innovate. The message for governments is that there is no substitute for good education and for policies that encourage investment in innovation, research and development. Innovation has a positive and beneficial effect on the performances of corporations and governments. However, a poor economic performance due to macroeconomic mismanagement by the government will result in investors losing confidence and this is something Kuwait needs to avoid. Table 8.1 shows the five best and worst ranked sectors in terms of innovation.

TABLE 8.1

**FIVE BEST AND WORST RANKED SECTORS IN TERMS OF
INNOVATION**

Best		Worst	
1	Banking	1	Public Education
2	Private Communication	2	Public Health
3	Oil refinery and Petrochemical	3	Public Transportation
4	Finance, Insurance Real Estate and Business Services	4	Agriculture
5	Building and Construction	5	Public Communication

Conversely, the successes achieved by the five best sectors provide overarching framework for innovation. In support of the Government's objectives to transform and develop the economy, the banking sector has made substantial commitments to develop downstream industries. The provision of access to loan funding information and financing options are available through the banking sector. To build an innovative and sustainable future is the objective of public sector. The quest to transform the foundations of the Kuwait economy is the government's biggest contribution. However, public sectors featured more prominently as worst ranked sectors in terms of innovation. Yet within these sectors, private sectors have found business opportunities and begun to innovate (consideration to these specific initiatives adopted by the private sector remains outside the scope of this thesis).

8.2.1 PLANNING FOR OUTCOMES RELATIVE TO INNOVATION

The empirical findings in Chapter Seven show that expenditure on research and development and investment in ICT are the important reasons why respondents selected the best performing sectors in terms of innovation. (Refer 7.3.1). In any endeavour, planning for outcomes is critical. With specific reference to innovation, creating awareness among culturally sensitive stakeholders becomes an important element in the diffusion of innovation. Outcomes must be considered, and innovation must be based on an incremental approach involving a viable portfolio of projects. The implementation of a model for the management of innovation is critical if innovation is to succeed - especially in Kuwait. The empirical findings suggest that there is a strong belief that innovating improvement can now be achieved through foreign investment, whereas in the past the success of the Gulf States as identified by the Arab Planning Institute was seen as resting upon the large inflow of foreign labour. Innovation is uniquely human and is not random. One of the hallmarks of innovation systems is that it allows for the recruitment and retention of highly skilled human resources and, by allowing them access to knowledge, encourages them to discover new solutions to problems related to growth opportunities. In this regard a detailed plan for innovation needs to be considered by senior management to oversee the resource-allocation process. In their seminal work, Anthony, Johnson and Sinfield (2008) contend that it is companies that create blueprints for growth, construct innovation engines and support the engines with the right systems and mind-sets. Hence, planning for innovation requires institutionalizing innovation, and if Kuwait can build and maintain a capacity for innovation, substantial stakeholder benefits will accrue.

8.2.2 ASSESS, ENABLE AND TRANSFORM CURRENT PRACTICES

One of the hallmarks of business is the separation of ownership and control. In Kuwait, ownership and control manifests in a distinct manner. Due to the philanthropic conduct of successive leaders, the government owns and controls substantial business interests, and following the failure of any major businesses, the government steps in with stimulus or rescue packages. Building on this unique approach towards creating a supportive infrastructure to promote an enterprising culture the government needs to assess the current practices. Developing a locally specific innovation model would undoubtedly need an assessment of the current position. Innovation does not take place in isolation. In the case of Kuwait this involves understanding the political and socio-economic environment. (This was identified in Chapter Three). There needs to be a buy-in by the Kuwaiti leadership, to first consider current practices and thereafter support stakeholder representatives to enable a culture of innovation to be nurtured. Ultimately, a transformation needs to take place. Kuwait's prolonged dependence on a single primary product export means that the labour-intensive stage of competitive industrialisation must be leapfrogged. The empirical findings suggest that business more than government is an important agent of innovation. At the same time, the Kuwaiti Government is explicitly required to contribute to wider national development objectives, and this should not be forgotten. However, as there is a wide variation in how businesses and different industry sectors with diverse contexts and imperatives, interpret, approach and apply an innovation strategy.

Enhancing industrial transformation, as defined by International Human Dimensions Programme on Global Environmental Change (IHDP), becomes paramount in Kuwait. Industrial Transformation research commences with the notion that innovative changes in technology usage, change the ways in which humans use environmental resources and services. This embraces

processes and products, production and consumption chains and distribution and disposal activities. In this regard the challenging goals of creating an awareness on how Kuwait should combine economic, political and social developments with the resource curse reduction, must be addressed. The scientific agenda should ideally address the following: alternative sources of energy and material flows; food security; water and transportation; information and communication; governance and political, economic and social transformation processes.

Kuwait therefore has to establish the critical issues that undermine the rate of adoption of technologies. More energy and materials intensive technologies should be avoided. Through consensus among the major stakeholders in the various different sectors, innovation can be advanced. Development of small, medium and micro enterprises would be crucial for an overall innovation strategy. A commitment to transform becomes important. A government fund could act as a business incubator and developer, yet successful business incubation in Kuwait requires enormous government and private sector support. Many time honoured traditions of the Kuwait government have played a major role in this regard and foreign investors are offered a transparent environment that guarantees the security of their long-term investments.

8.3 THE REVEALING DILEMMA FACING KUWAIT

The various chapters of this study have already identified that economies heavily dependent on natural resource exports have performed poorly on various measures of economic, social, and political development. This underscores the question of whether natural resources are a “curse” or a “blessing”. The empirical evidence cited in this study suggests either outcome is possible. The curse effects included an appreciation of the real exchange rate, de-industrialization and limited growth prospects. The literature concurs that these adverse effects are more severe in volatile countries with weak institutions, corruption, autocratic governance, and

underdeveloped financial systems. Fortunately, Kuwait has already been recognized as a highly ranked country in terms of the transparency international corruption perceptions index.

However, a resource boom reinforces rent grabbing and civil conflict, especially if institutional governance is weak. One of the challenges that face resource rich developing economies is the need to successfully move from depleting resources into developing other productive assets. The resource curse is therefore not inevitable, and good governance and sound economic policies can mitigate its ill effects.

In planning for economic growth, infrastructure development and an expansion of innovation should be a key priority. Unfortunately, any country endowed with rich natural resources will discover negative and positive impacts of certain developmental initiatives affect innovation. However, whether Kuwait favours an evolutionary process of innovation over the “leapfrog” process is yet to be established as while such ‘leap-frogging’ has been favoured by some neighbouring Gulf countries and in some cases this has led to indebted economies.

Should oil remain the energy source of choice for power generation and transportation, oil producing countries should recognize the need to maximize the wealth and longevity of their critical energy assets through effective management. The need to build infrastructures that will create a sustainable base for efficient exploitation of natural resources and concurrently allow for the development of a diversified economy will be imperative to ensure long-term prosperity. Investment in innovation therefore becomes paramount.

8.4 THE NEED FOR INNOVATION, DIVERSIFICATION AND KNOWLEDGE CREATION

Kuwait's historic economic success cannot be sustained with the current levels of innovation. Innovation predicates a knowledge environment. If one considers current trends, the future of oil production in Kuwait appears firm and enduring as a source of energy and an important generator of revenues. Kuwait however increasingly needs to recognize the importance of maximizing the wealth and sustaining its critical energy assets through effective governance. The opportunity to invest wealth derived from natural resources in building a sustainable, efficient, diversified and innovative economy will enable Kuwait to make the most of its oil related assets far into the future.

Diversification helps support the profitable and sustainable development of oil and gas resources and long-run economic growth. Once diversification has commenced, it tends to gain momentum in a self-reinforcing cycle. A typical example would be Dubai that moved resources from oil production to develop a strong tourism related base. Consequently, several housing projects emerged for an international clientele. Moreover, the ports in Dubai have become a major hub for the movement of goods around the world. As one industrial sector's successes attract suppliers and skilled people, other sectors begin to locate nearby to take advantage of growing opportunities. Knowledge spills over from one sector to other sectors through individuals who migrate from one sector to another.

The challenges that Kuwait faces are somewhat complex. Therefore a fundamentally unique approach is required. Innovation and diversification takes place more and more beyond the boundaries of the country. In this regard new methods and tools are necessary to manage distributed knowledge creation. A cultural fit needs to be established.

