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**PROFESSOR** : Minyuan Zhao

**STUDENT** : Ali Ibrahim

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**Student : Ali Ibrahim**

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## **Economic Clustering in Emerging Markets**

### **Case Study: The Gulf Region**

#### Table of Contents

1. Introduction: .....	2
2. Clusters emergence in emerging markets: .....	2
3. Combining theory and example, Case study of the Gulf Region: .....	5
3.1. GCC Economic Overview.....	5
3.2. GCC & Economic Clusters.....	5
3.2.1. Clusters Development in UAE .....	6
3.2.1.1. Clusters Dubai - The Financial Services Cluster.....	6
3.2.1.2. Clusters Dubai – Major Financial Clusters Contribution .....	12
3.2.1.3. UAE Economy Diversification – Result of Clusters Policy.....	12
3.2.1.1. Observations regarding UAE Clusters .....	13
3.2.2. Clusters Development in Kingdom of Saudi Arabia (KSA).....	13
3.2.3. Clusters Development in other GCC Countries.....	16
3.3. GCC Performance Assessment.....	17
4. Sustainability of the analyzed economic clusters: .....	19
5. Comparison of Gulf Economies and other developing countries: .....	22
6. Lessons drawn from the Gulf experience: .....	23
7. Appendices.....	24
7.1. GCC Countries & map.....	24
8. References: .....	25

## **1. Introduction:**

Harvard Professor Michael E. Porter defines Economic development as the "long-term process of building a number of interdependent microeconomic capabilities and incentives to support more advanced forms of competition." According to Porter, development depends on the formation of industry clusters, which support faster improvement and innovation of products.

Simply speaking, industry clusters are geographic concentrations of competing, complementary, or interdependent firms and industries that do business with each other and/or have common needs for talent, technology, and infrastructure. Clusters would also include other required organizational paraphernalia such as universities, venture capital firms, law firms, accounting firms and executive search firms. The firms included in the cluster derive strength from both competition and cooperation with each other. They may compete directly with some members of the cluster, purchase inputs from other cluster members, and rely on the services of other cluster firms in the operation of their business.

Example of industry clusters in the United States of America would include North Carolina's Research Triangle; Hartford, Connecticut's insurance and finance markets; Hollywood's film industry; carpets in Dalton, Georgia; tourism in south Florida; technology in Massachusetts and in Silicon Valley, California.

The phenomenon on economic and technology clusters is not new. Economic clusters date back at least to the great Hellenistic and Islamic centers of excellence such as Alexandria, Cordoba and Baghdad, and more recently, the industrial agglomerations in the early modern United Kingdom and the Atlantic coast of the United States. What has happened as a result of the spectacular success of Silicon Valley—and later Cambridge, UK and Bangalore, India—is the renewed interest in creating these as an instrument of economic and technology policy (Osama 2006)

This paper aims to analyze economic clusters in the Gulf Region, a special case of emerging economies with rich governments and a strong reliance on a single source of revenue, Oil.

## **2. Clusters emergence in emerging markets:**

Despite their widespread popularity and prevalence, there is no magic recipe for ensuring the creation and sustained development of economic clusters. Advancement in economic theories still could not explain all what goes within economic clusters, and the success or failure of a cluster depends on a very large set of factors making every case a unique combination of causes and effects and preventing scientists from creating a framework or a model encompassing a successful cluster characteristics.

Realizing the roadblocks preventing researchers from fully defining all aspects of economic clusters, it is still possible to analyze the birth and growth of many of the existing clusters that

we know of today. Academic research associates clusters' establishment with various factors, some of which are listed below:

- Historical circumstances: As in the example of MIT and Harvard researchers who were the beginnings for several clusters in Massachusetts
- Sophisticated local demand: An example would be the environmental cluster in Finland which emerged as a result of pollution problems
- Prior existence of related supplier industries or clusters: The golf equipment cluster near San Diego is a good example, as it has roots back to southern California's aerospace cluster
- Innovative companies that stimulate the growth of many others: Medtronic played a major role in creating Minneapolis medical-device cluster
- Chance: In rare occasion, chance was the best explanation provided for the existence of some cluster, such as the telemarketing cluster in Omaha, Nebraska, that was made possible by fiber-optic telecommunications capability and infrastructure created to support United States Strategic Air Command (SAC) facilities

Once the cluster seed is found within a supportive environment and appropriate circumstances, a self-reinforcing cycle promotes its growth, attracting talents and entrepreneurs with ideas and relevant skills to migrate in from other locations. Case studies suggest that a successful cluster requires a decade or more to develop depth and real competitive advantage (M. Porter, Clusters and the New Economics of Competition 1998).

Assuming no interference by individuals and governments, it's the expectation that economic clusters are, and will continue to be, naturally developing in emerging economies. However, natural emergence of economic clusters takes time and would limit any region to specific industries or functions that align with available resources. Day after day, the world is becoming a more competitive place and ambitious developing countries, which desire to play a role in the global economy, must achieve results within a relatively short time. Those countries are not willing to wait for the natural cycle that may or may not bring advancement and prosperity.

The considerable advances in economic theories and empirical research in recent history allowed a high level of quantification for the benefit of successful economic clusters and their role in developing and advancing economies. Learning the importance of economic clusters, many governments and regions around the world have embarked on attempts to create economic (and technology) clusters. A 2003 study of cluster initiatives around the world literally identified hundreds of cluster initiatives of varying sizes and scope including among others, 112 in Northern Europe, 82 in Australia and New Zealand, 107 in Western Europe, and 92 in North America (Osama 2006).

While clusters come in various shapes and sizes, so do cluster policies. Governments around the world have tried to use a number of policy instruments to jumpstart economic clustering including, but not limited to:

- Development of cluster strategies and a cluster identity in regions
- Liberal taxation policies
- Creation of science, technology, and research parks

- Investment in university-based research programs
- Investment in human resources development
- Creation of programs to market the region's competitiveness
- Improvement of the entrepreneurial environment
- Creation of public and private venture capital programs
- Creation of institutions of collaboration.

Not each of these policy instruments is equally effective in encouraging cluster formation and the appropriate choice may be determined by the unique characteristics and the initial conditions of the region in question.

Understanding the importance of economic clusters, it comes as no surprise that developing countries with ambitious agenda will follow suit. Many countries in the developing world have also embarked on cluster initiatives of their own. Panama's Knowledge City, Malaysia's Cyberjaya, Doha's Education City, and Oman's Knowledge Oasis are examples, to name a few.

In their book "From Agglomeration to Innovation: upgrading industrial clusters in emerging economies", the authors highlight the role of governments in supporting economic clusters in emerging economies, using case studies on Malaysia and Singapore. In addition, the authors validated how small and medium-sized enterprises (SMEs) matter in innovation is a further hand of the state in the Asian-nurturing context. They touched on public policies and how they mitigate the externality of poaching trained workers by emphasizing university graduates to augment the scarcity of firm-provided training such in the case of Thailand's computer cluster.

The book didn't only highlight the government role in creating clusters in emerging economies, but it went further in depth to analyze complementary factors that allowed success. The authors used a flowchart approach to explain how, in some cases, foreign investment triggered agglomeration as the first step and innovation as the second, rather than a single path. An industrial cluster policy aims for innovation; it affects internal linkages between production and information, ranging from upgrading infrastructure to a national innovation system. It is unlike public policy in Silicon Valley type clusters, putting theory and policy into agglomeration helps to transform agglomeration into innovation.

Even when crediting national governments for reviving clusters, it's important to recognize that regional and local governments often play the largest role. Extensive mail survey indicated that Japanese SMEs credited their regional and local governments in deregulation. In Brazil, it was similarly found that local institutions worked best for local collective goods rather than national policies. Local governments in China were also essential for the market to reach its full potential (Low 2010).

