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THESIS

**ECONOMIC DIVERSIFICATION THROUGH A
KNOWLEDGE-BASED ECONOMY IN THE UNITED ARAB
EMIRATES: A STUDY OF PROGRESS TOWARD VISION 2021**

by

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March 2019

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ECONOMY IN THE UNITED ARAB EMIRATES: A STUDY OF PROGRESS
TOWARD VISION 2021**

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ABSTRACT

With the 2010 release of Vision 2021, the government's comprehensive societal and economic vision for the future, the United Arab Emirates (UAE) laid out a path to diversify its economy. This plan moves the UAE away from resource dependence to a knowledge-based economy less reliant on natural resources and physical labor. This thesis explores the economic history of the United Arab Emirates, its previous diversification efforts, and its proposed way forward with Vision 2021. The author evaluates progress made up to this point using economic data and key performance indicators outlined in Vision 2021. This evaluation shows that although the UAE has made significant investment into diversification efforts, there has not yet been the expected return on investment. In order to fulfill the plan's aspirations, the UAE will need to make significant strides over the next two years.

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LIST OF ACRONYMS AND ABBREVIATIONS

GCC	Gulf Cooperation Council
GCI	Global Competitiveness Index
GCR	Global Competitiveness Report
GDP	gross domestic product
GII	Global Innovation Index
EOI	export-oriented industrialization
IMF	International Monetary Fund
ISI	import substitution industrialization
KPI	key performance indicator
OECD	Organization for Economic Co-operation and Development
UAE	United Arab Emirates
UN	United Nations
WEF	World Economic Forum
WHO	World Health Organization

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I. INTRODUCTION

A. MAJOR RESEARCH QUESTION

The United Arab Emirates (UAE) has worked toward diversifying their economy since the founding of the country in 1971. In 2010, the UAE released Vision 2021, a document that laid out a strategy of economic and social improvement leading up to the nation's Golden Jubilee 50th anniversary. What are the economic diversification strategies and goals of the UAE laid out in Vision 2021? Have implemented policies been effective and what progress has been made toward the goals of Vision 2021? This thesis will study the UAE's diversification plans and goals and compare it with published data to assess the progress of diversification efforts in the UAE.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

Since its establishment in the 1970s, the UAE has relied on its oil exports to provide the overwhelming majority of government revenue. UAE government officials recognized early on that diversification of the economy would be necessary in order to maintain the levels of government expenditures and public services that oil money provided.¹ This has become increasingly important as oil prices have stabilized at low levels and other regional countries look to diversify as well. While modernization and diversification efforts have been ongoing for decades, diversification efforts have increased in the last twenty years.

When the UAE was founded in 1971, its economy relied primarily on its newly developed oil fields to fuel its economic growth. The sudden increase in oil prices in 1973 allowed for significant investment in infrastructure and government services.² In 1975, oil revenues accounted for over 67% of national gross domestic product (GDP), with no other sector accounting for even double digits.³ This reliance on oil revenues was successful, as

¹ Radwa Radwan Said, "UAE Economic Diversification Record," TRENDS Research and Advisory, June 14, 2016, <http://trendsinstitution.org/uae-economic-diversification-record/>.

² Kristian Coates Ulrichsen, "Post-Rentier Economic Challenges," *India Quarterly: A Journal of International Affairs* 73, no. 2 (June 2017): 210–26, <https://doi.org/10.1177/0974928417700800>.

³ Mohamed Shihab, "Economic Development in the UAE," in *United Arab Emirates: A New Perspective*, ed. Ibrahim Abed and Peter Hellyer, 2001, 249–59.

UAE annual GDP rose from under \$20 billion in 1972 to over \$90 billion in the early 2000s.⁴ UAE leaders recognized early the need to diversify the economy and initially worked to expand the manufacturing, trade, and financial services sectors. In the late 1970s, projects focused on manufacturing plants and import/export infrastructure, while by the late 1980s and early 1990s the UAE began to open financial centers and security exchanges.⁵

As the UAE has worked to diversify its economy, it has relied on importing workers from abroad to staff positions in both the skilled and unskilled sectors. Following the early oil boom international corporations imported workers, managers, and professionals to cope with the growing demands placed on oil exploration and infrastructure development.⁶ This has led to foreigners accounting for 91% of the UAE labor market.⁷ According to Jasim Al-Ali, Emirati's views on employment focus on avoiding manual labor and are gearing toward higher skilled and modern sectors when working in the private sector. This is another reason for the need to develop and diversify the economy, to provide jobs for the Emirati workforce and decrease dependence on foreign labor.

A decrease in oil prices in 2014 forced members of the Gulf Cooperation Council (GCC), including the UAE, to redouble their efforts to decrease dependence on oil exports as a source of revenue and look to other sources of economic growth. The emergence of shale oil extraction technology and a decrease in demand depressed the price of oil in 2014 and economists forecast that oil prices will likely remain stagnant for the foreseeable future.⁸ Different members of the GCC have developed their own plans on how to adjust to this new reality, but all are looking to diversify their economy in order to prepare for the

⁴ Michael C Ewers, "Oil, Human Capital and Diversification: The Challenge of Transition in the UAE and the Arab Gulf States," *Geographical Journal* 182, no. 3 (September 2016): 236–50, <https://doi.org/10.1111/geoj.12138>.

⁵ Said, "UAE Economic Diversification Record."