8.5 LEVERAGING INNOVATION FOR LONG TERM SECURITY

This study considered whether a country's natural resources are a curse or a blessing. The rate at which natural resources in Kuwait are exploited underline a cause for concern. From an economic perspective, how can a Kuwait endowed with rich natural resources switch from dependence upon these natural resources to develop other sectors based on knowledge, skills, capital and technology. Consequently, Kuwait could be called the “paradox of plenty” insofar as it is presenting unable to raise its growth rates and development levels above those of some countries lacking natural resources. Innovation may therefore be the key.

Innovation for Kuwait is non-negotiable. A consistent and predictable innovation process guarantees future growth and development. Consistency in innovation theory relates to changes in innovation being introduced gradually to accommodate stakeholders in various fields of endeavors and predictable relates to an unsurprising conduct on the beneficiaries of innovation. To achieve this five steps are proposed:

- Presenting a solid business case for innovation and creating a buy-in and an impetus for innovation that starts at the top;
- Reforming the attitudes of risk-averse individuals while promoting innovation in every department across the organization or state;
- Establishing a culture for innovation in order that a self-sustaining innovation process changes;
- Hiring innovators (as agents of change) to provide basic training in innovation; and
- Evaluating and measuring innovation results. Historically, incentives that encouraged innovation in the private sector of Kuwait tended to be less acceptable in the public sector where innovation generally lagged. This needs to change.

One important question relates to how innovation is understood and valued in cultural and social settings - and how different cultures can be motivated and supported to actively embrace innovation. While, in this regard, the three facets of intellectual capital (namely, human capital, social capital and cultural capital) need to be addressed, this issue falls beyond the bounds of the current study.

8.6 CONTRIBUTION OF STUDY

This study is the very first one to have been conducted in Kuwait examining how the core ideas associated with governance of scarce resources have been addressed within the context of the culture of the region. A large body of scholarship has a list of prescriptions for reducing the resource curse effects. The solutions suggested relate to macroeconomic issues, governance, economic diversification policies, natural resource funds, accountability and direct distribution as mechanisms for managing resource wealth effectively and efficiently. The study documents in a scholarly fashion the extent to which oil revenues accrue to Kuwait, and proposes that Kuwait has to become a better governor of these revenues. To ensure better governance, Kuwait has to enhance transparency, accountability, and become more supportive of a corporate culture, as a more robust institutional is needed framework to tackle potential 'curse' effects.

The philanthropic conduct of the rulers of Kuwait should in no way be belittled. The rulers have, over the years, shared the wealth of the country with their less fortunate neighbours. Expatriates living in Kuwait would readily attest to the conduct of the rulers in this regard. However, the question is whether such conduct can be sustained (and is so, how) is a cause for concern.

8.7 IMPLICATION OF THE FINDINGS

The scientific contribution of this thesis to the future research agenda on resource curse reduction through innovation for Kuwait needs to be firmly established. Researchers in Kuwait at institutions such as universities are ideally positioned to identify the multidisciplinary research needed to address further the issues raised in this study. However, one needs to move beyond mere philosophizing. This research study has provided important insights into innovation as a reductive instrument for curse effects. However, the findings of this study suggest that while Kuwait can overcome the resource curse through innovation, political will among stakeholders is required. Privatization was an innovative solution to the resource curse in many countries. While it is a possible solution for combating the resource curse, this study favours developing a strategy to directly address the pervasive problem of weak institutions in Kuwait that does not favor innovation.

Finger pointing is not a way forward. Collectively, the private sector and the public sector must develop a strategy to innovate that will sustain the wealth of the country.

8.8 LIMITATIONS OF THE RESEARCH

Although the study has addressed the issues associated with resource curse reduction through innovation, the study stops short of addressing the issue of privatization of oil production in Kuwait. Domestic private ownership of state assets is rarely discussed in the literature in Kuwait. However, the study was a clinical approach towards identifying the curse effects that Kuwait faces. This is indeed a sensitive topic but nevertheless has to be addressed with some vigor. The study needs to be extended to encompass a larger group of stakeholders particularly those who have developed a

dependence syndrome towards the state as a result of Kuwait's philanthropic conduct towards its citizens.

The sample for the study was indeed very limited. While anecdotal evidence exists with regard to the differences between the various sectors of the Kuwaiti society, this study did not look beyond income groups, gender, and educational levels as demographic variables. The study assumes a homogeneous Kuwaiti society.

Moreover, quantitative economic, social and political metrics suggesting the contribution of innovation need to be developed to consider the role that innovation plays in an economy.

8.9 THE CHALLENGES ENCOUNTERED

There were numerous challenges that were encountered during the period of the study. The study evolved as a result of a passion that I have for 'reinventing' Kuwait through a process of innovation. However, as these thoughts developed completion of a doctoral programme was considered appropriate.

Preparing work on the thesis introduced me to the notion of the resource curse. The resource curse has been identified in numerous studies written across the developed world. However, in these developing economies endowed with rich natural resources. There has been much less research on recognition of these effects. Strategic studies in the Gulf addressing the curse effects are not readily available and, to the best of my knowledge, this is the first study in Kuwait. It is an intention of the author to ensure that more research should be published in this area, as it is certain that this topic would generate further discussions and ideas within the country.

The methodology adopted for this study was outlined in chapter Five. Although initial discussions were held with key stakeholders, their views on innovation and profits are almost certainly determinant upon past practices – when rulers of Kuwait tended to overlook the need for profitability and innovation in favour of welfare provision based on an oil economy. Nevertheless it is important to confer with such key individuals given their current and future economic roles.

Questionnaires were provided in both Arabic and English. While translating the questionnaires and the responses proved time-consuming the major challenge encountered were associated with translating the findings of this research into more meaningful outcomes that would engender a culture of innovation.

8.10 IMPLICATIONS FOR FUTURE RESEARCH – INNOVATION IN RELATION TO PRODUCTIVITY

Innovation is a key source of productivity, growth and development. Growth and development as reductive curve measures were adequately addressed throughout this study. However, the impact of innovation on productivity was not addressed. While this study focuses on the innovation dynamics in general, one should recognize that is not the sole determinant of economic growth and development. An approach that allows one to conceptualise innovation as a deliberate and specific process of change in a particular firm, needs to be considered in future studies. Following upon this one needs to revisit the role of the government and private sector in incubating small and medium sized enterprises.

Capital in the form of financial, natural and physical are the ones that are commonly factored into growth models. In any discussion relating to innovation in Gulf Countries, human, cultural and social capital should also be considered. Human capital is generally considered as the knowledge,

skills and competences embodied in individuals that are relevant to economic activity. An investment in human capital can be an important determinant of innovation. An individual's (or groups of individuals) earning capacity and employment plays an important role in determining the level and distribution of income in society and, by extension, the pace of economic growth. A degree of government and private involvement is needed in the provision of educational services. Ensuring that Kuwaitis enter their working life with a certain level of human capital acquired during the years of compulsory education is paramount. However, Kuwaitis are also heavily dependent upon the government's financing and delivery of post-compulsory education, where returns may - to a larger extent- accrue to the individual, but society also benefits. In Kuwait, an investment in education allows one to move from non-elite positions into elite positions. This is particularly necessary for the diffusion of innovation.

Secondly, cultural capital, on the other hand, is a more academic and philosophic notion, referring to the credentials and cultural assets embodied in individuals and their families. Cultural capital is a notion that explains disparities in the educational attainment of children from different social classes. Understanding cultural issues in Kuwait are fundamentally important to innovation success. Since culture shares many of the properties that are characteristic of economic capital, cultural capital - in the form of habits and customs - comprises a resource capable of either generating or inhibiting returns. As, cultural capital can be monopolized by individuals and or groups, and transmitted from one generation to the next the concept can be used to explain the reproduction of social hierarchy. Extending this notion of cultural capital further, countries that are well governed and show a high concern for human wellbeing also endow their citizens with positive cultural capital.