Although the majority of clusters initiative in the emerging market were found to be supported by some form of government, it is imperative to mention that there are cases where the government did not play a role at all. A case study would be Brazil oil and gas cluster, where the state company Petrobras and cluster partnership institutions have been moving slowly to develop the local innovation system based on cooperation with universities. The effort is hindered by human resource issues and does not enjoy any government support.

### **3. Combining theory and example, Case study of the Gulf Region:**

The Gulf Cooperation Council Countries (GCC Countries: Bahrain, Kuwait, Oman, Qatar, Kingdom of Saudi Arabia (KSA) and the United Arab Emirates (UAE)) have benefited enormously from oil and gas reserves that have generated significant financial liquidity in the last decade. The present wealth comes with a responsibility to those in charge to put the wealth to use and ensure that the GCC countries expand in affluence while overcoming the internal and external pressures that could shift them from the path of sustainable prosperity.

#### **3.1. GCC Economic Overview**

An oil-based region with 35.7% of the world's total proven crude oil reserves, the GCC area ranks as the largest producer as well as exporter of petroleum and plays a leading role in the world in general and OPEC in particular. The six countries of the GCC region have enjoyed a spectacular economic boom until late 2008. The GCC economy tripled in size to \$ 1.1 trillion during 2002 to 2008. Nominal GDP decreased by -19.3% to \$868.5 billion in 2009 due to the global financial and economic crisis, and the world oil market slump, but is expected to rebound beyond 2011. For the GCC region, oil and gas sector represents approximately 73% of total export earnings, roughly 63% of government's revenues and 41% of its GDP.

The GCC region has posted a budget surplus of 25.3% of GDP in 2008 compared to 17.7% of GDP in 2007 due to high oil prices and increased oil production levels, coupled with a surge in non-oil revenues. High oil revenues earned by the region in the past resulted in strong capital spending. Fiscal surplus dropped to a 3.3% of GDP in 2009 due to the global financial crisis and the slump in the world oil market (Gulf Base 2011).

#### **3.2. GCC & Economic Clusters**

The strong economic performance of the GCC countries is attributed mostly to strong global oil demand until late 2008, but a portion of it is credited to other factors such as better geo-political environment; acceleration of reform measures; strong boost in privatization activities; growth of assets of central banks and the strength of the GCC corporate sector.

The biggest fear that the GCC countries experience is the sustainability of the economic strength. It is clear from the economic overview section that the GCC economies in 2011 are still heavily reliant on oil revenue. However, oil is a diminishing resource that faces the challenges of price, exploration, alternative reserves and a slow, but steady shift to renewable energy resources. The governments in the region are aware of the fiscal reforms needed to reduce dependence on the oil to achieve fiscal discipline. The goal of achieving diversification is well in progress in the region despite the global financial and economic crisis, which made little impact on the economies of the region compared to the rest of the world.

Similar to the case of other emerging economies, GCC countries are looking at economic clusters as the best way to diversify and grow their economies. Economic reform programs are ongoing on both the levels of individual countries and the council as a unity, focusing to attract domestic, regional and foreign private investment into oil & gas, power generation, real-estate,

telecommunications and other industries. The slump in oil market due to the global financial and economic crisis slowed the pace of investment and development projects, but the recent global economic recovery is expected to cause a rebound in the region's economic activities.

On a council level, the Gulf States founded the Gulf Organization for Industrial Consulting (GOIC) in 1976. The organization was conceptualized by the GCC Member States as a knowledge-hub and industrial investment promotion catalyst, for the purpose of industrial diversification and clustering within the GCC countries. It targets developing industries throughout the region by means of providing the public and the private industrial and economic sector with distinctive knowledge, through a complete set of specialized research, information, consultancy, training and technical services. The organization has been playing an influential part in identifying and introducing new industries to the region as well as determining synergies for the existing ones. GOIC's recommendations shaped public policy, particularly the unified common industrial strategy that was adopted by all GCC member states. Recently, the organization adopted a new direction, where considerable relevance was to be allotted to the private sector. GOIC slanted towards a more dynamic public-private sector partnership.

The best way to illustrate the Gulf governments' investment in creating economic clusters is by presenting and analyzing specific examples from the area. The following segment will review few clusters' activities within the GCC states.

### **3.2.1. Clusters Development in UAE**

The United Arab Emirates is comprised of seven emirates. Although economic developments are ongoing in all emirates, most of the projects are concentrated in two of the emirates: Dubai and Abu Dhabi, which are the largest and wealthiest in UAE. In fact, the local government of Dubai is the forefront runner within UAE to diversify its economy, driven by its inability to rely on oil revenues as it does not have as rich of a reserve as Abu Dhabi or other emirates.

In 2009 Dr. Christian Ketels, a member of the Harvard Business School faculty at the Institute for Strategy and Competitiveness, authored the report "Clusters and Dubai's Competitiveness". The assessment was performed at the request and with support of Dubai Competitiveness Council, the operational arm of Dubai Economic Council. The report presents a consistent analysis of the four clusters that currently dominate the Dubai economy: construction, financial services, tourism, and transportation and logistics. It provides a profile of each cluster, an assessment of its current performance, a discussion of the cluster-specific business environment that drives these outcomes and the outlook for the clusters. I will present a detailed overview of the "financial" cluster as an example of a cluster development and assessment in UAE.

#### **3.2.1.1. Clusters Dubai - The Financial Services Cluster**

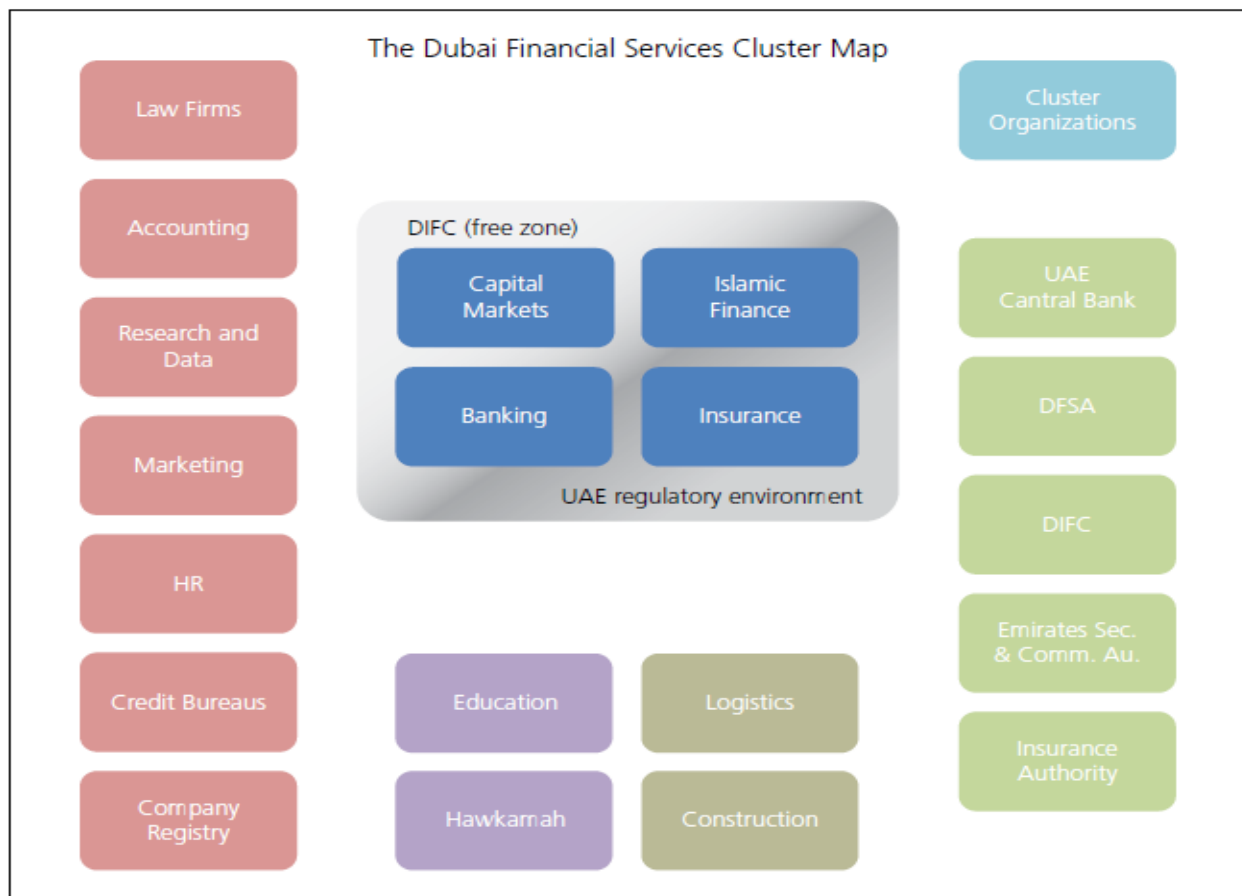
a- Map of Dubai financial cluster:

The Dubai financial services cluster is centered around four core activities: Traditional banking, insurance products, Capital markets' functions & Islamic finance. Local banks and insurance

companies dominate this market, but there are also a few active foreign banks. A large number of foreign banks offer investment banking services to clients throughout the region in the regulatory environment of the Dubai International Financial Center (DIFC) free zone; however, local banks continue to have the highest market share. Islamic finance is an area where the ambition is to move beyond regional leadership and become one of the central global hubs. Again, local banks dominate even though a few foreign banks provide their services as well.

Around these core activities, a wide range of specialized service providers has developed. Many international law firms, accounting companies, financial information & research specialists, human resource firms for the financial sector and marketing companies are present in Dubai. The provision of specialized data, e.g. credit bureaus, a securities register, and a centralized depository of company accounts, remains relatively shallow. Emcredit, for example, was founded in 2006 on the initiative of the Dubai government to provide credit data but has no full coverage, challenged by an economy with many expatriates without local credit history as well as a significant number of small and medium sized companies (Ketels 2009).

In capital markets/investment banking, Dubai competes with a number of rival financial services clusters including London and New York globally as well as Kuwait, Qatar, Bahrain, and Saudi Arabia regionally. In Islamic Banking, Malaysia and Bahrain compete with Dubai, while the large national markets in Iran and Saudi Arabia are mostly closed to international competition.



**Diagram 1** - Source: Ketels, Christian. Clusters And Dubai's Competitiveness. Dubai Economic Council, 2009.



The map of the Dubai financial services cluster (See Diagram 1 and Table 1) reveals a number of key aspects:

- First Aspect: local banks and traditional banking products for the local and regional economy, including some its clusters, are central to the cluster. However, the number of foreign companies present in Dubai is significant, even though the volume of their activities so far is relatively moderate.
- Second Aspect: there is a solid presence of related services, especially advanced business services needed for financial transactions. This breadth provides the key foundations for dynamic interactions within the cluster. Weaknesses, however, exist in the financial information infrastructure and in the full breadth of active capital markets in local currency.
- Third Aspect: weaknesses are most prevalent within the educational institutions and industry associations and networks. Specialized educational institutions are slowly emerging but their role in providing skilled employees to the cluster remains very limited (Ketels 2009).

Local Banks	Total assets
Emirates NBD	235,402,274
National Bank of Abu Dhabi	139,430,718
Abu Dhabi Commercial Bank	106,213,849
Mashreq Bank	86,290,174
Dubai Islamic Bank	83,738,759
First Gulf Bank	73,197,545
Union National Bank	55,456,725
Abu Dhabi Islamic Bank	44,042,179
Commercial Bank of Dubai	30,436,017
Emirates Islamic Bank	16,953,909
Foreign Banks	Total assets
HSBC Bank Middle East Limited	93,062,331
Standard Chartered Bank	52,999,567
ABN-Amro Bank	30,499,123
CitiBank	16,838,208
Barclays Bank	16,273,595
Bank Saderat Iran	12,576,330
Arab Bank	11,423,031
Bank Melli Iran	9,791,664
Habib Bank AG Zurich	9,010,387
Lloyds TSB Bank	8,481,363
Source: Emirates Bank Association, 2006-2007	

**Table 1** - Source: Ketels, Christian. Clusters And Dubai's Competitiveness. Dubai Economic Council, 2009.

b- History of Dubai financial cluster:

Historically, Kuwait and Bahrain have been the financial centers of the Gulf region. The Dubai financial services cluster in its present form is relatively young. Banks presence started in local

forms in the 1950s and foreign banks were slowly coming in the 1990s. In 2000, the establishment of a stock exchange, the Dubai Financial Market (DFM), as a public institution signaled a new phase in the development of the cluster. The Dubai International Financial Center (DIFC) was created as a free zone for financial activities in 2004. This was possible after an amendment to the UAE Constitution and a number of federal and Dubai laws. In 2005, the DIFC became home to the Dubai International Financial Exchange (DIFX), a second exchange located in the regulatory environment of the free zone. The DIFX was later renamed NASDAQ Dubai.

Since 2004/2005, the financial services cluster has grown rapidly. Local institutions have seen their balance sheets grow at a rapid rate. Trading volumes on the two exchanges have increased, and many foreign institutions have developed a presence in Dubai, often in the DIFC. In 2007, the UAE Central Bank introduced a new auction system for Certificates of Deposit (CDs). This instrument was used to extract liquidity from the market in an attempt to lower the inflationary pressure in the economy.

In 2008, the Dubai financial services cluster was affected by the global financial crisis. The financial markets lost a large fraction of their value and credit growth slowed down significantly. The UAE guaranteed all bank deposits for a period of three years. The UAE Central Bank provided a Dh50 billion (\$13.6 US billion) credit facility and made deposits of Dh70bn (\$19 US billion) in the local banking system to avoid liquidity constraints. With the banks in the UAE less exposed to the global liquidity shortages than their peers in the US and Europe, only 15% of the credit facility was actually used.

In 2009, the UAE dropped out of the plans for a GCC currency union, while Saudi-Arabia, Kuwait, Qatar, and Bahrain haven taken further steps in that direction. It remains to be seen whether and when these plans will be turned into reality but divergent monetary policy structures could inhibit the further integration of financial markets (Ketels 2009).

#### c- Assessment of Dubai financial cluster:

Financial services have become an important part of the Dubai economy. It accounts for roughly 10% of GDP, 1.3% of employment, and 4.3% of the total wage bill. Many official statistics combine financial services with other business services and report higher figures.

In comparison with the other financial centers, Dubai's focus on financial services seems less exceptional. Countries like Luxembourg, Switzerland, Singapore, and Ireland register a higher share of their GDP in financial services (See Table 2). The city-level employment data on strong financial centers is more dated, but indicates as well that New York, London, Frankfurt, and Hong Kong are among the cities with a stronger specialization in financial services than Dubai.

Overall, the Dubai financial services cluster has reached a significant size. It is the - or at least one of the – leader(s) in the region. Globally it is established among the secondary centers, following behind the leading group of financial centers with a truly global role (Ketels 2009).