⁶ Jasim Al-Ali, "Emiratization: Drawing UAE Nationals into Their Surging Economy," *International Journal of Sociology and Social Policy* 28, no. 9/10 (September 5, 2008): 365–79, <https://doi.org/10.1108/01443330810900202>. 3.

⁷ Jasim Al-Ali, 4.

⁸ Keith Breene, "Why Are Oil Prices so Low?" World Economic Forum, May 3, 2016, <https://www.weforum.org/agenda/2016/05/why-are-oil-prices-so-low/>.

future and continue their economic growth and improvements in quality of life. For example, Qatar has Vision 2030, which seeks to maintain growth and move away from reliance on oil revenues.⁹ Other examples include Saudi Arabia's long-term strategy 2025, Vision 2020 in Oman, and Vision 2030 in Bahrain.¹⁰ Economic competition will continue between the various GCC countries and the country that can best diversify will be in the position for success in the future.

C. LITERATURE REVIEW

The modernization and growth of economies from traditional to modern is one of the main areas of studies in the area of economics. One of the most well regarded theories of economic growth that has been applied to numerous economies throughout history is the five stages of growth outlined by W.W. Rostow. Rostow's stages of traditional society, transitional society, take-off, drive to technological maturity, and high mass consumption, trace an economy's development as it increases resources and gradually expands.¹¹ Traditionally this model shows a gradually industrializing economy with diverse sectors emerging behind the breakthroughs of a few "take-off" sectors. Rostow's work has been criticized as being historical and selectively applied, but provides a general template for economic development.¹²

Economies based primarily on natural resources do not traditionally follow a normal pattern of development. In fact, countries with rich natural wealth often progress slower than countries that do not possess such reserves due to resource dependence and could actually experience a net economic loss.¹³ This phenomenon is commonly known as

⁹ General Secretariat for Development Planning, "Qatari National Vision 2030," Ministry of Development Planning and Statistics, July 2008, https://www.mdps.gov.qa/en/qnv/Documents/QNV2030_English_v2.pdf.

¹⁰ Tim Callen et al., *Economic Diversification in the GCC: Past, Present, and Future* (Washington, DC: International Monetary Fund, 2014).

¹¹ W. W. Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, 3rd ed. (Cambridge, England: Cambridge University Press, 1990).

¹² Yoichi Itagaki, "Criticism of Rostow's Stage Approach: The Concepts of Stage, System and Type," *Developing Economies* 1, no. 1 (1963): 1–17, <https://doi.org/10.1111/j.1746-1049.1963.tb01138.x>.

¹³ Jeffrey D. Sachs and Andrew M. Warner, "The Curse of Natural Resources," *European Economic Review* 45, no. 4–6 (May 2001): 827–38.

the resource curse, also sometimes referred to as “Dutch Disease.”¹⁴ Economic researchers have conducted various empirical studies of economic data and found a strong support for the idea.¹⁵ Some posit that the reason for the poor economic growth of resource rich countries is the inability to apply what is learned from resource production to other industries.¹⁶ Others write that the volatility of commodity prices, especially oil, leave countries unable to plan for the future and price dips can have a significant negative effect on the entire economy.¹⁷ Some attribute lack of growth in resource rich countries is due to an allocation state model of governance that relies of wealth distribution and migrant labor that does not develop human capital or alternative productive sectors.¹⁸

In order to avoid the resource curse, countries are encouraged to diversify their economies beyond the primary resource sector. It has been shown that diverse economies are more stable and perform better over the long term.¹⁹ This long-term strategic goal of stability is supplemented by other goals of diversification. Some write that wider

¹⁴ Ajit V. Karnik and Cedwyn Fernandes, “Natural Resource Dependence: A Macroeconometric Model for the United Arab Emirates,” *Applied Economics* 41, no. 9 (April 10, 2009): 1157–74, <https://doi.org/10.1080/00036840601019109>.

¹⁵ R. M. Auty, *Sustaining Development in Mineral Economies: The Resource Curse Thesis* (London: Routledge, 1993); Alan H. Gelb, *Oil Windfalls: Blessing or Curse?*, A World Bank Research Publication (New York: Oxford University Press, 1988); Rebeca Jiménez-Rodríguez and Marcelo Sánchez, “Oil Price Shocks and Real GDP Growth: Empirical Evidence for Some OECD Countries,” *Applied Economics* 37, no. 2 (2005): 201–28, <https://doi.org/10.1080/0003684042000281561>.

¹⁶ Ricardo Hausman, Bailey Klinger, and Jose Lopez-Caliz, “Export Diversification in Algeria,” in *Trade Competitiveness of the Middle East and North Africa*, ed. Jose Lopez-Caliz, Peter Walkenhorst, and Ndiamé Diop (Washington, DC: World Bank, 2010), 63–102.

¹⁷ Alan Gelb, “Economic Diversification in Resource-Rich Countries,” in *Beyond the Curse: Policies to Harness the Power of Natural Resources*, ed. Rabah Arezki, Thorvaldur Gylfason, and Amadou N. R. Sy (Washington, DC.: International Monetary Fund, 2011), 55–80; James D Hamilton, “Understanding Crude Oil Prices,” *The Energy Journal* 30, no. 2 (2009): 179–206.

¹⁸ Heiko Hesse, “Export Diversification and Economic Growth,” *Breaking into New Markets*, 2009, 55–80; Martin Hvidt, *Economic Diversification in GCC Countries: Past Record and Future Trends* (London School of Economics and Political Science, 2013).