Thirdly, social capital defined in terms of faith, trust in other people, and prevailing social norms, allows agents and institutions to be more effective

in achieving common objectives. The most common measures of social capital include one's participation in various forms of civic engagements, membership of voluntary associations, civil societies and political organisations. Social capital has been deployed to explain a wide range of social phenomena, including general economic performance, levels of crime and disorder, immigrant employment and health trends. Moreover, social capital can have socially undesirable effects, where trust and mutuality operate to enhance inequalities, exclusion or even criminality.

There is thus a need to take the innovation discussion further to accommodate issues associated with human capital, social capital and cultural capital. Investing in innovation should ideally entail a return to these forms of capital too. Needless to say that failure to invest in these forms of capital would have devastating consequences on innovation.

8.11 FINAL THOUGHTS

The pursuit of political emancipation has long been the objectives of many colonised countries. Today economic emancipation, freedom from government intervention and a move away from a dependence syndrome are issues that government and the private sectors need to address. Innovation can play a critical role in these discussions. This final and concluding chapter presents the recommendations of the study. Having identified the role that innovation can play, the chapter advocates the further development of technologies and infrastructures that would enable Kuwait to exploit its mineral wealth efficiently -and at the same time provide a platform for economic diversification. Since management of the revenues of the oil industry are critical to the success of these efforts, a more robust and multi-disciplinary approach to innovation is recommended. Any such move requires collaboration among industry, government, and research/educational institutions, and the promotion of a culture of innovation and creativity. Consequently, communication among all sectors

becomes crucial. Innovation will enable all sectors to exploit their potential. This expansive study is the very first one to have linked the resource curse to the innovation literature. Indeed it is the first study to have been conducted by a Kuwaiti national into the specificities of the natural resource of the country and innovation at the sectorial level. The challenge is now to take these ideas forward.

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APPENDICES

APPENDIX I

Appendix 1.1 Semi-structured Interview Questions for nine major stakeholders in Kuwait.

1/ How has the resource abundance of oil shaped the Kuwaiti Economy?
2/ Does Kuwait use its resources in effective ways for further development ?
3/ What are the weaknesses of an oil dependent State?
4/ Is there any option to reduce Oil dependency in Kuwait?
5/ What would you propose to Kuwait to use its resources effectively?
6/ Do you think Oil in Kuwait is a blessing or a curse? why?
7/ What do you think about Kuwait Investment Authorities policies? What role would they have in the future?
8/ What sector is top priority for Privatization?
9/ What sector in Kuwait, if it gets more attention, will have the most potential for innovation?
10/ How can Kuwait transform itself into a diversified technologically advanced economy?
11/ Anything you would like to add?

Appendix 1.2 Semi-structured Interview Questions for the Kuwait Investment Authorities office.

1/What are KIA mains objectives and goals?
2/How is KIA involved in privatization in Kuwait?
3/Are you satisfied with the results obtained by the privatization process of companies that were under the accountability of KIA?
4/Can you give me a successful and a failure example of privatization case, KIA took care of ? examples.
5/ How has the resource abundance of oil shaped the Kuwaiti Economy?
6/ Does Kuwait use its resources in effective ways for further development?
7/ What are the weaknesses of an oil dependent State?
8/ Is there any option to reduce Oil dependency in Kuwait?
9/ What would you propose to Kuwait to use its resources effectively?
10/ Do you think Oil in Kuwait is a blessing or a curse? why ?
11/ What do you think about Kuwait Investment Authorities policies ? What role would you like them to have in the future?
12/ What sector is top priority for Privatization?
13/ What sector in Kuwait, if it gets more attention, will have the most potential for innovation?
14/ How can Kuwait transform itself into a diversified technologically advanced economy?
15/ Anything you would like to add?

Appendix 1.3 Questionnaire used for the main survey: Phase II (English Version)

QUESTIONNAIRE

Innovation and Growth in a Developing Economy

The objective of this academic survey is twofold, first it tries to identify the sectors where innovation is the most and the least advanced within the State of Kuwait. Second it tries to find out the reasons behind these advancements or not against a set of selected parameters.

All the respondents will remain anonymous and personal data will be used for statistical purposes only. The questionnaire is divided into 6 sections.

SECTION (1): In this first section of the survey, some general information is asked about yourself. Please tick the most appropriate answer.

G11	Gender: <input type="checkbox"/> Female <input type="checkbox"/> Male
G12	Age: <input type="checkbox"/> Between 18 and 29 years old <input type="checkbox"/> Between 50 and 59 years old <input type="checkbox"/> Between 30 and 39 years old <input type="checkbox"/> Between 60 and 69 <input type="checkbox"/> Between 40 and 49 years old <input type="checkbox"/> 70 years old and above
G13	Nationality: <input type="checkbox"/> Kuwaiti <input type="checkbox"/> Non Kuwaiti
G14	Level of Education: <input type="checkbox"/> High School Graduate <input type="checkbox"/> University Graduate (Degree) <input type="checkbox"/> Institute Graduate (Diploma) <input type="checkbox"/> University Postgraduate (Master & above)
G15	Employment Sector: <input type="checkbox"/> Private <input type="checkbox"/> Public
G16	Working position: <input type="checkbox"/> Senior Management <input type="checkbox"/> Profession (Lawyer, Doctor, Architect, etc.) <input type="checkbox"/> Middle Management <input type="checkbox"/> Self employed <input type="checkbox"/> Lower Management <input type="checkbox"/> Other: ----- <input type="checkbox"/> Supervision -----(please specify)
G17	Number of years working at the above level: <input type="checkbox"/> Less than 1 year <input type="checkbox"/> Between 11 and 15 years <input type="checkbox"/> Between 1 and 5 years <input type="checkbox"/> Between 16 and 20 years <input type="checkbox"/> Between 6 and 10 years <input type="checkbox"/> More than 20 years
G18	Annual income: <input type="checkbox"/> Less than 15,000 KD <input type="checkbox"/> Between 36,000 and 40,000 KD <input type="checkbox"/> Between 16,000 and 20,000 KD <input type="checkbox"/> Between 41,000 and 50,000 KD <input type="checkbox"/> Between 21,000 and 25,000 KD <input type="checkbox"/> Between 51,000 and 55,000 KD <input type="checkbox"/> Between 26,000 and 30,000 KD <input type="checkbox"/> Between 56,000 and 60,000 KD <input type="checkbox"/> Between 31,000 and 35,000 KD <input type="checkbox"/> More than 61,000 KD

SECTION (2): First reflect on the term **Innovation** which in this context is **defined as something that is new or significantly improved to create added value either directly to organizations or indirectly to customers.**

Second from the list below where 18 different sectors have been identified, select:

- ◆ **The best five** where you feel innovation is taking place. Rank these in **column 1** from 1 to 5 (where 1=The first best, 2= The second best, 3=The third best, 4=The fourth best and 5=The fifth best).
- ◆ **The worst five** where you feel innovation is lagging behind. Rank these in **column 2** from 1 to 5 (where 1= The worst, 2= The second worst, 3=The third worst, 4=The fourth worst and 5=The fifth worth).

	Sector	Column1 (Best 5)	Column2 (Worst 5)
SE1	Agriculture		
SE2	Building & Construction		
SE3	Banking		
SE4	Communication-Private		
SE5	Communication-Public		
SE6	Education-Public		
SE7	Education-Private		
SE8	Electricity/Water/Gas		
SE9	Finance/Insurance/Real estate/Business Services		
SE10	Health-Private		
SE11	Health-Public		
SE12	Manufacturing-Private		
SE13	Manufacturing-Public		
SE14	Transportation-Private		
SE15	Transportation-Public		
SE16	Oil/Refinery/Petrochemical		
SE17	Wholesales/Retails/Hotels		
SE18	Other Sector (Specify)		

SECTION (3): In this section we would like to ask you why you ranked the sectors in this way.

- ◆ **Firstly**, in the five boxes below **write down the five best ranked sectors as identified in Section 2.**
- ◆ **Secondly**, and as you can see, we have given a list of reasons why this may be so (public expenditure on R&D, etc.) We would therefore like you to **place a tick** in one the following six boxes (where **n/a**=Not Applicable to your sector, **1**=Strongly Disagree, **2**=Disagree, **3**=Neither disagree nor agree, **4**=Agree and **5**=Strongly agree) **following each of these reasons** to show how important you feel this factor is with regards to innovation in that particular sector.