	Share of Finance in GDP/GVA, 2007 or latest	Total Assets of the Financial Sector relative to GDP, 2006	Share of Financial Sector in Employment, 2007 or latest
Luxembourg	27.3%		11.5%
New York City (2002)	27.0%		9.0%
Geneva (2002)	25.0%		
Frankfurt (2002)	20.0%		
Switzerland (2002)	16.0%		
London (2002)	14.0%		
Switzerland	12.5%	620.8%	5.2%
Singapore	12.4%	469.8%	6.7%
Hong Kong (2002)	12.0%	1235.5%	5.0%
Ireland	11.2%	388.4%	4.3%
Dubai	10.2%		1.3%
Iceland	8.7%		4.3%
USA	7.9%	413.0%	4.2%
UK	7.6%	454.3%	3.5%
Japan	6.7%	505.5%	2.7%
United Arab Emirates	5.6%	187.4%	
Germany	4.2%	351.6%	3.0%
United Arab Emirates w/o Dubai	3.9%		
Bahrain		256.3%	
Kuwait		197.6%	
Saudi Arabia		173.0%	
Qatar			

Source: UAE Central Bank, 2008; HK Trade Office; WEF; OECD; Singapore Statistics

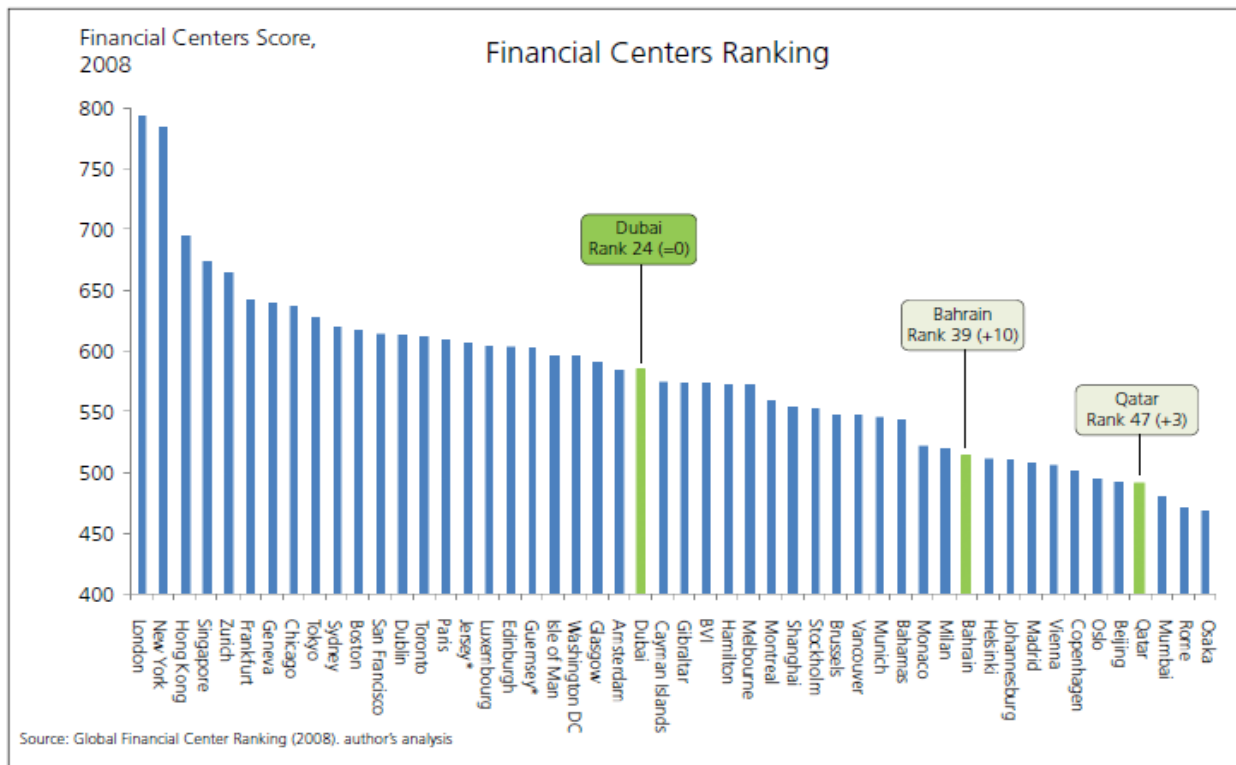
**Table 2** - Source: Ketels, Christian. Clusters And Dubai's Competitiveness. Dubai Economic Council, 2009.

d- Performance of Dubai financial cluster:

The cluster's ability to succeed will depend on its ability to provide better value than other locations. General indicators of the cluster's performance are the wages paid, an indicator of productivity, and the FDI (Foreign Direct Investment) inflows, an indicator of the attractiveness of Dubai for foreign financial service companies. On both accounts Dubai performs well.

In an aggregate assessment of financial centers around the globe, Dubai comes top in the Middle East and 24th overall (See Diagram 2). An assessment conducted by the DIFC confirms Dubai's leading role in the region. It finds Dubai/UAE to have advantages relative to its global peers in terms of cost of living and the cost of doing business. It has disadvantages on the quality of the business environment, especially the quality of institutions, of higher education and training, and to some degree the sophistication of business (Ketels 2009).

Further segments in the report provide analysis of Dubai stands on specific functions in the financial sector (such as capital market, Islamic banking ...). The analysis provided in this paper will be limited to an overview of the financial cluster and will not go into further details.



**Diagram 2** - Source: Ketels, Christian. Clusters And Dubai's Competitiveness. Dubai Economic Council, 2009.

e- Outlook of Dubai financial cluster:

The current global financial crisis has created deep challenges for the financial services sector around the world. The ultimate implications of the crisis and the regulatory response under way on the economic geography of financial activities are still evolving. Although the direct impact on the financial cluster in Dubai has initially been limited because local banks had no meaningful investments in those parts of the US and international financial markets that are at the core of the crisis, it has become increasingly clear that the Dubai cluster is not sheltered from the global market downturn. The global recession is affecting the cluster's core customers in the real estate, construction, and logistical business. The slow-down in Dubai growth will inevitably affect the growth of the financial cluster.

The analysis of the cluster's competitiveness suggests that the Dubai financial cluster will be able to overcome the current crisis better than many of its peers, especially with the government determination to back-up the financial sector. In addition, the growing local demand, a main driver of the cluster's emergence, is more resilient than the global economy. However, the expectations maintain that the growth will be very slow, at least in the short term.

The long-term competitiveness challenges facing the Dubai financial services cluster are different than the short-term ones, but they are no different than those faced by other cities within the GCC states. The long-term sustainability topic will be addresses later in the report.

### 3.2.1.2. Clusters Dubai – Major Financial Clusters Contribution

Data extracted from the report “Clusters and Dubai’s Competitiveness” shows that Dubai Government was successful in diversifying its economy by using the cluster strategy. A quick run of the % of GDP associated with every cluster is the best proof of the improvement (collected between 2006 and 2008):

Cluster	% of Dubai GDP	% of UAE GDP	% of Employment in Dubai
Construction and real estate	23.3%		41.1%
Financial services	10.2%	5.6%	1.3%
Logistics & Communications	12.6%	7.7%	7.5%
Tourism	10.7%	5.4%	6.3%

Table 3 - Source: Data extracted by author from Clusters and Dubai's Competitiveness

### 3.2.1.3. UAE Economy Diversification – Result of Clusters Policy

The UAE Economic Report 2009 released by the UAE Ministry of Economy at the end of May 2010 recorded a growth in GDP of 1.3 per cent in 2009, with the non-oil sector contributing 71.6 per cent, compared to 66.5 per cent in 2008, underscoring the success of the nation's economic diversification initiatives. The report noted that the economy benefitted from a massive increase in public spending despite lower oil export earnings. From around Dh254 billion (\$69.15 US billion) in 2008, grew by nearly 14 per cent to a record high of approximately Dh289 billion (\$78.7 US billion) in 2009. This increase in government expenditure occurred at a time when government revenue fell by a massive 35% from Dh450.3 billion (\$122.5 US billion) in 2008 to Dh292.6 billion (\$79.7 US billion) in 2009 due to lower oil prices and losses in investments abroad.