¹⁹ Hesse, “Export Diversification and Economic Growth”; Daniel Lederman and William F. Maloney, eds., *Natural Resources, Neither Curse nor Destiny*, Latin America Development Forum (Palo Alto, CA : Washington, DC: Stanford Economics and Finance, an imprint of Stanford University Press ; World Bank, 2007); General Secretariat for Development Planning, *Qatar National Development Strategy 2011–2016* (Doha: GSDP, 2011); H. El Beblawi, “Gulf Industrialization in Perspective,” in *Industrialization in the Gulf: A Socioeconomic Revolution* (London: Center for Contemporary Arab Studies, Georgetown University/Routledge, 2011), 185–97.

employment in labor rich countries is a reason for additional sectors of the economy.²⁰ Others say that decreased volatility is a primary reason to diversify.²¹ It is also argued that decreased dependence on external asset funds and foreign exchange is another strategic reason to diversify.²²

No matter the reasons for diversification, the process of adding new sectors to an economy requires both human and institutional capital. It has been shown that countries that invest heavily in human capital through education and training are able to avoid the negative effects of the resource curse.²³ Studies have also indicated that the presence of strong institutions that are able to manage resources will be more effective in diversification efforts.²⁴ Economic diversification efforts that focus on building human capital and strengthening institutional capital are much more likely to succeed. Any effort at assessing diversification efforts can use these factors as an indicator for probable success.

Although much has been written on the resource curse, the need for diversification and the elements that are needed for diversification to succeed, the literature on specific efforts of diversification in the UAE is not as large. Older volumes focus on the Gulf and

²⁰ Hausman, Klinger, and Lopez-Caliz, "Export Diversification in Algeria."

²¹ Clement M. Henry and Robert Springborg, *Globalization and the Politics of Development in the Middle East*, 2nd ed, The Contemporary Middle East (New York: Cambridge University Press, 2010); Paul Rivlin, *Arab Economies in the Twenty-First Century* (Cambridge ; New York: Cambridge University Press, 2009).

²² Gelb, "Economic Diversification in Resource-Rich Countries."

²³ Claudio Bravo-Ortega and Jose Gregorio, "The Relative Richness of the Poor?: Natural Resources, Human Capital and Economic Growth," Policy Research Working Paper Series (The World Bank, 2005); Lederman and Maloney, *Natural Resources, Neither Curse nor Destiny*; Daniele Schilirò, "Diversification and Development of the United Arab Emirates' Economy," *Journal of Applied Economic Sciences* vol. 8, (August 2013): 228–239.

²⁴ Halvor Mehlum, Karl Moene, and Ragnar Torvik, "Institutions and the Resource Curse," *The Economic Journal* 116, no. 508 (January 2006): 1–20; Paul. Collier, *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done about It* (Oxford: Oxford University Press, 2007).

Arab economies as a whole with a large focus on the utilization of oil revenue.²⁵ The UAE is a relatively new country and its push toward a diverse, knowledge-based economy moving away from oil is even newer. Many studies of Gulf State's diversification efforts also focus on the area as whole with minimal focus on individual economies.²⁶ Authors focusing on the UAE specifically have conducted useful empirical studies as well as broader discussion of diversification efforts.²⁷ Many of these volumes however cover pre-2000 timeframes and focus on the initial diversification efforts after the formation of the country.²⁸ This thesis will add to these works with a focus on current UAE diversification strategy and its effectiveness.

D. POTENTIAL EXPLANATIONS AND HYPOTHESES

Economic diversification efforts have been ongoing in the UAE for a number of years. At first glance, it would seem that they have been successful in bringing in new economic sectors including finance and tourism to decrease the government's dependence on oil. Oil revenues have been utilized to create infrastructure to enable these new sectors as well as become a shipping and transport hub. However, it has been demonstrated that the keys to successful diversification efforts lie in the development of human capital and the strengthening of institutions.

²⁵ Robert E. Looney, *Industrial Development and Diversification of the Arabian Gulf Economies*, Contemporary Studies in Economic and Financial Analysis, v. 70 (Greenwich, CN: JAI Press, 1994); Giacomo Luciani, ed., *The Arab State* (Berkeley: University of California Press, 1990); Mohamed A. Ramady, *The GCC Economies Stepping Up To Future Challenges* (New York, NY: Springer New York, 2012), <https://doi.org/10.1007/978-1-4614-1611-1>; Melani Claire Cammett, Ishac Diwan, and Alan Richards, *A Political Economy of the Middle East*, 4th ed. (Boulder, CO: Westview Press, 2015).

²⁶ Hvidt, *Economic Diversification in GCC Countries: Past Record and Future Trends*; Callen et al., *Economic Diversification in the GCC*; Samer Bohsali, Per-Ola Karlsson, and Rawia Abdel Samad, "Economic Diversification in the Gulf," *Forbes*, accessed October 27, 2017, <https://www.forbes.com/sites/strategyand/2016/09/27/economic-diversification-in-the-gulf/>.

²⁷ Karnik and Fernandes, "Natural Resource Dependence"; Schilirò, "Diversification and Development of the United Arab Emirates' Economy"; Said, "UAE Economic Diversification Record."

²⁸ Malcolm C. Peck, *The United Arab Emirates: A Venture in Unity*, Profiles (Boulder, Colo. : London: Westview Press ; Croom Helm, 1986); K. G. Fenelon, *The United Arab Emirates: An Economic and Social Survey* (London: Longman, 1973); Al-Shamsi Fatima, "Industrial Strategies and Changes in the UAE during the 1980s," in *Change and Development in the Gulf*, ed. Abbas Abdekarim (London: Macmillan, 1999).