What did you select as Best sector number 1 and why?							
Best Sector No 1:		n/a	1	2	3	4	5
B1-1	Public Expenditure on R&D (Government spending on R&D)						
B1-2	Good links with FDI (Relations/contacts with FDI)						
B1-3	Dynamic SME sectors (SME adaptation to change)						
B1-4	Competitive SME sectors (SME rivalry & aggressiveness)						
B1-5	Level of expenditure on ICT (Spending on ICT)						
B1-6	Level/use of Science/Engineering graduates (Science & Engineering graduates employed)						
B1-7	Level of industry expenditure on R&D (Industry spending on R&D)						
B1-8	Level of manufacturing expenditure (Spending on production)						
B1-9	Industry receives public money for Innovation (State financial help to industry)						
B1-10	Other 1 (Specify)						
B1-11	Other 2 (Specify)						

What did you select as Best sector number 2 and why?							
Best Sector No 2:		n/a	1	2	3	4	5
B2-1	Public Expenditure on R&D (Government spending on R&D)						
B2-2	Good links with FDI (Relations/contacts with FDI)						
B2-3	Dynamic SME sectors (SME adaptation to change)						
B2-4	Competitive SME sectors (SME rivalry & aggressiveness)						
B2-5	Level of expenditure on ICT (Spending on ICT)						
B2-6	Level/use of Science/ Engineering graduates (Science & Engineering graduates employed)						
B2-7	Level of industry expenditure on R&D (Industry spending on R&D)						
B2-8	Level of manufacturing expenditure (Spending on production)						
B2-9	Industry receives public money for Innovation (State financial help to industry)						
B2-10	Other 1 (Specify)						
B2-11	Other 2 (Specify)						

The abbreviations used in the above - and following - tables stand for: **R&D** = Research & Development; **FDI** = Foreign Direct Investment; **SME** = Small & Medium Enterprises and **ICT** = Information & Communication Technologies.

What did you select as **Best sector number 3** and why?

Best Sector No 3:		n/a	1	2	3	4	5
B3-1	Public Expenditure on R&D (Government spending on R&D)						
B3-2	Good links with FDI (Relations/contacts with FDI)						
B3-3	Dynamic SME sectors (SME adaptation to change)						
B3-4	Competitive SME sectors (SME rivalry & aggressiveness)						
B3-5	Level of expenditure on ICT (Spending on ICT)						
B3-6	Level/use of Science/Engineering graduates (Science & Engineering graduates employed)						
B3-7	Level of industry expenditure on R&D (Industry spending on R&D)						
B3-8	Level of manufacturing expenditure (Spending on production)						
B3-9	Industry receives public money for Innovation (State financial help to industry)						
B3-10	Other 1 (Specify)						
B3-11	Other 2 (Specify)						

What did you select as **Best sector number 4** and why?

Best Sector No 4:		n/a	1	2	3	4	5
B4-1	Public Expenditure on R&D (Government spending on R&D)						
B4-2	Good links with FDI (Relations/contacts with FDI)						
B4-3	Dynamic SME sectors (SME adaptation to change)						
B4-4	Competitive SME sectors (SME rivalry & aggressiveness)						
B4-5	Level of expenditure on ICT (Spending on ICT)						
B4-6	Level/use of Science/ Engineering graduates (Science & Engineering graduates employed)						
B4-7	Level of industry expenditure on R&D (Industry spending on R&D)						
B4-8	Level of manufacturing expenditure (Spending on production)						
B4-9	Industry receives public money for Innovation (State financial help to industry)						
B4-10	Other 1 (Specify)						
B4-11	Other 2 (Specify)						

What did you select as **Best sector number 5** and why?

Best Sector No 5:		n/a	1	2	3	4	5
B5-1	Public Expenditure on R&D (Government spending on R&D)						
B5-2	Good links with FDI (Relations/contacts with FDI)						
B5-3	Dynamic SME sectors (SME adaptation to change)						
B5-4	Competitive SME sectors (SME rivalry & aggressiveness)						
B5-5	Level of expenditure on ICT (Spending on ICT)						
B5-6	Level/use of Science/ Engineering graduates (Science & Engineering graduates employed)						
B5-7	Level of industry expenditure on R&D (Industry spending on R&D)						
B5-8	Level of manufacturing expenditure (Spending on production)						
B5-9	Industry receives public money for Innovation (State financial help to industry)						
B5-10	Other 1 (Specify)						
B5-11	Other 2 (Specify)						

SECTION (4): In this section we would like to ask you why you ranked the **worst-performing sectors** in this way.

- ◆ **Firstly**, in the five boxes below **write down the five worst ranked sectors as identified in Section 2.**
- ◆ **Secondly**, and as you can see, we have replicated the list of reasons why this may be so (public expenditure on R&D, etc.). We would therefore like you to **place a tick** in one of the following six boxes (where **n/a**=Not Applicable to your sector, **1**=Strongly Disagree, **2**=Disagree, **3**=Neither disagree nor agree, **4**=Agree and **5**=Strongly agree) **following each of these reasons** to show how important you feel this factor is with regards to innovation in that particular sector.

What did you select as Worst sector number 1 and why?							
Worst Sector No 1:		n/a	1	2	3	4	5
W1-1	Public Expenditure on R&D (Government spending on R&D)						
W1-2	Good links with FDI (Relations/contacts with FDI)						
W1-3	Dynamic SME sectors (SME adaptation to change)						
W1-4	Competitive SME sectors (SME rivalry & aggressiveness)						
W1-5	Level of expenditure on ICT (Spending on ICT)						
W1-6	Level/use of Science/Engineering graduates (Science & Engineering graduates employed)						
W1-7	Level of industry expenditure on R&D (Industry spending on R&D)						
W1-8	Level of manufacturing expenditure (Spending on production)						
W1-9	Industry receives public money for Innovation (State financial help to industry)						
W1-10	Other 1 (Specify)						
W1-11	Other 2 (Specify)						

What did you select as Worst sector number 2 and why?							
Worst Sector No 2:		n/a	1	2	3	4	5
W2-1	Public Expenditure on R&D (Government spending on R&D)						
W2-2	Good links with FDI (Relations/contacts with FDI)						
W2-3	Dynamic SME sectors (SME adaptation to change)						
W2-4	Competitive SME sectors (SME rivalry & aggressiveness)						
W2-5	Level of expenditure on ICT (Spending on ICT)						
W2-6	Level/use of Science/ Engineering graduates (Science & Engineering graduates employed)						
W2-7	Level of industry expenditure on R&D (Industry spending on R&D)						
W2-8	Level of manufacturing expenditure (Spending on production)						
W2-9	Industry receives public money for Innovation (State financial help to industry)						
W2-10	Other 1 (Specify)						
W2-11	Other 2 (Specify)						

The abbreviations used in the above - and following - tables stand for: **R&D** = Research & Development; **FDI** = Foreign Direct Investment; **SME** = Small & Medium Enterprises and **ICT** = Information & Communication Technologies.

What did you select as Worst sector number 3 and why?							
Worst Sector No 3:		n/a	1	2	3	4	5
W3-1	Public Expenditure on R&D (Government spending on R&D)						
W3-2	Good links with FDI (Relations/contacts with FDI)						
W3-3	Dynamic SME sectors (SME adaptation to change)						
W3-4	Competitive SME sectors (SME rivalry & aggressiveness)						
W3-5	Level of expenditure on ICT (Spending on ICT)						
W3-6	Level/use of Science/Engineering graduates (Science & Engineering graduates employed)						
W3-7	Level of industry expenditure on R&D (Industry spending on R&D)						
W3-8	Level of manufacturing expenditure (Spending on production)						
W3-9	Industry receives public money for Innovation (State financial help to industry)						
W3-10	Other 1 (Specify)						
W3-11	Other 2 (Specify)						

What did you select as Worst sector number 4 and why?							
Worst Sector No 4:		n/a	1	2	3	4	5
W4-1	Public Expenditure on R&D (Government spending on R&D)						
W4-2	Good links with FDI (Relations/contacts with FDI)						
W4-3	Dynamic SME sectors (SME adaptation to change)						
W4-4	Competitive SME sectors (SME rivalry & aggressiveness)						
W4-5	Level of expenditure on ICT (Spending on ICT)						
W4-6	Level/use of Science/ Engineering graduates (Science & Engineering graduates employed)						
W4-7	Level of industry expenditure on R&D (Industry spending on R&D)						
W4-8	Level of manufacturing expenditure (Spending on production)						
W4-9	Industry receives public money for Innovation (State financial help to industry)						
W4-10	Other 1 (Specify)						
W4-11	Other 2 (Specify)						