The breakdown of non-oil sector contribution to GDP is as follows:

Sector (Based on clusters within UAE in Dubai, Abu Dhabi or other cities)	contribution to GDP
Manufacturing	16.2%
Construction	10.7 %
Wholesale and retail trade and repairing services	9%
Real estate	8.2 %
Government services	8.0 %
Transportation, storage, and communication	7.1 %
Financial services	5.8 %
Hotels and restaurants	1.8 %
Agriculture, livestock, and fishing	1.7 %
Electricity, gas, and water	1.6 %
Household services	0.5 %

Table 4 - Source: The UAE Economy. government.ae, 2010

According to the Ministry of Economy, the UAE's economic recovery is gaining momentum as the Government initiates policies in support of a competitive knowledge-based economy led by innovative UAE nationals. Analysts predict that Abu Dhabi's robust economic fundamentals will drive the UAE's growth in 2010, while Dubai is expected to return to growth in 2011. In the meantime, the continued retrenchment in construction and real estate sectors is offset by recovery in the emirate's core activities of trade, retail sales and tourism. (The UAE Economy 2010).

### **3.2.1.1. Observations regarding UAE Clusters**

Analyzing the competitiveness of the UAE market in its current state, the following observations apply to the clusters situation in UAE:

- Clusters and cluster development efforts exist at the level of individual emirates
- There is significant overlap between cluster efforts within the UAE; collaboration among emirates and cities is very limited
- Current UAE's clusters build on natural endowments, infrastructure investments, and the attraction of foreign firms and talents
- Despite aggressive government efforts, success in creating clusters in areas outside traditional fields has been limited
- Dialogue and active collaboration within clusters is limited, even where there is a significant degree of co-location of activities

In summary, the UAE has made more progress in cluster-based economic diversification than many other oil-driven economies; however, building a broader portfolio of dynamic, sustainable clusters remains a major priority (M. E. Porter 2010).

### **3.2.2. Clusters Development in Kingdom of Saudi Arabia (KSA)**

#### **a. Industrial Clusters Program in KSA**

The Ministry of Commerce and Industry in Saudi Arabia, the largest economy in the MENA (Middle East and North Africa) region and the 23<sup>rd</sup> largest globally, had developed and oversees the implementation of the National Industrial Strategy. The Industrial clusters program, a major component of the strategy, is the best example of the government commitment to move toward a diversified economy organized by clusters.

The Government of Saudi Arabia had repeatedly stated its intention to leverage the country's assets by creating industrial clusters that would serve the world. In a 2010 presentation in Chicago, representative of the ministry of commerce and industry presented plans to create clusters of industries which entail not only building plants, but also developing the human capital, the business and services associated with these industries, and building the innovation capabilities. The chosen sectors were the metals processing, automotive value chain, home appliances, solar energy, and plastics & packaging. For every one of the sectors, plans for

Anchor projects were presented to prove the government commitment to industrial cluster. Diagram 3 provides an example of the automotive cluster introduction plan.



**Diagram 3** -Source: The Era of New Manufacturing in Saudi Arabia. US/Saudi Business Opportunities Forum 2010

#### b. Saudi Arabia's Economic Cities

The Kingdom of Saudi Arabia has announced the launch of six economic cities with an objective in mind, to grow the national economy and raise the standard of living for Saudis through:

- Enhancing the competitiveness of the Saudi economy
- Creating new jobs
- Improving Saudis' skill levels
- Developing the regions
- Diversifying the Economy

To ensure success, the economic cities will be developed according to six key design principles:

- 1- Jobs Development based on globally competitive advantage: Each city will be developed around at least one globally competitive cluster or industry, which will serve as an anchor and a growth engine for the city, around which other businesses will locate
- 2- State of the art 'hard' and 'soft' infrastructure : The cities will utilize their Greenfield opportunity to adopt state-of-the-art technology solutions to make them truly competitive
- 3- Creating opportunities for the private sector: Each city will be developed by the private sector, and will therefore generate major private investment opportunities in infrastructure, real estate and industry
- 4- Attracting Core Job: By Identifying and attracting core investors, core jobs will be created which will then spur other supporting services
- 5- Attracting People: To achieve our high aspirations in terms of job creation and investment volume, the cities need to offer an attractive lifestyle to grow beyond a mere industrial free
- 6- Business Friendly Environment: The cities will enjoy a business friendly regulatory environment which is competitive to other free zones globally (Saudi Arabia's Economic Cities n.d.)

The investment in the economic cities will bypass \$70 US billion and they are expected to be completed before 2030. Diagram 4 offers a map of the location and names of planned cities.



**Diagram 4** - Source: "Saudi Arabia's Economic Cities." Saudi Arabian General Investment Authority (SAGiA)

An example of one of the Economic Cities planning (King Abdullah Economic City = KAEC) is provided below (Diagram 5)

### **King Abdullah Economic City in Rabigh**

**A world class fully integrated economic city**

- ❖ Location: Built at a pristine location off the Red Sea north of Jeddah
- ❖ Focus: port and logistics, light industry, and services
- ❖ Size: 168 million square meters
- ❖ Investment size: US \$ 27 billion
- ❖ Employment: 1 million jobs
- ❖ Population: 2 million people
- ❖ Components:
  - Modern world-class Seaport
  - Industrial District
  - Financial Island
  - Education Zone
  - Resorts
  - Residential Area
- ❖ Master Developer: Emaar, The Economic City

**Diagram 5** - Source: "Saudi Arabia's Economic Cities." Saudi Arabian General Investment Authority (SAGiA)



### c. Evaluation of Saudi Arabic Clusters development strategy

In comparison to the UAE, the KSA is stages behind in terms of cluster development. The government has the vision, but it is just starting to go into the implementation phase. In an assessment of the KSA competitiveness, Professor Michael Porter noted that the government Industrial Development Strategy, which has an explicit focus on cluster development, is a major strength; however the policy doesn't extend to the entire economy and doesn't cover all industries and provinces.

It's also noted that the "Economic Cities" project, although impressive, has a different governance body than the clusters development program. In order to get the maximum benefits of the project, it should be tied with other economic clustering initiatives as they are all intended to serve the same goals. Another recommendation for KSA is to focus on making existing and emerging Saudi clusters more knowledge intensive, as the Science-based clusters will be slow to develop (M. Porter, Competitiveness as an Engine for Economic Growth: Implications for Saudi Arabia 2008).

### 3.2.3. Clusters Development in other GCC Countries

While the United Arab Emirates and the Kingdom of Saudi Arabia are leading in clusters development initiatives, similar efforts to establish economy diversification through clusters development are ongoing in the rest of the Gulf States (Bahrain, Kuwait, Oman and Qatar). It is not possible to cover all clusters in details within the scope of this paper, however an overview of a cluster from Oman and a second from Qatar is provided as an example of such activities.

#### a- Muscat's Knowledge Oasis - Oman

The Sultanate of Oman has recently attempted to embark on an ambitious program of clusters development that includes clusters in information technology (in Muscat's Knowledge Oasis), Energy and heavy industry (near the port of Sohar), food processing and tourism (all across Oman).

The Knowledge Oasis Muscat (KOM) boasts a modern state-of-the-art IT Park for attracting IT companies to Oman and include major upgrades to Sultan Qaboos University—including teaching modern business subjects like entrepreneurship etc.—to create a technologically literate and sophisticated workforce. KOM brings together a diversity of enterprises from industry niches as varied as M-commerce to international call centers. KOM is home to bluechips such as Oracle, Hewlett Packard, Motorola, Microsoft, NCR, and Huawei as well as dynamic hi-tech start-ups (About KOM 2011).

#### b- Doha's Education City - Qatar

Qatar's Education City at the outskirts of Doha is an attempt to create a cluster of higher-education and research institutions. It is the cornerstone of the Emir's strategy to transform Qatar into a leader in innovative education and research. It is an exciting experiment—a first of its kind

in the Middle East—whereby an attempt has been made to create a unique learning environment by bringing together the best colleges and schools from around the world.