Effort has been made to increase education and create a knowledge-based indigenous workforce. The effectiveness of those efforts is yet to be seen and foreign workers take a large number of jobs in the newly created sectors. Studying the outcomes of educational reforms and seeing if of high-skilled jobs are being filled by native workers will help to confirm whether the goal of a knowledge-based economy is being met.

The building of institutions seems to be an area where the UAE has been successful to this point. The government has worked to create an environment that is business friendly and has a level of trustworthiness that attracts outside capital. Further study of the change in foreign capital and transactions will provide a basis to judge how well institutional capital is being built.

E. RESEARCH DESIGN

This thesis will examine the plans and policies outlined by the government of the UAE to understand their diversification strategy and goals. UAE Vision 2021 was launched in 2010 with the goal of making the UAE one of the most advanced nations in the world in preparation for the 50th anniversary of the country's founding.²⁹ Each section of the plan outlines a broad strategy to achieve their objectives as well as key performance indicators (KPI) as a way to track progress. This thesis will study the economic section to understand diversification efforts as well as the education section to gauge the improvement of human capital. Individual Emirates have also created their own plans and performance benchmarks.³⁰ This thesis will supplement the UAE Vision 2021 with those plans to give a more complete picture of the overall diversification strategy.

In order to gauge the success of the UAE's strategy, indicators such as overall GDP growth, non-oil GDP growth, ranking in the Global Innovation Index (GII), and ranking in the Global Competitiveness Index (GCI) will be used. Vision 2021 does not lay out specific

²⁹ "UAE Vision 2021," UAE 2021 Executive Council, accessed October 26, 2017, <https://www.vision2021.ae/en/our-vision>.

³⁰ "Abu Dhabi Economic Vision 2030," Abu Dhabi Executive Council, The Official Portal of the UAE Government, October 27, 2017, https://www.abudhabi.ae/cs/groups/public/documents/publication/~edisp/adeqp_nd_131654_en.pdf; Dubai Planning Council, "Dubai Strategic Plan 2015," Arab Rule of Law, accessed November 17, 2017, <http://www.arabruleoflaw.org/compendium/Files/UAE/94.pdf>.

goals for their key performance indicators, but by looking at goals laid out in plans of the individual Emirates, an approximate goal can be established. This paper will utilize GDP growth and non-oil GDP growth rate goals for Abu Dhabi's vision 2030 and Dubai's Strategic Plan 2015 as benchmarks. Although goals for individual Emirates may differ slightly from the UAE as a whole, they are a useful approximation. In order to assess success in the GII and GCI rankings, we will look for relative improvement as well as comparative rankings with other GCC countries that are competing with the UAE in diversifying away from oil-based economies. Data will be taken from the International Monetary Fund (IMF), World Bank, and the publishers of the GII and GCI rankings. Other data sets or benchmarks will be utilized if discovered to be useful in the course of research.

F. THESIS OVERVIEW

The thesis will be structured with an introduction and background covering the development of the UAE, its economic history and reliance on the oil sector, and its unique form of governance. The third chapter will discuss the UAE's current diversification efforts. It will cover Vision 2021, the specific Emirates' plans, as well as the programs and policies that the government has instituted in attempt to accomplish the vision. This chapter will focus on economic investment, policy changes, as well as efforts to increase human capital. The fourth chapter will be a discussion of the benchmarks utilized to measure success and a discussion of where the UAE currently stands in relation to those benchmarks. The thesis will conclude with an assessment of diversification efforts to this point and a discussion of where there has been success or failure.

II. HISTORICAL BACKGROUND AND EARLY DIVERSIFICATION EFFORTS

A. TRADITIONAL ECONOMY

The traditional economy of the UAE for most of the 18th and 19th century included animal husbandry, hunting, fishing, sailing, cultivation of dates, and pearling. The scarce resources of the desert dictated the types of economic activities that were available. The mountain areas and occasional oases provided for the cultivation of dates and other small agriculture while the presence of camels and gazelles allowed for limited hunting and herding.³¹ However, pearl diving became the region's primary activity as the value of pearls on the international market made the trade more lucrative. As the pearling industry grew smaller industries began to emerge to support the increased activity and population that came along with the growth.³² These cottage industries included boat building, rope making, and weaving and marked the beginning of expansion of economic opportunity.

The pearling industry took on a capitalist form as demand grew and moved away from the traditional small crew structure that was merely self-sustaining. Early pearling crews jointly owned boats and distributed profits among the crew depending on the work each member performed.³³ As the industry grew, the size and cost of boats also increased, soon making it difficult for a crew to afford their own vessel. Wealthier individuals began to own the boats, taking a share of the profits and hiring crewmen as salaried labor instead of treating them as partial owners. This new division of capital created distinct classes of investors and salaried crewmembers.³⁴ By the 1930s, the competition from cultured pearls and the worldwide economic downturn led to a sharp decline in the profitability of the

³¹ Christopher Davidson, "The United Arab Emirates: A Study in Survival" (PhD, University of St Andrews, 2003), 16.

³² Frauke Heard-Bey, *From Trucial States to United Arab Emirates: A Society in Transition*, 3rd ed. (London: Longman, 1999), 11.