What did you select as Worst sector number 5 and why?							
Worst Sector No 5:		n/a	1	2	3	4	5
W5-1	Public Expenditure on R&D (Government spending on R&D)						
W5-2	Good links with FDI (Relations/contacts with FDI)						
W5-3	Dynamic SME sectors (SME adaptation to change)						
W5-4	Competitive SME sectors (SME rivalry & aggressiveness)						
W5-5	Level of expenditure on ICT (Spending on ICT)						
W5-6	Level/use of Science/ Engineering graduates (Science & Engineering graduates employed)						
W5-7	Level of industry expenditure on R&D (Industry spending on R&D)						
W5-8	Level of manufacturing expenditure (Spending on production)						
W5-9	Industry receives public money for Innovation (State financial help to industry)						
W5-10	Other 1 (Specify)						
W5-11	Other 2 (Specify)						

SECTION (5): In this section we would like to ask you about the **impact of Innovation** within the state of Kuwait.

We would therefore like you to **place a tick** in one of the following five boxes (1=Strongly Disagree, 2=Disagree, 3=Neither disagree nor agree, 4=Agree and 5=Strongly agree).

The impact of Innovation within the state of Kuwait						
		1	2	3	4	5
Imp1	Innovation has helped the public sector perform better					
Imp2	Innovation has helped the private sector perform better					
Imp3	Innovation has equally helped both the public and the private sector perform better					
Imp4	Innovation has only helped few sectors perform better					
Imp5	Innovation has helped all sectors perform better					
Imp6	Innovation has significantly improved the economy of Kuwait					

Name one thing that you feel could be done to best enhance Innovative behavior in Kuwait	
Imp7	...............

Could foreign investments help stimulate innovation in Kuwait?	
Imp8	<input type="checkbox"/> Yes <input type="checkbox"/> No

If yes, please suggest how or give examples of how this might occur	
Imp9	..........

SECTION (6): In this last section we would like to have your opinion about the role **Innovation** plays within the GCC Countries.

Please rank the Gulf States in terms of innovation (where 1 = Most innovative country and 6 = the least innovative country).

Countries					
Cty1	Bahrain	.....	Cty4	Qatar	.....
Cty2	Kuwait	.....	Cty5	Saudi Arabia	.....
Cty3	Oman	.....	Cty6	UAE	.....

Why have you chosen this specific country as <u>number 1</u> ?	
Cty7	....................

Thank you for your participation

Appendix 1.4 Questionnaire use for main survey : Phase II (Arabic Version)

استطلاع رأي

الإبداع و النمو في اقتصاد ناشئ

يسعى هذا الاستطلاع الأكاديمي إلى تحقيق هدفين: أولاً، يحاول تحديد القطاعات الأكثر و الأقل إبداعاً في دولة الكويت، و ثانياً، يحاول كشف الأسباب الكامنة وراء تقدم أو تراجع مستوى الإبداع وفقاً لمعايير محددة.

ستنزل شخصيات المُستطلعة آراؤهم مجهولة و لن تُستخدم بياناتهم الشخصية إلا لأغراض إحصائية. ينقسم استطلاع الرأي هذا إلى ستة أجزاء:

الجزء (1): في هذا الجزء من الاستطلاع سيتم طرح أسئلة عامة عن نفسك. يُرجى وضع علامة (√) مقابل الجواب الأنسب.

G11	الجنس	<input type="checkbox"/> أنثى	<input type="checkbox"/> ذكر
G12	العمر	<input type="checkbox"/> من 18 إلى 29 سنة	<input type="checkbox"/> من 50 إلى 59 سنة
		<input type="checkbox"/> من 30 إلى 39 سنة	<input type="checkbox"/> من 60 إلى 69 سنة
		<input type="checkbox"/> من 40 إلى 49 سنة	<input type="checkbox"/> من 70 سنة فما فوق
G13	الجنسية	<input type="checkbox"/> كويتي	<input type="checkbox"/> غير كويتي
G14	المستوى التعليمي	<input type="checkbox"/> شهادة ثانوية	<input type="checkbox"/> خريج جامعي (شهادة جامعية)
		<input type="checkbox"/> خريج معهد (دبلوم)	<input type="checkbox"/> خريج دراسات عليا (ماجستير فما فوق)
G15	قطاع العمل	<input type="checkbox"/> الخاص	<input type="checkbox"/> العام
G16	المنصب الوظيفي	<input type="checkbox"/> إدارة عليا	<input type="checkbox"/> متخصص (محام، طبيب، مهندس معماري، إلخ)
		<input type="checkbox"/> إدارة متوسطة	<input type="checkbox"/> أعمال حرة
		<input type="checkbox"/> إدارة دنيا	<input type="checkbox"/> أخرى -----
		<input type="checkbox"/> إشرافي	<input type="checkbox"/> ----- (يرجى التحديد)
G17	عدد سنوات العمل في المستوى المذكور أعلاه	<input type="checkbox"/> أقل من سنة	<input type="checkbox"/> من 11 إلى 15 سنة
		<input type="checkbox"/> من سنة إلى 5 سنوات	<input type="checkbox"/> من 16 إلى 20 سنة
		<input type="checkbox"/> من 6 إلى 10 سنوات	<input type="checkbox"/> 20 سنة فما فوق
G18	الدخل السنوي	<input type="checkbox"/> أقل من 15 ألف دينار	<input type="checkbox"/> من 36 إلى 40 ألف دينار
		<input type="checkbox"/> من 16 إلى 20 ألف دينار	<input type="checkbox"/> من 41 إلى 50 ألف دينار
		<input type="checkbox"/> من 21 إلى 25 ألف دينار	<input type="checkbox"/> من 51 إلى 55 ألف دينار
		<input type="checkbox"/> من 26 إلى 30 ألف دينار	<input type="checkbox"/> من 56 إلى 60 ألف دينار
		<input type="checkbox"/> من 31 إلى 35 ألف دينار	<input type="checkbox"/> 61 ألف دينار فما فوق

الجزء (2): أولاً يُرجى التفكير في مصطلح **الإبداع** و الذي يعرف في هذا السياق كشيء جديد أو محسن بشكل كبير لتحقيق قيمة مضافة إما بشكل مباشر للمنظمات أو بشكل غير مباشر للعملاء. ثانياً اختر من القائمة أدناه التي تحدد 18 قطاعاً مختلفاً ما يلي:

- ◆ **أفضل خمسة** تشعر بحدوث الإبداع فيها. رتب اختياراتك في **العمود (1)** من رقم 1 حتى 5 (حيث أن رقم 1 = الأفضل و 2 = ثاني أفضل و 3 = ثالث أفضل و 4 = رابع أفضل و 5 = خامس أفضل)
- ◆ **أسوأ خمسة** تشعر بتراجع الإبداع فيها. رتب اختياراتك في **العمود (2)** من رقم 1 حتى 5 (حيث أن رقم 1 هو الأسوأ و 2 ثاني أسوأ و 3 ثالث أسوأ و 4 رابع أسوأ و 5 خامس أسوأ).

القطاع	عمود 1 (أفضل 5)	عمود 2 (أسوأ 5)
SE10 الصحة – خاص		
SE11 الصحة – عام		
SE12 الصناعة – خاص		
SE13 الصناعة – عام		
SE14 وسائل النقل – خاص		
SE15 وسائل النقل – عام		
SE16 النفط/المصافي/الصناعات البتر وكيميائية		
SE17 البيع بالجملة/التجزئة/ الفنادق		
SE18 قطاعات أخرى		

القطاع	عمود 1 (أفضل 5)	عمود 2 (أسوأ 5)
SE1 الزراعة		
SE2 الإنشاء و التعمير		
SE3 المصارف		
SE4 الاتصالات – خاص		
SE5 الاتصالات – عام		
SE6 التعليم – خاص		
SE7 التعليم – عام		
SE8 الكهرباء/الماء/الغاز		
SE9 التمويل/التأمين/العقار/خدمات تجارية		

الجزء (3): في هذا الجزء نود أن نسألك لم رتببت اختياراتك بهذه الطريقة.