The Education City houses campuses from Texas A&M University, Georgetown University, Carnegie Mellon University, and Weill Cornell Medical College. In addition, it houses the Qatar Science and Technology Park, Qatar National Research Fund, and the RAND-Qatar Policy Institute in what is promising to be a breakthrough project in the Islamic World. The Qatar Science and Technology Park (QSTP)—managed by ANGLE Technology Group—has already attracted companies such as Rolls Royce, GE, Microsoft, Exxon Mobil, Shell, and Total that are expected to invest an additional \$100 million in research and commercialization in the Park alone (Osama 2006).

### 3.3. GCC Performance Assessment

In order to understand how successful GCC countries are, it's imperative to compare them to other world economies. Table 5 provides the Global Competitiveness Index for each of the GCC States, and a detailed analysis of those indexes is provided for Qatar, Saudi Arabia and UAE.

Country/Economy	Global Competitiveness Index ( 2010–2011 rankings and 2009–2010 comparisons)				SUBINDEXES 2010-2011					
	GCI 2010–2011		GCI 2010–2011 rank among 2009 countries	GCI 2009–2010 rank *	Basic requirements		Efficiency enhancers		Innovation and sophistication	
	Rank	Score			Rank	Score	Rank	Score	Rank	Score
Singapore (Used for comparison)	3	5.48	3	3	3	6.05	1	5.49	10	5.07
Qatar	17	5.1	17	22	13	5.73	26	4.68	23	4.48
Saudi Arabia	21	4.95	21	28	28	5.32	27	4.67	26	4.41
United Arab Emirates	25	4.89	25	23	8	5.82	21	4.82	27	4.37
Malaysia (Used for comparison)	26	4.88	26	24	33	5.19	24	4.72	25	4.45
Oman	34	4.61	34	41	24	5.41	48	4.3	47	3.87
Kuwait	35	4.59	35	39	36	5.16	68	4.03	60	3.57
Bahrain	37	4.54	37	38	21	5.48	33	4.54	55	3.67

Extracted from: The Global Competitiveness Report 2010–2011 - World Economic Forum

**Table 5** - Data extracted by author from The Global Competitiveness Report 2010/2011, World Economic Forum

Qatar, ranked 17<sup>th</sup> (See Table 5) enters the top 20 this year and reaffirms its position as the most competitive country in the MENA region. With a projected growth rate of 18.5 percent for 2010, the country is the fastest-growing economy in the world, as well as one of the wealthiest. Its strong competitiveness rests on solid foundations made up of a high-quality institutional framework, ranked 10th overall, a stable macroeconomic environment (8th), and an efficient goods market (12th). Low levels of corruption and undue influence on government decisions, high government efficiency, and excellent security are the cornerstones of the country's solid institutional framework. Compared with many other economies, the country was relatively unharmed by the global economic crisis, with its growth rate slowing to 9 percent in 2009, down from 16.4 in 2008. This high growth, combined with prudent government support for the financial sector, contributed to maintaining macroeconomic and financial stability. In international comparison, the country's macroeconomic environment emerged stronger from the

crisis, moving from 13th to 8th place. Going forward, reducing the country's vulnerability to commodity price fluctuations will require more diversification into other sectors of the economy and improving some of the areas of competitiveness. Despite efforts to strengthen its financial sector, its trustworthiness and confidence is assessed as low by the business community (62nd), with soundness of banks ranked 46th and legal rights of borrowers and lenders underprotected (103rd).

Saudi Arabia moves up by seven places to take the second-highest place in the region at 21st. The country has witnessed a number of improvements to its competitiveness in recent years, which resulted in a strong solid institutional framework, efficient markets, and sophisticated businesses. Improvements to the institutional framework (up by 11 places to 21st), in particular a better assessment of the security situation by business (19th) and a stronger corporate governance framework (26th), have contributed to this year's better positioning. Additionally, the government enacted a massive stimulus package, improving infrastructure in the country. As much as the recent improvements are commendable, the country faces important challenges going forward. Health and education do not meet the standards of countries at similar income levels. While some progress is visible in health outcomes as well as in the assessment of the quality of education, improvements are taking place from a low level. As a result, the country continues to occupy low ranks in the health and primary education (74th) and higher education and training (51st) pillars. Both these areas, in addition to a more efficient labor market (66th), are of high importance to Saudi Arabia given the growing numbers of its young people who will enter the labor market over the next years. Last but not least, some room for improvement remains with respect to the use of latest technologies (42<sup>nd</sup>).

Following a difficult year, the United Arab Emirates loses two places in this year's Global Competitive Index (GCI) to take the 25th position. The country's overall competitiveness reflects recent investments in infrastructure, where it ranks an excellent 3rd; high penetration rates of new technologies (14th); and highly efficient goods markets (6th). Macroeconomic stability and some positive aspects of the country's institutions, such as high public trust of politicians and efficient government, round up the list of competitive advantages. Over the past year, there has been deterioration in the assessment of institutions overall, and in particular of private institutions, where accountability standards and the efficacy of corporate boards are evaluated less positively than before. This lower assessment is likely related to the difficulties that Dubai World, a state-owned company, faced in paying back debt toward the end of 2009. The difficulties of Dubai World raised doubts about the sustainability of the development model of Dubai, which has since been reoriented toward the more traditional role of commercial and logistics hub and away from property development. Going forward, a continuation of competitiveness enhancing structural reforms will be necessary to keep the economy growing, most notably in the areas of health and education (Schwab 2010).

#### **4. Sustainability of the analyzed economic clusters:**

The application of industrial clusters in GCC member states faces a set of obstacles relating to the lack of awareness or knowledge of their importance, lack of trained human resources and marketing abilities, lack of appropriate financing mechanism, besides infrastructure bottlenecks, information gaps, lack of coordination and linkages between different stakeholders as well as the lack of institutional framework for such type of projects (Golden 2008).

Two key themes consistently emerged as being crucial to the future of the GCC countries:

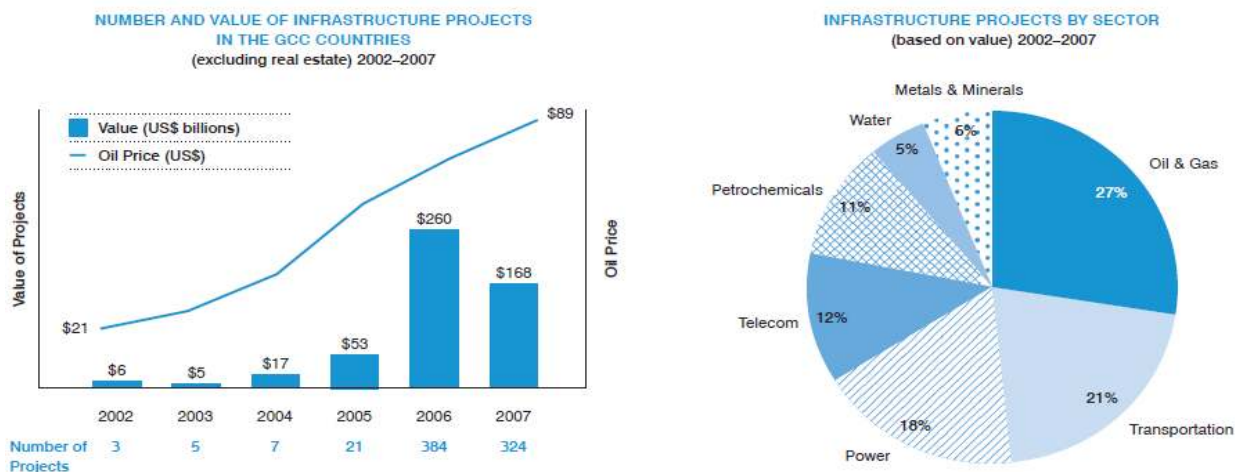
- A- Education and innovation: In attempting to diversify away from oil, the GCC countries face a major problem in that their existing skill base for workers is low by world standards and relatively little research, development and innovation are occurring in the region. This creates an impediment to development and exacerbates other problems associated with importing both foreign workers and technologies. As a result, the way in which education policies are handled by GCC governments will be a significant determinant of the region's ability to develop as innovation-based economies that do not wholly rely on natural resources.
- B- Leadership and governance: The GCC countries are ruled by traditionally-organized family groups, with varying underlying executive, legislative and judicial models. Leadership and governance will therefore be instrumental in determining the path that the GCC countries will take over the next 20 years. Although much is being undertaken today in terms of reform to improve the efficiency and openness of these systems, the strategies chosen and the rates of change vary between GCC countries. In managing both internal stability and reforms, leadership plays a critical role at all levels of GCC government as well as in the private sector (World economic forum on GCC countries until 2025).