³³ Davidson, "The United Arab Emirates: A Study in Survival," 14.

³⁴ Heard-Bey, *From Trucial States to United Arab Emirates*, 208–9.

pearling trade and its associated small industries.³⁵ As pearling declined, many of the wealthy pearl boat owners and others involved in the trade were reluctant to diversify their holdings. Pearling was seen as not just an occupation, but as an honorable and traditional way of life.³⁶ This failure to diversify led to the downfall of many in the pearling class and served as an early lesson and warning for those who would later come into their fortunes in the resource based oil economy.

In addition to pearling, the gulf provided opportunity for limited regional and international trade as another source of income. Trade was primarily in simple commodities, but there was also significant trade in slaves and gold. Slaves were brought from East Africa and sold to the interior of the Arabian Peninsula. Later, as British influence increased, slaving was eliminated but gold continued to be an important trading commodity until the late twentieth century.³⁷ Over time, trading vessels grew in size and required deeper ports. The geography of the coastal towns, reefs, and islands made it impossible to accommodate the newer ships and overseas trade subsequently declined.³⁸

B. TRADITIONAL SOCIAL AND POLITICAL STRUCTURE

Before significant British influence and the explosion of the pearling industry, the primary social and political structure in the lower gulf was that of a nomadic lifestyle and tribal society. Animal husbandry was the traditional occupation of the nomadic tribes, with sheep and camel herding being prevalent. Camel herding was the more lucrative of the two, and over time, the camel herders took a position of prominence over the shepherders.³⁹ These tribes maintained their power by social exclusion and inter-marriage, creating a society dominated by a few powerful families that competed for influence.

³⁵ Donald Hawley, *The Trucial States* (London: Allen & Unwin, 1970), 170.

³⁶ Davidson, "The United Arab Emirates: A Study in Survival," 14.

³⁷ Hawley, *The Trucial States*, 205.

³⁸ Heard-Bey, *From Trucial States to United Arab Emirates*, 10–11.

³⁹ Heard-Bey, 20–21.

The tribes gradually moved toward the coasts and would seasonally fish or dive for pearls before returning to tend to their herds in the winter.⁴⁰ As the pearling trade exploded, tribesmen could afford to invest in the industry and build houses in the coastal towns.⁴¹ The wealthier camel herders were the tribes with excess capital to invest into the new pearling boom. This disparity of investment essentially transferred the old desert economic and social stratification to the pearling trade, leaving the same powerful tribes with political control.

Foreigners were also increasingly attracted to the area due to the lucrative nature of pearling. The majority of foreigners were temporary crewmen; however, some began to take up semi-permanent residence as merchants, returning to their homes only periodically.⁴² Many local Arabs avoided retail and shop keeping and instead limited themselves to the honorable activities of pearling or dhow trading.⁴³ This left a void filled by foreigners and serves as an early parallel to the current labor market in the UAE, where foreign workers constitute a majority in many sectors where Arabs avoid working.⁴⁴

The political structure of the tribes and nomads was dependent on authority over people, as opposed to controlling vast swaths of land.⁴⁵ Rulers could hold influence over groups that were geographically distant through personal authority. One way of maintaining this authority was through subsidizing the population through gifts or paying for protection.⁴⁶ Tribes located close to one another could find themselves loyal to different rulers, making it difficult to consolidate power and form a unified political entity.⁴⁷ This phenomenon can still be seen by looking at modern maps of the area surrounding the UAE, with pockets of territory, such as the Musandam Peninsula, falling well within the

⁴⁰ Davidson, "The United Arab Emirates: A Study in Survival," 19.

⁴¹ Heard-Bey, *From Trucial States to United Arab Emirates*, 200.

⁴² Heard-Bey, 215.

⁴³ John G. Lorimer, *Gazetteer of the Persian Gulf, Oman and Central Arabia* (Gerrards Cross: Archive Ed, 1986), 411.

⁴⁴ Davidson, "The United Arab Emirates: A Study in Survival," 22.

⁴⁵ Heard-Bey, *From Trucial States to United Arab Emirates*, 56–57.

⁴⁶ Lorimer, *Gazetteer of the Persian Gulf, Oman and Central Arabia*, 2284–87.

⁴⁷ Heard-Bey, *From Trucial States to United Arab Emirates*, 58.

boundaries of neighboring states.⁴⁸ These pockets represent the loyalty and authority cultivated over time by tribal rulers.

The rulers, or sheikhs, of these groups utilized a form of institutions to administer their authority amongst the people they ruled. Two of the primary institutions were the majlis and the diwan. The majlis was a system where the people could air their grievances directly to the ruler for resolution in an early form of democratic expression.⁴⁹ The diwan consisted of a council of the rulers' advisors, primarily dominated by the sheikh's family.⁵⁰ Each of these advisors represented a different segment of society and provided advice to the sheikh and a form of legitimacy in the areas of society that the members represented. In addition, the sheikh appointed judges to run courts and tribunals and regional representatives were assigned to carry out the sheikh's wishes and administer in farther flung territories.

C. EXTERNAL INFLUENCE

Increasing influence from the outside world led to changes in the social, economic, and political structures of the area that comprises the UAE. The earliest outsiders from Europe were the Portuguese, who were interested in the lower gulf to secure the trade routes between Europe and the East Indies. The Portuguese thought that they would need to control the Straits of Hormuz in order to secure the maritime route around the Cape of Good Hope all the way to the East Indies.⁵¹ Due to the lack of natural harbors and geographic factors, the Portuguese did not establish significant settlements in the area. This lack of permanent presence meant that the earliest outsiders had little effect on the social and political structures of the area; however, it did attract the attention of other Portuguese rivals and brought them to the area.⁵² One lasting impact left by the Portuguese came from their practice of executing entire communities in order to secure harbors. The memory of

⁴⁸ Davidson, "The United Arab Emirates: A Study in Survival," 24.