- ◆ أولاً، في المربعات الخمسة أدناه، أذكر القطاعات الخمسة **الأفضل** التي حددتها في الجزء (2).

♦ ثانياً، كما ترى قد عرضنا لك قائمة بالأسباب الكامنة وراء اختياراتك ، و لذلك نود أن تضع علامة (√) في أحد المربعات الستة بعد كلٍ من هذه الأسباب لإظهار درجة الأهمية التي توليها لهذا العامل فيما يتعلق بالإبداع في ذلك القطاع بعينه (بحيث أن n/a = لا ينطبق رقم 1 = معارض بشدة، 2 = معارض، 3 = لا معارض و لا موافق، 4 = موافق، 5 = موافق بشدة).

ما الذي اخترته كأفضل قطاع رقم 1 و لماذا؟						
5	4	3	2	1	n/a	أفضل قطاع رقم 1:
						B1-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						B1-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						B1-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						B1-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						B1-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						B1-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						B1-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						B1-8 مستوى الاتفاق على الصناعة (النفقات على الإنتاج)
						B1-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						B1-10 أخرى 1 (يرجى التحديد)
						B1-11 أخرى 2 (يرجى التحديد)

ولماذا؟3ما الذي اخترته كأفضل قطاع رقم						
5	4	3	2	1	n/a	3أفضل قطاع رقم:
						B3-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						B3-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						B3-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						B3-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						B3-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						B3-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						B3-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						B3-8 مستوى الاتفاق على الصناعة (النفقات على الإنتاج)
						B3-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						B3-10 أخرى 1 (يرجى التحديد)
						B3-11 أخرى 2 (يرجى التحديد)

ولماذا؟2ما الذي اخترته كأفضل قطاع رقم						
5	4	3	2	1	n/a	2أفضل قطاع رقم:
						B2-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						B2-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						B2-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						B2-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						B2-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						B2-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						B2-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						B2-8 مستوى الاتفاق على الصناعة (النفقات على الإنتاج)
						B2-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						B2-10 أخرى 1 (يرجى التحديد)
						B2-11 أخرى 2 (يرجى التحديد)

و لماذا؟!5ما الذي اخترته كأفضل قطاع رقم						
5	4	3	2	1	n/a	.....:أفضل قطاع رقم
						B5-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						B5-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						B5-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						B5-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						B5-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						B5-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						B5-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						B5-8 مستوى الإنفاق على الصناعة (النفقات على الإنتاج)
						B5-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						B5-10 أخرى 1 (يرجى التحديد)
						B5-11 أخرى 2 (يرجى التحديد)

و لماذا؟!4ما الذي اخترته كأفضل قطاع رقم						
5	4	3	2	1	n/a	.....:أفضل قطاع رقم
						B4-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						B4-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						B4-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						B4-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						B4-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						B4-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						B4-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						B4-8 مستوى الإنفاق على الصناعة (النفقات على الإنتاج)
						B4-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						B4-10 أخرى 1 (يرجى التحديد)
						B4-11 أخرى 2 (يرجى التحديد)

الجزء (4): في هذا الجزء نود أن نسألك لم ترتب القطاعات الأسوأ أداءً بهذه الطريقة.

- ◆ أولاً، في المربعات الستة أدناه، أذكر القطاعات الخمسة **الأسوأ** التي حددتها في الجزء (2).
- ◆ ثانياً، كما ترى قد كررنا لك قائمة بالأسباب الكامنة وراء اختيارائك تلك ، و لذلك نود أن تضع علامة (√) في أحد المربعات الستة بعد كل من هذه الأسباب لإظهار درجة الأهمية التي توليها لهذا العامل فيما يتعلق بالإبداع في ذلك القطاع بعينه (بحيث أن n/a = لا ينطبق و رقم 1 = معارض بشدة، 2 = معارض، 3 = لا معارض و لا موافق، 4 = موافق، 5 = موافق بشدة).

ما الذي اخترته كأسوأ قطاع رقم 1 و لماذا؟						
5	4	3	2	1	n/a	أسوأ قطاع رقم 1:.....
						W1-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						W1-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						W1-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						W1-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						W1-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						W1-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						W1-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						W1-8 مستوى الاتفاق على الصناعة (النفقات على الإنتاج)
						W1-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						W1-10 أخرى 1 (يرجى التحديد)
						W1-11 أخرى 2 (يرجى التحديد)

ما الذي اخترته كأسوأ قطاع رقم 3 و لماذا؟						
5	4	3	2	1	n/a	أسوأ قطاع رقم 3:.....
						W3-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						W3-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						W3-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						W3-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						W3-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						W3-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						W3-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						W3-8 مستوى الاتفاق على الصناعة (النفقات على الإنتاج)
						W3-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						W3-10 أخرى 1 (يرجى التحديد)
						W3-11 أخرى 2 (يرجى التحديد)

ما الذي اخترته كأسوأ قطاع رقم 2 و لماذا؟						
5	4	3	2	1	n/a	أسوأ قطاع رقم 2:.....
						W2-1 النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						W2-2 روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						W2-3 قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						W2-4 قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						W2-5 مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						W2-6 مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						W2-7 مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						W2-8 مستوى الاتفاق على الصناعة (النفقات على الإنتاج)
						W2-9 يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						W2-10 أخرى 1 (يرجى التحديد)
						W2-11 أخرى 2 (يرجى التحديد)

ما الذي اخترته كأسوأ قطاع رقم 5 و لماذا؟						
5	4	3	2	1	n/a	أسوأ قطاع رقم 5:.....
						النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						مستوى الانفاق على الصناعة (النفقات على الإنتاج)
						يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						أخرى 1 (يرجى التحديد)
						أخرى 2 (يرجى التحديد)

ما الذي اخترته كأسوأ قطاع رقم 4 و لماذا؟						
5	4	3	2	1	n/a	أسوأ قطاع رقم 4:.....
						النفقات العامة على البحوث و التطوير (النفقات الحكومية على البحوث و التطوير)
						روابط وثيقة مع الاستثمار المباشر الأجنبي (علاقات/صلات مع المستثمر الأجنبي)
						قطاعات المشاريع الصغيرة و المتوسطة الديناميكية (قدرة المشاريع الصغيرة و المتوسطة على التأقلم مع التغيير)
						قطاعات المشاريع الصغيرة و المتوسطة المنافسة (قدرة المشاريع الصغيرة و المتوسطة على التنافس الشديد)
						مستوى النفقات على تكنولوجيا المعلومات و الاتصالات (النفقات على تكنولوجيا المعلومات و الاتصالات)
						مستوى/استخدام خريجي الهندسة/العلوم (الموظفون من خريجي الهندسة و العلوم)
						مستوى نفقات قطاع الصناعة على البحوث و التطوير (نفقات قطاع الصناعة على البحوث و التطوير)
						مستوى الانفاق على الصناعة (النفقات على الإنتاج)
						يتلقى القطاع الصناعي الأموال العامة من أجل الإبداع (المساعدات المالية الحكومية للصناعة)
						أخرى 1 (يرجى التحديد)
						أخرى 2 (يرجى التحديد)

الجزء (5): نود أن نسألك في هذا الجزء عن تأثير الإبداع ضمن دولة الكويت. و لذلك نود أن تضع علامة (√) في أحد المربعات الخمسة لإظهار درجة الأهمية التي توليها لهذا العامل فيما يتعلق بتأثير الإبداع (بحيث أن رقم 1 = معارض بشدة، 2 = معارض، 3 = لا معارض و لا موافق، 4 = موافق، 5 = موافق بشدة).