In addition to the major two internal factors indicated above, there are other factors, some external, which will have a direct effect of the growth and sustainability of economic clusters in the Gulf. Following is a list of few of those factors:

- Regional stability: Being part of a politically unstable region, regional tensions may spill over and affect the GCC countries internal security, resulting in a focus on short-term solutions at the expense of tough reforms.
- Oil prices: Oil revenues play a very important role in funding and supporting the economic diversification in the Gulf States. The funding source must be available until the developed sectors are self-sufficient and can survive independently without a constant infusion of funds
- Inadequate infrastructure: Infrastructure development is key for future success, and it is dependent on oil revenues or the ability of governments to secure proper financing

Diagram 6 provides an overview of infrastructure projects in the GCC states between 2002 and 2007. Table 6, Table 7 and Table 8 provide the ranking of the GCC states on multiple factors that are crucial to the development and success of businesses in the Gulf.

Infrastructure Projects Awarded in the GCC, 2002–2008<sup>1</sup>



<sup>1</sup>Data for infrastructure projects as of April 2008  
 Source: Middle East Business Intelligence (MEED); Energy Information Administration, June 2008; Booz & Company Ideation Center analysis

**Diagram 6** - Source: Ideation Center Insight. Impact of the Global Downturn on Infrastructure Developments In the GCC Countries. Booz&Company, 2009

### Human Development Selected Countries

Country	GDP per capita (PPP US\$), 2007	Rank, 2007				
		GDP per capita	Human Development Index (HDI)	Life Expectancy Index	Education index	Gender Development Index (GDI)
Qatar	\$ 74,882	3	33	53	72	35
United Arab Emirates	\$ 54,626	4	35	40	108	38
Norway	\$ 53,433	5	1	14	7	2
Singapore	\$ 49,704	7	23	16	54	..
Kuwait	\$ 47,812	8	31	39	92	34
United States	\$ 45,592	9	13	31	20	19
Ireland	\$ 44,613	10	5	21	9	10
Hong Kong, China (SAR)	\$ 42,306	11	24	2	88	22
Sweden	\$ 36,712	16	7	10	17	5
United Kingdom	\$ 35,130	20	21	26	30	17
Germany	\$ 34,401	24	22	20	32	20
France	\$ 33,674	25	8	9	13	6
Japan	\$ 33,632	26	10	1	34	14
Spain	\$ 31,560	27	15	11	14	9
Italy	\$ 30,353	29	18	8	22	15
Bahrain	\$ 29,723	30	39	50	64	33
Greece	\$ 28,517	31	25	31	11	21
New Zealand	\$ 27,336	32	20	17	1	18
Slovenia	\$ 26,753	33	29	38	19	24
South Korea	\$ 24,801	35	26	29	8	25
Czech Republic	\$ 24,144	37	36	45	40	31
Saudi Arabia	\$ 22,935	40	59	82	111	60
Oman	\$ 22,816	41	56	53	120	56
Portugal	\$ 22,765	42	34	34	45	28
Estonia	\$ 20,361	43	40	77	24	36
Slovakia	\$ 20,076	45	42	59	46	40
Hungary	\$ 18,755	46	43	73	28	37
Croatia	\$ 16,027	52	45	48	51	43
Poland	\$ 15,987	53	41	51	33	39
Russia	\$ 14,690	55	71	133	43	59
Turkey	\$ 12,955	63	79	95	111	70

Source: World Bank, Human Development Index 2009

**Table 6** - Source: Porter, Michael E. UAE Competitiveness for the Third Millennium: The Role of Government. HBS -Institute for Strategy and Competitiveness, 2010.

## Political Institutions Governance Indicators

Country	GDP per capita (PPP US\$)	2008 Index of Governance Quality, Rank					
		GDP per capita	Rule of Law	Political Stability	Government Effectiveness	Control of Corruption	Voice and Accountability
Qatar	\$ 74,882	3	48	36	56	32	156
<b>United Arab Emirates</b>	<b>\$ 54,626</b>	<b>4</b>	<b>59</b>	<b>58</b>	<b>47</b>	<b>38</b>	<b>166</b>
Norway	\$ 53,433	5	1	8	6	12	1
Singapore	\$ 49,704	7	14	9	1	2	136
Kuwait	\$ 47,812	8	62	82	86	62	141
United States	\$ 45,592	9	18	67	16	18	30
Ireland	\$ 44,613	10	13	25	18	17	11
Hong Kong	\$ 42,306	11	20	30	11	13	83
Sweden	\$ 36,712	16	5	26	4	8	2
United Kingdom	\$ 35,130	20	17	73	13	16	17
Germany	\$ 34,401	24	15	31	15	15	16
France	\$ 33,674	25	22	69	22	19	21
Japan	\$ 33,632	26	23	44	24	31	51
Spain	\$ 31,560	27	32	121	43	33	29
Italy	\$ 30,353	29	80	84	72	79	50
Bahrain	\$ 29,723	30	65	134	69	65	159
Greece	\$ 28,517	31	57	91	63	82	56
New Zealand	\$ 27,336	32	8	23	12	5	6
Slovenia	\$ 26,753	33	38	33	37	43	39
South Korea	\$ 24,801	35	55	85	30	64	73
Czech Republic	\$ 24,144	37	49	45	38	70	38
Saudi Arabia	\$ 22,935	40	85	146	93	81	198
Oman	\$ 22,816	41	54	43	70	55	174
Portugal	\$ 22,785	42	35	34	39	36	26
Estonia	\$ 20,361	43	33	70	34	44	36
Slovakia	\$ 20,076	45	70	46	49	66	53
Hungary	\$ 18,755	46	51	68	58	58	46
Croatia	\$ 16,027	52	95	71	65	80	84
Poland	\$ 15,987	53	74	56	68	68	58
Russia	\$ 14,690	55	169	160	117	176	164
Turkey	\$ 12,955	63	94	165	80	83	122

Note: Sorted left to right by decreasing average value across all indicators. The 'zero' horizontal line corresponds to the median country's average value across all indicators.  
Source: World Bank (2009)

13

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**Table 7 - Source: Porter, Michael E. UAE Competitiveness for the Third Millennium: The Role of Government. HBS -Institute for Strategy and Competitiveness, 2010.**

## Doing Business Selected Countries

Economy	Ease of Doing Business	Starting a Business	Dealing with Licenses	Employing Workers	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Closing a Business
Saudi Arabia	13	13	33	73	1	61	16	7	23	140	60
Bahrain	20	63	14	13	22	87	57	13	32	117	26
<b>United Arab Emirates</b>	<b>33</b>	<b>44</b>	<b>27</b>	<b>50</b>	<b>7</b>	<b>71</b>	<b>119</b>	<b>4</b>	<b>5</b>	<b>134</b>	<b>143</b>
Qatar	39	68	28	68	55	135	93	2	41	95	33
Kuwait	61	137	81	24	89	87	27	11	109	113	69
Oman	65	62	130	21	20	127	93	8	123	106	66
Tunisia	69	47	107	108	59	87	73	118	40	77	34
Yemen, Rep.	99	53	50	74	50	150	132	148	120	35	89
Jordan	100	125	92	51	106	127	119	26	71	124	96
Egypt	106	24	156	120	87	71	73	140	29	148	132
Lebanon	108	108	125	66	111	87	93	34	95	121	124
Morocco	128	76	99	176	123	87	165	125	72	108	67
Algeria	136	148	110	122	160	135	73	168	122	123	51
Iran	137	48	141	137	153	113	165	117	134	53	109
West Bank and Gaza	139	176	157	135	73	167	41	28	92	111	183
Syria	143	133	132	91	82	181	119	105	118	176	87
Iraq	153	175	94	59	53	167	119	53	180	139	183
Djibouti	163	177	102	151	140	177	178	65	34	161	135
Middle East & North Africa	91.6	90.1	94.6	85.7	80.9	111.6	92.6	66.1	76.4	114.7	90.9

Rank out of 178 countries.  
Source: World Bank Doing Business (2009).