⁴⁹ Davidson, 24.

⁵⁰ Peck, *The United Arab Emirates*, 18.

⁵¹ Peck, 27.

⁵² Heard-Bey, *From Trucial States to United Arab Emirates*, 114.

these atrocities had the effect of creating an enduring sense of distrust of dealing with outsiders.⁵³

The largest and longest lasting external influence on the region was the British. The British had sporadic contact with the region due to its maritime trading routes through the region; however, the early influence was minimal. The first major conflict with the British resulted from a trading dispute between the Qasimi tribes and the British East India Company. The Qasimi, based in the coastal area of Ras Al Khaimah, had established a new trading post on the island of Qishm and the East India Company sent an armed force to extract what they felt should be their share of customs.⁵⁴ This marked the beginning of a protracted conflict between the two, with the Qasimi attacking in self-proclaimed defense of their territory and interests and the East India Company branding the Qasimi as pirates and thieves.

Following the eventual British defeat of the Qasimi pirates, the British government operating out of Bombay sent Captain Perronet Thompson to negotiate individual treaties with the ruling sheikhs of the region in order to establish a safer and more reliable route of trade in the region.⁵⁵ These series of treaties, or truces, gave rise to the term “Trucial States” and led to relative maritime peace in the region. The signing and renewing of treaties continued, culminating in an 1853 Perpetual Treaty of Peace. This treaty encompassed most of the ruling families of the time and provided them with enough economic benefit to ensure cooperation on both sides.⁵⁶

The agreements between the British and ruling sheikhs began to impact the traditional political structure of the region. The British became more involved in local administration and dispute resolution and formally recognized only the signatories of the Perpetual Treaty. This had the effect of delegitimizing other sheikhs that would have been able to compete for power and influence in the traditional tribal structure. Britain also

⁵³ Heard-Bey, 118.

⁵⁴ Heard-Bey, *From Trucial States to United Arab Emirates*, 282.

⁵⁵ Hawley, *The Trucial States*, 107.

⁵⁶ Peck, *The United Arab Emirates*.

began to screen rulers to ensure that they would be amenable to British desires and would likely adhere to the status quo.⁵⁷ In this way, the fluid rise and fall of local leaders that had existed in the traditional system was frozen in time at the signing of the treaty, and created permanent boundaries of influence that had changed based on the ebb and flow of people and influence.⁵⁸ It also further tipped the balance of power toward coastal tribes that dealt directly with the British, allowing them to control ever-increasing portions of the interior land.⁵⁹

The British continued to increase their influence over the economic and political environment of the area, attempting to exclude any other foreign power and increase the dependency of local rulers. By the early twentieth century, the British had instituted agreements that prevented local rulers from granting any type of pearling concessions without first consulting with the British Political Resident.⁶⁰ Additional reliance on Britain began when some rulers began receiving income by providing landing rights for military and eventually civilian aircraft on their route from Britain to India.⁶¹ This dependence on air rights payments was another example of ruling sheikhs earning based on external rents, which would only increase with the discovery of oil in the region.

The British also exerted significant influence over the economic development that would prove most transformative for the region; oil. In 1922, the region's rulers agreed to consider only oil concessions approved by the British.⁶² In 1935, the British Political Resident bound the sheikhs to deal only with Petroleum Concessions Ltd, a subsidiary of the London-based Iraqi Petroleum Company. Petroleum Concessions thus became the only

⁵⁷ Davidson, "The United Arab Emirates: A Study in Survival."

⁵⁸ Peck, *The United Arab Emirates*, 62.

⁵⁹ Heard-Bey, *From Trucial States to United Arab Emirates*, 290–91.

⁶⁰ Hawley, *The Trucial States*, 140.

⁶¹ Muḥammad Mursī. Abd Allāh, *The United Arab Emirates : A Modern History* (London: Croom Helm, 1978), 56.

⁶² Davidson, "The United Arab Emirates: A Study in Survival," 47.

company operating oil concessions in the lower gulf.⁶³ This agreement further entrenched the regions' leaders' dependence on economic rent.

Following World War II, Britain looked to improve regional security while reducing the cost of British presence in the region. In order to achieve this increased security, Britain looked to engender greater regional unity and worked to establish and develop the region's administrative and government institutions. As a result of this effort, the Trucial States Council was formed to bring prominent rulers together as an advisory body.⁶⁴ The Council continued to evolve and expand its areas of influence, with continued input and oversight by British political agents and representatives from British oil companies.⁶⁵ As oil revenue increased, the council became financially independent and implemented many development projects in transportation, education, and healthcare. Eventually Britain announced that it would be withdrawing its forces from the area in 1971, leaving the Trucial States to operate on their own.