تأثير الإبداع ضمن دولة الكويت						
5	4	3	2	1		
					لقد ساعد الإبداع القطاع العام على الأداء بشكل أفضل	Imp1
					لقد ساعد الإبداع القطاع الخاص على الأداء بشكل أفضل	Imp2
					لقد ساعد الإبداع كلاً من القطاع العام والخاص على الأداء بشكل أفضل على حد سواء	Imp3
					لقد ساعد الإبداع القليل من القطاعات فقط على الأداء بشكل أفضل	Imp4
					لقد ساعد الإبداع جميع القطاعات على الأداء بشكل أفضل	Imp5
					لقد حسن الإبداع الاقتصاد في الكويت بشكل كبير	Imp6

أذكر شيئاً واحداً تشعر بأنه يمكن القيام به للارتقاء بالعمل الإبداعي في الكويت	
<p>.....</p> <p>.....</p> <p>.....</p>	Imp7

هل بإمكان الاستثمار الأجنبي تحفيز الإبداع في الكويت؟	
<p><input type="checkbox"/> لا <input type="checkbox"/> نعم</p>	Imp8

إذا كان الجواب نعم، يرجى اقتراح كيفية القيام بذلك أو أذكر أمثلة على كيفية حدوث ذلك	
<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	Imp9

. **الجزء (6):** في هذا الجزء، نود التعرف على رأيك في الدور الذي يلعبه الإبداع ضمن دول مجلس التعاون الخليجي. يرجى تصنيف دول الخليج بالنسبة إلى الإبداع (حيث 1 = البلد الأكثر إبداعاً و 6 = البلد الأقل إبداعاً).

دول مجلس التعاون الخليجي					
.....	قطر	Cty4	.....	البحرين	Cty1
.....	السعودية	Cty5	.....	الكويت	Cty2
.....	الإمارات	Cty6	.....	عمان	Cty3

ما هي الأسباب التي دعتك إلى تصنيف هذا البلد في المرتبة الأولى؟	
.....	Cty7

شكراً لكم على مشاركتكم

APPENDIX II

Appendix 2.1 Most prominent strengths and weaknesses of the Kuwaiti economy in accordance with the index of global competition 2008-2009.

Strengths		Weakness	
Element	International Position	Element	International Position
Budget Surplus	1	Restrictions on Foreign Ownership	125
National Savings Average	1	Direct Foreign Investment and Technology Transfer	119
Extent and Effect of Taxes	4	Innovative Ability	110
Brain Drain	8	Dependence on Professional Management	102
Flexibility in Determining Salaries	9	Government purchase of technological products	100
Government Debt	10	No. of Procedures for starting a commercial operation	94
Organized Crime	12	Effectiveness of the Boardrooms	93

SOURCE BASED ON DATA OBTAINED FROM:

Arab Planning Institute (API) <http://www.arab-api.org>

National Bank of Kuwait (<http://www.nbk.com>)

APPENDIX III

Appendix 3.1 Independent Samples Test – Nationality – (Best Sectors & Reasons)

		Levene's Test		t-test for Equality of Means				
							95% Conf. Interval	
		F	Sig.	t	Sig.-2tailed	Mean Diff.	Lower	Upper
Best sector								
Best No 1 Sector	Equal var. assumed	.636	.428	1.674	.098	2.146	-.407	4.699
	Equal var. not assumed			1.663	.102	2.146	-.443	4.735
Best No 2 Sector	Equal var. assumed	.039	.844	-.383	.703	-.440	-2.729	1.849
	Equal var. not assumed			-.385	.702	-.440	-2.734	1.854
Best No 3 Sector	Equal var. assumed	.947	.334	-.249	.804	-.303	-2.725	2.119
	Equal var. not assumed			-.258	.797	-.303	-2.652	2.047
Best No 4 Sector	Equal var. assumed	.518	.474	1.745	.085	1.989	-.282	4.260
	Equal var. not assumed			1.791	.079	1.989	-.235	4.213
Best No 5 Sector	Equal var. assumed	.480	.491	1.342	.184	1.479	-.716	3.675
	Equal var. not assumed			1.297	.201	1.479	-.813	3.772
Reasons for selecting the best No. 1 sector: BANKING								
Public Expenditure on R&D	Equal var. assumed	.612	.437	-1.378	.172	-.643	-1.571	.286
	Equal var. not assumed			-1.401	.167	-.643	-1.562	.277
Good links with FDI	Equal var. assumed	.592	.444	-.791	.431	-.320	-1.126	.486
	Equal var. not assumed			-.808	.422	-.320	-1.114	.474
Dynamic SME Sectors	Equal var. assumed	.213	.646	-.278	.782	-.107	-.871	.658
	Equal var. not assumed			-.288	.774	-.107	-.849	.635
Competitive SME Sectors	Equal var. assumed	1.114	.294	.370	.712	.142	-.621	.904
	Equal var. not assumed			.386	.701	.142	-.593	.876
Level of Expenditure on ICT	Equal var. assumed	.317	.575	-.074	.941	-.026	-.725	.673
	Equal var. not assumed			-.077	.939	-.026	-.705	.653
Level/use of Science/Engineering graduates	Equal var. assumed	.086	.770	-.289	.774	-.111	-.878	.655
	Equal var. not assumed			-.286	.776	-.111	-.891	.668
Level of Industry Expenditure on R&D	Equal var. assumed	.889	.349	-.203	.840	-.081	-.873	.712
	Equal var. not assumed			-.209	.835	-.081	-.853	.692
Level of Manufacturing Expenditure	Equal var. assumed	.824	.367	-.849	.399	-.336	-1.123	.452
	Equal var. not assumed			-.879	.383	-.336	-1.100	.429
Industry Receives Public Money for Innovation	Equal var. assumed	.936	.336	-.630	.530	-.270	-1.124	.584
	Equal var. not assumed			-.613	.543	-.270	-1.156	.616

Appendix 3.2 - Independent Samples Test – Nationality – (Worst Sectors & Reasons)

		Levene's Test		t-test for Equality of Means				
		F	Sig.	t	Sig.- 2tailed	Mean Diff.	95% Conf. Interval	
							Lower	Upper
Worst sector								
Worst No 1 Sector	Equal var. assumed	.166	.685	.891	.376	1.074	-1.328	3.476
	Equal var. not assumed			.873	.387	1.074	-1.398	3.546
Worst No 2 Sector	Equal var. assumed	4.337	.041	-.757	.452	-.723	-2.627	1.181
	Equal var. not assumed			-.819	.415	-.723	-2.486	1.039
Worst No 3 Sector	Equal var. assumed	.431	.514	.314	.755	.346	-1.852	2.545
	Equal var. not assumed			.308	.759	.346	-1.909	2.602
Worst No 4 Sector	Equal var. assumed	.721	.398	-.306	.760	-.394	-2.957	2.168
	Equal var. not assumed			-.309	.758	-.394	-2.951	2.163
Worst No 5 Sector	Equal var. assumed	2.545	.115	-1.673	.098	-1.867	-4.090	.356
	Equal var. not assumed			-1.743	.087	-1.867	-4.011	.277
Reasons for selecting the worst No. 1 sector: PUBLIC HEALTH & AGRICULTURE								
Public Expenditure on R&D	Equal var. assumed	.026	.873	-.937	.352	-.338	-1.055	.380
	Equal var. not assumed			-.934	.355	-.338	-1.063	.388
Good links with FDI	Equal var. assumed	2.881	.094	-1.683	.097	-.603	-1.318	.111
	Equal var. not assumed			-1.576	.122	-.603	-1.375	.168
Dynamic SME Sectors	Equal var. assumed	.091	.763	-1.101	.274	-.412	-1.157	.333
	Equal var. not assumed			-1.110	.272	-.412	-1.155	.332
Competitive SME Sectors	Equal var. assumed	.135	.715	-.792	.431	-.296	-1.041	.449
	Equal var. not assumed			-.782	.438	-.296	-1.056	.464
Level of Expenditure on ICT	Equal var. assumed	.631	.429	-.218	.828	-.072	-.730	.586
	Equal var. not assumed			-.209	.835	-.072	-.763	.619
Level/use of Science/ Engineering graduates	Equal var. assumed	5.700	.019	.550	.584	.220	-.576	1.016
	Equal var. not assumed			.513	.610	.220	-.644	1.084
Level of Industry Expenditure on R&D	Equal var. assumed	2.266	.136	-.207	.837	-.072	-.765	.621
	Equal var. not assumed			-.194	.847	-.072	-.817	.673
Level of Manufacturing Expenditure	Equal var. assumed	1.704	.196	-1.490	.140	-.558	-1.303	.188
	Equal var. not assumed			-1.429	.159	-.558	-1.343	.227
Industry Receives Public Money for Innovation	Equal var. assumed	.000	.999	-.986	.327	-.392	-1.184	.400
	Equal var. not assumed			-.969	.337	-.392	-1.205	.420