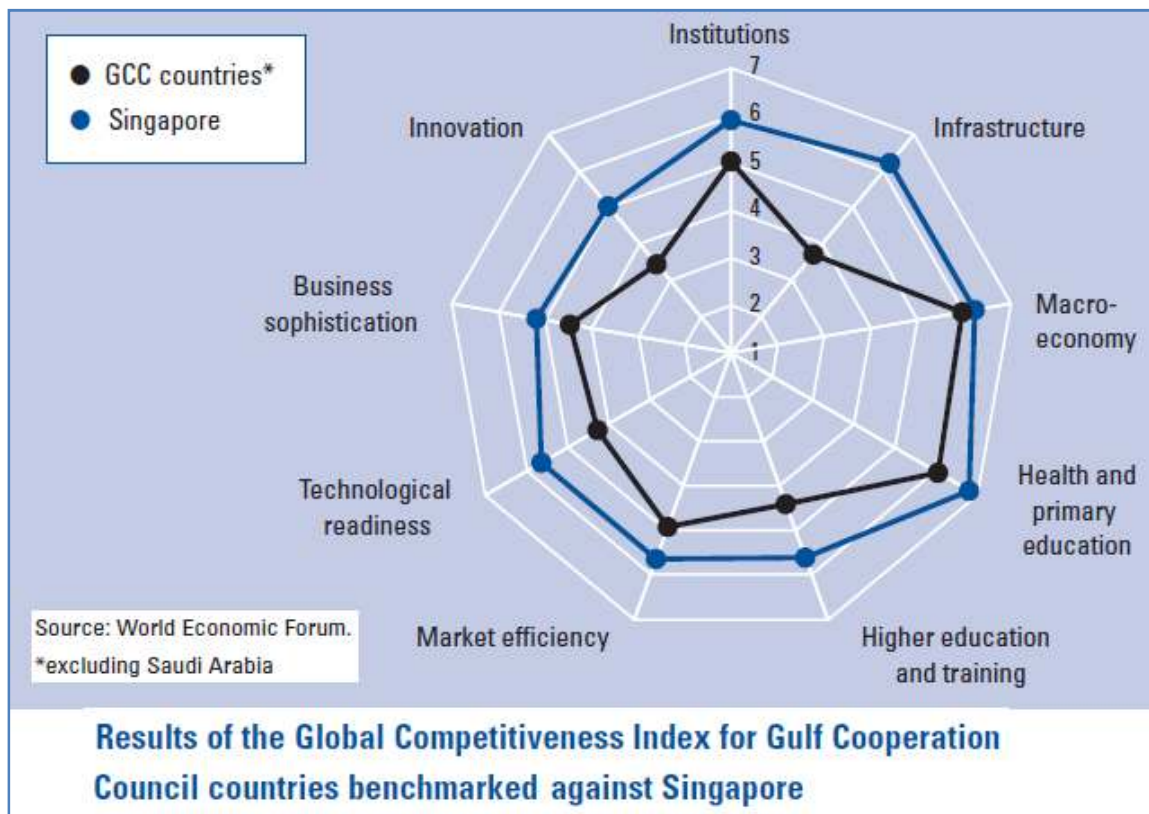
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**Table 8 - Source: Porter, Michael E. UAE Competitiveness for the Third Millennium: The Role of Government. HBS -Institute for Strategy and Competitiveness, 2010.**

## 5. Comparison of Gulf Economies and other developing countries:

Using the Global Competitiveness Index data from 2007, a comparison was performed between five of GCC countries (Bahrain, Kuwait, Oman, Qatar, and the United Arab Emirates) and Singapore. The comparison assessed nine criteria that affect competitiveness: institutions, infrastructure, macroeconomy, health and primary education, higher education and training, market efficiency, technological readiness, business sophistication, and innovation. The average results in these categories were benchmarked against Singapore (DAVIS and HAYASHI 2007).

Singapore has been selected as a benchmark because it operates at the same stage of development as most of the GCC countries. Diagram 7 shows that despite all the effort and spending within the GCC states, Singapore is still more competitive on all selected aspects. The growth of the economic clusters in the GCC states and their sustainability is highly dependent on the Gulf States ability to improve competitiveness and to offer a unique value proposition that would automatically drive success and prosperity.



**Diagram 7** - Source: DAVIS, NICHOLAS, and CHIEMI HAYASHI. The Gulf Cooperation Council (GCC) Countries and the World: Scenarios to 2025: Implications for Competitiveness. World Economic Forum, 2007

## **6. Lessons drawn from the Gulf experience:**

Within less than one generation, the GCC countries have transformed their economies and competitiveness. The Gulf experience with economic clusters is a great example of the role governments can play in shaping and transforming industries. However, it's clear that the progress has not met the desired expectations set over a decade ago. While the Gulf States have introduced multiple industry clusters, they have not yet been able to offer a unique value proposition that would make them a global lead in any single sector.

The case of economic clusters' growth in the GCC region offers many lessons for the region and for others that can learn from the Gulf experience. Steps taken by the Gulf governments have clearly improved diversification and economic performance, as proved by the data presented throughout the paper; however, the effort has not captured the optimal output of such investments, and requires further attention to insure sustainability and growth.

The Gulf case proves that economic clusters are a great tool to improve nations' competitiveness, but that they also have to co-exist with other factors to ensure success. The natural emergence of an industry cluster occurred because available resources provided an unmatched advantage over areas without similar resources. When a government decides to create a cluster, it must be capable of nourishing an environment that allows such cluster to be highly competitive and productive. Competitiveness depends on the productivity with which a nation uses its human, capital, and natural resources. Relentless innovation in technology, products, and organizational methods is necessary to drive growth and sustainability. When deciding to draft industrial policies, due diligence must be performed to ensure that the goal is realizable, and considering that the tasks on hands are great, it is important to set priorities and sequence steps to reflect the realities of the target economies.

With the global recovery taking place, the Gulf States will be able to heavily re-invest in the clustering and diversification efforts. In order to ensure success and long term sustainability, it's important for the GCC states to define the clusters that can survive in the region, after performing an honest assessment of the unique factors that the region enjoy (natural resources, location, culture, wealth, demography, etc..) and those that it can successfully nourish and support (technical expertise, government policies, etc..). The Gulf States should prioritize investment in specific clusters based on expected success factors and they should collaborate and coordinate to avoid unhealthy regional competition driven by redundancy and eventually leading to failure. A special attention should be given to reforms in the areas defined as the biggest hurdles going forward, from improving education to easing business practices and policies. The last decade provided the region with a lot to learn from, it is time to evaluate past performance and to use acquired knowledge to define future plans.



## 7. Appendices

### 7.1. GCC Countries & map

GCC Countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

Map of the countries comprising GCC (in green)



**Diagram 8** - Source: [http://www.gcccountries-business.com/\\_mgxroot/page\\_10769.html](http://www.gcccountries-business.com/_mgxroot/page_10769.html)

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