The forming of a federation of the Trucial States was seen as a natural progression for the Trucial States Council, since it had already been performing many of the administrative and development functions alongside the British. The British worked to allow the Council to make decisions on their own and gain as much experience as possible before the withdrawal. The negotiations between the leaders of the council to form the federation were heated at times, eventually leading Qatar and Bahrain to drop out of the federation altogether. Despite the rocky period of formation, the United Arab Emirates came into being on December 2, 1971, with the ruler of Abu Dhabi, Sheikh Zayed, as the first president. The emirates of Dubai, Abu Dhabi, Sharjah, Ajman, Umm Al Quwain and Fujairah were the initial members, with Ras Al Khaimah joining in 1972.⁶⁶

⁶³ Heard-Bey, *From Trucial States to United Arab Emirates*, 295.

⁶⁴ Davidson, "The United Arab Emirates: A Study in Survival," 54.

⁶⁵ Heard-Bey, *From Trucial States to United Arab Emirates*, 175.

⁶⁶ Hawley, *The Trucial States*, 152.

D. EARLY DIVERSIFICATION EFFORTS

By the time the UAE was established, its rulers already recognized the need to diversify the economy in order to build a sustainable federation. In an early 1980s study of Arab economies, Samir Amin identified several problems already appearing in economies dependent on oil. These problems were the external orientation of most Arab countries, weak industrialization, technological dependency, and increased dependence on the west, which was masked by the illusion of wealth created by oil.⁶⁷ In order to combat these issues, economic planners in the UAE began to attempt to reverse dependency related features of the economy in addition to seeking growth. The main problems seen by the planners were similar to those observed by Amin in the wider Arab world; reliance on a single export, reliance on foreign technology, an imbalanced international work force, and its relationship with oil purchasing economies.⁶⁸ The fear was that dependency on oil rents would result in a consumerist society and an indigenous labor market reliant on foreign workers and government subsidies.

1. Savings and Investment

In order to combat these problems, the UAE undertook a series of steps to reduce their reliance on oil income. The easiest solution was to save and invest the vast amounts of excess capital that was flowing into the federation and rely on the interest payments and appreciation of assets. These investments were made in various overseas markets and by the end of 1999; the reported foreign reserves had reached over \$100 billion.⁶⁹ However, overseas investment of oil profits was recognized as only a partial solution to the problem of dependence and other more fundamental measures were required to diversify the economy.

⁶⁷ Samir Amin, *The Arab Economy Today* (London: Zed Books, 1984), 56.

⁶⁸ Davidson, "The United Arab Emirates: A Study in Survival," 128.

⁶⁹ Davidson, 131.

2. Industrialization

Industrialization has long been seen as a key component to diversification in any economy. In fact, in some literature on diversification the terms are interchangeable, as it is seen that industrialization will naturally result in a more diverse economy.⁷⁰ By 1979, the UAE had passed an industrial law that outlined the objectives of the diversification effort. These objectives were to establish a productive manufacturing base, prioritize the manufacturing sector to create production linkages, utilize industrialization as a way to provide foreign exchange, and to use the comparative advantage of low cost energy to make UAE industries competitive.⁷¹

Strategies for industrialization at the time included export oriented industrialization (EOI) and import substitution industrialization (ISI). EOI was seen as a way to industrialize rapidly and would take advantage of the UAE's energy advantage. This rapid growth, however, would come at the cost of a continued reliance on foreign technology. ISI is utilized in many developing countries to use imported technology as a temporary measure until local technology can be developed to replace it. In his early 1970s study of Arab economies, Fenelon identified a third industrial sector consisting of small, traditional handicrafts manufactured solely for the local market.⁷²

EOI efforts in the UAE is best exemplified by the harnessing of natural gas that had previously been largely flared off as a side product of oil drilling. Major gas plants were built on Das Island, Al-Ruways, and Dubai and produced significant volume for the export market.⁷³ Development in the gas sector has continued, with regional partnerships and the establishment of major transportation hubs for gas export. These developments, which are part of the oil industry, serve to diversify, however they do not solve the problem of dependence on oil as a resource.⁷⁴ Other heavy industries, such as aluminum, steel, and

⁷⁰ Looney, *Industrial Development and Diversification of the Arabian Gulf Economies*.

⁷¹ Davidson, "The United Arab Emirates: A Study in Survival," 132.

⁷² Fenelon, *The United Arab Emirates*, 70.

⁷³ Davidson, "The United Arab Emirates: A Study in Survival," 133.

⁷⁴ Hvidt, *Economic Diversification in GCC Countries: Past Record and Future Trends*, 6.

plastics have taken advantage of cheap energy to expand and see success. For example, by 2000 aluminum exports accounted for nearly 60% of Dubai's non-oil exports.⁷⁵

The ISI industrialization effort has not been as successful as the EOI projects without the advantage of capitalizing on available cheap energy. However, by the late 1970s a number of small and medium scale manufactures were seeing success and producing goods for the domestic market.⁷⁶ Particular success was seen in the production of construction materials such as cement and pipes. These materials are bulky and costly to import, giving advantage to local producers. ISI projects continued into the 1980s and 1990s with projects in bottling and packaging seeing successful local substitution of foreign technology.⁷⁷

3. Agriculture

The development of the agricultural sector was another key part of the UAE's early diversification efforts. The UAE traditionally had a small agricultural industry in dates and fishing, but due to the climate and arid land, the UAE was largely dependent on importation of foreign food. In order to reduce this dependency, early plans called for the need to increase agricultural production through both increased yield on existing agricultural land as well as working to increase the available cultivatable land. The agricultural sector was also seen as important to the growth of the local economy because agriculture employed a higher percentage of UAE nationals than any other sector.⁷⁸

The UAE has made significant investment through generous subsidies to increase the efficiency and production of agricultural lands. These subsidies are utilized to purchase modern farming equipment, build irrigation and water wells, and research new crops that can flourish in the harsh climate.⁷⁹ In order to increase the amount of arable land the government has invested significant sums in afforestation. The goals of the massive

⁷⁵ Davidson, "The United Arab Emirates: A Study in Survival," 134.