Appendix 3.3 Independent Samples Test – Working Sector – (Best Sectors & Reasons)

		Levene's Test		t-test for Equality of Means				
							95% Conf. Interval	
		F	Sig.	t	Sig.-2tailed	Mean Diff.	Lower	Upper
Best sector								
Best No 1 Sector	Equal var. assumed	.760	.386	.088	.930	.112	-2.415	2.639
	Equal var. not assumed			.090	.929	.112	-2.371	2.594
Best No 2 Sector	Equal var. assumed	.363	.549	-.472	.638	-.527	-2.751	1.697
	Equal var. not assumed			-.465	.644	-.527	-2.793	1.739
Best No 3 Sector	Equal var. assumed	.249	.619	.148	.883	.175	-2.180	2.530
	Equal var. not assumed			.146	.884	.175	-2.216	2.566
Best No 4 Sector	Equal var. assumed	.367	.547	-.925	.358	-1.040	-3.279	1.199
	Equal var. not assumed			-.935	.353	-1.040	-3.261	1.181
Best No 5 Sector	Equal var. assumed	1.378	.244	.507	.614	.548	-1.608	2.704
	Equal var. not assumed			.524	.602	.548	-1.540	2.636
Reasons for selecting the best No. 1 sector: BANKING								
Public Expenditure on R&D	Equal var. assumed	4.323	.041	1.410	.162	.639	-.263	1.541
	Equal var. not assumed			1.457	.149	.639	-.235	1.513
Good links with FDI	Equal var. assumed	3.550	.063	-.853	.396	-.336	-1.119	.448
	Equal var. not assumed			-.895	.374	-.336	-1.083	.412
Dynamic SME Sectors	Equal var. assumed	.013	.908	.803	.425	.299	-.442	1.039
	Equal var. not assumed			.795	.430	.299	-.452	1.049
Competitive SME Sectors	Equal var. assumed	3.613	.061	.024	.981	.009	-.733	.751
	Equal var. not assumed			.023	.982	.009	-.767	.785
Level of Expenditure on ICT	Equal var. assumed	.000	.991	-.362	.718	-.124	-.803	.556
	Equal var. not assumed			-.362	.718	-.124	-.805	.558
Level/use of Science/Engineering graduates	Equal var. assumed	.048	.827	-.402	.689	-.150	-.895	.594
	Equal var. not assumed			-.405	.687	-.150	-.892	.592
Level of Industry Expenditure on R&D	Equal var. assumed	1.198	.277	.912	.365	.351	-.415	1.117
	Equal var. not assumed			.886	.379	.351	-.441	1.143
Level of Manufacturing Expenditure	Equal var. assumed	.512	.476	.192	.848	.074	-.695	.843
	Equal var. not assumed			.196	.845	.074	-.679	.827
Industry Receives Public Money for Innovation	Equal var. assumed	.743	.392	-.365	.716	-.152	-.984	.679
	Equal var. not assumed			-.372	.711	-.152	-.969	.664

Appendix 3.4 Analysis of Variance (ANOVA)–Working Position (Best Sectors & Reasons)

		Sum of Squares	Df	Mean Square	F	Sig.
Best Sector						
Best No 1 Sector	Between Groups	61.249	5	12.250	.397	.850
	Within Groups	2224.046	72	30.890		
	Total	2285.295	77			
Best No 2 Sector	Between Groups	140.161	5	28.032	1.234	.302
	Within Groups	1635.685	72	22.718		
	Total	1775.846	77			
Best No 3 Sector	Between Groups	216.947	5	43.389	1.766	.131
	Within Groups	1768.706	72	24.565		
	Total	1985.654	77			
Best No 4 Sector	Between Groups	283.721	5	56.744	2.670	.659
	Within Groups	1530.241	72	21.253		
	Total	1813.962	77			
Best No 5 Sector	Between Groups	22.818	5	4.564	.200	.962
	Within Groups	1646.477	72	22.868		
	Total	1669.295	77			
Reasons for selecting the best No.1 Sector: BANKING						
Public Expenditure on R&D	Between Groups	25.962	5	5.192	1.369	.246
	Within Groups	273.026	72	3.792		
	Total	298.987	77			
Good links with FDI	Between Groups	17.274	5	3.455	1.217	.310
	Within Groups	204.380	72	2.839		
	Total	221.654	77			
Dynamic SME Sectors	Between Groups	1.654	5	.331	.121	.987
	Within Groups	196.307	72	2.726		
	Total	197.962	77			
Competitive SME Sectors	Between Groups	6.578	5	1.316	.498	.777
	Within Groups	190.256	72	2.642		
	Total	196.833	77			
Level of Expenditure on ICT	Between Groups	13.905	5	2.781	1.322	.265
	Within Groups	151.480	72	2.104		
	Total	165.385	77			
Level/use of Science/ Engineering graduates	Between Groups	12.884	5	2.577	.997	.426
	Within Groups	186.000	72	2.583		
	Total	198.885	77			
Level of Industry Expenditure on R&D	Between Groups	27.401	5	5.480	2.133	.071
	Within Groups	184.971	72	2.569		
	Total	212.372	77			
Level of Manufacturing Expenditure	Between Groups	16.683	5	3.337	1.233	.303
	Within Groups	194.856	72	2.706		
	Total	211.538	77			
Industry Receives Public Money for Innovation	Between Groups	43.240	5	8.648	3.043	.055
	Within Groups	204.606	72	2.842		
	Total	247.846	77			

Appendix 3.5 Analysis of Variance (ANOVA) – Working Position (Worst Sectors & Reasons)

		Sum of Squares	df	Mean Square	F	Sig.
Worst Sector						
Worst No 1 Sector	Between Groups	89.454	5	17.891	.684	.637
	Within Groups	1882.764	72	26.150		
	Total	1972.218	77			
Worst No 2 Sector	Between Groups	198.142	5	39.628	2.751	.625
	Within Groups	1037.037	72	14.403		
	Total	1235.179	77			
Worst No 3 Sector	Between Groups	70.712	5	14.142	.650	.662
	Within Groups	1566.582	72	21.758		
	Total	1637.295	77			
Worst No 4 Sector	Between Groups	43.650	5	8.730	.288	.918
	Within Groups	2180.567	72	30.286		
	Total	2224.218	77			
Worst No 5 Sector	Between Groups	133.346	5	26.669	1.200	.318
	Within Groups	1599.538	72	22.216		
	Total	1732.885	77			
Reasons for selecting the worst No.1 Sector: PUBLIC HEALTH & AGRICULTURE						
Public Expenditure on R&D	Between Groups	9.205	5	1.841	.794	.558
	Within Groups	167.013	72	2.320		
	Total	176.218	77			
Good links with FDI	Between Groups	3.625	5	.725	.298	.913
	Within Groups	175.362	72	2.436		
	Total	178.987	77			
Dynamic SME Sectors	Between Groups	8.523	5	1.705	.674	.645
	Within Groups	182.157	72	2.530		
	Total	190.679	77			
Competitive SME Sectors	Between Groups	16.678	5	3.336	1.392	.237
	Within Groups	172.502	72	2.396		
	Total	189.179	77			
Level of Expenditure on ICT	Between Groups	5.493	5	1.099	.560	.730
	Within Groups	141.187	72	1.961		
	Total	146.679	77			
Level/use of Science/Engineering graduates	Between Groups	1.856	5	.371	.125	.986
	Within Groups	213.439	72	2.964		
	Total	215.295	77			
Level of Industry Expenditure on R&D	Between Groups	1.149	5	.230	.102	.991
	Within Groups	161.531	72	2.243		
	Total	162.679	77			
Level of Manufacturing Expenditure	Between Groups	13.630	5	2.726	1.091	.373
	Within Groups	179.857	72	2.498		
	Total	193.487	77			
Industry Receives Public Money for Innovation	Between Groups	4.035	5	.807	.276	.925
	Within Groups	210.836	72	2.928		
	Total	214.872	77			