⁷⁶ Fatima, "Industrial Strategies and Changes in the UAE during the 1980s," 88.

⁷⁷ Davidson, "The United Arab Emirates: A Study in Survival," 134.

⁷⁸ Davidson, 138.

⁷⁹ Fenelon, *The United Arab Emirates*, 46–50.

planting of trees is the reduction of erosion, protection of crops, and the possibility of increased rainfall in desert regions.⁸⁰ The efforts to increase productivity of existing lands has seen large increases in agricultural output and has served to reduce dependency on imported food. Efforts to increase arable land have been less successful, especially considering the massive expenditures that have been necessary to implement the programs.

4. Commerce and Tourism

Another area seen as important for building up non-oil related activity and reducing reliance on foreign labor and technology is the commerce and tourism sectors. Tourism also has the added advantage of promoting traditional local industries and increase the social and cultural activities in the region.⁸¹ Although not reliant on foreign labor expertise or technology, the tourism sector does maintain the UAE's dependence of outside economies to bring money into the emirates. These efforts began to accelerate in the early 80s and, as will be shown in later chapters, have become key components to the UAE's modern diversification strategy as well.

Dubai was the earliest and has been the most successful of the emirates in expanding its tourism and commercial sector. Beginning in 1989 when Dubai was the first to establish a Department of Tourism and Commerce Marketing, Dubai has led the way and served as an example for the other emirates in successful commercial and tourist growth. Between 1985 and 2000, the number of hotels in Dubai increased from 40 to 300, with many of the hotels being high-end luxury hotels that bring in higher revenue and maintain higher occupancy rates.⁸² The increased number of tourists has also served to increase revenue from historical sites, museums, resorts, and cultural festivals.

In the area of commerce, the UAE saw significant increases in the value and volume of international trade. Non-oil foreign trade through the ports of Dubai increased 15 fold from 1980 to 2001.⁸³ Modern diversification and investment plans have only increased this

⁸⁰ Peck, *The United Arab Emirates*, 107.

⁸¹ Davidson, "The United Arab Emirates: A Study in Survival," 141.

⁸² Davidson, 146.

⁸³ Davidson, 143.

flow of goods through the UAE. In addition to sheer volume of trade, the level of re-exports of goods has increased as well. This re-export activity is an indicator of significantly increased commercial activity. Dubai has also become a center of global finance and other commerce.

5. Technology Transfer

Another aspect of early diversification efforts were programs to reduce reliance on foreign companies and to increase local production through the use of technology transfers and foreign reinvestment in UAE domestic industries. In the early 1980s, the Chamber of Commerce proposed forcing foreign companies to reinvest large shares of revenues back into the federation in addition to taxation and other restrictions.⁸⁴ These initial ideas were not implemented; however, a similar arrangement later required foreign firms operating in the UAE to invest with local partners in a program managed by an entity called the UAE Offsets Group. This program focused heavily on defense firms who would not be otherwise utilizing the local workforce and would not provide technology that could be implemented in other areas of the domestic economy. The group required that non-arms related ventures should yield 60% of the value of arms procurement contracts over seven years. This arrangement resulted in a number of joint ventures such as healthcare centers, shipbuilding companies, agricultural exports, and a seafood company undertaken by firms such as McDonnell Douglas and Lockheed Martin.⁸⁵

6. Educational Development

Although not directly related to economic diversification efforts, the UAE has worked to improve in the education and health care sectors in order to provide a more capable and healthy workforce able to sustain economic growth and reduce reliance on foreign expertise and labor. These areas also go hand in hand with economic success in fulfilling the vision of creating a happy society and improving overall quality of life.

⁸⁴ Peck, *The United Arab Emirates*, 111.

⁸⁵ Amin Badr El-Din, "The Offsets Program in the United Arab Emirates," *Middle East Policy* 5, no. 1 (1997): 120–23, <https://doi.org/10.1111/j.1475-4967.1997.tb00254.x>.

Beginning with early development plans, the UAE has worked to increase the number of schools, teachers, and students. These early efforts saw rapid results, with the literacy rate among youth rising to 90% by 2000 and significant increases in enrollment and graduation rates of primary and secondary schools.⁸⁶ Advances in university education were not as rapid; however, enrollment rates did increase from nearly zero at the establishment of the UAE to around 12% in 1999.⁸⁷ The first university was established in Al-'Ayn 1978, however enrollment and establishment of other universities has continued steadily since. These efforts have continued, and the results of these efforts will be looked at in forthcoming chapters.

7. Emiratisation

Another area not directly related to diversification, but critical to early and future economic development plans is the program of Emiratisation of the workforce. Emiratisation is the effort to replace the expertise and production of foreign workers with local labor. This serves to both provide jobs for the local workforce and reduces dependency on outside forces. Efforts at requiring foreign firms to hire local workers can be seen as far back as the first oil exploration days in the early twentieth century. Local leaders instituted local labor requirements in oil concessions, including the need to train locals in the technical aspects of the business.⁸⁸

The strategy of Emiratisation accelerated in the late 1970s as industries began to flourish in the area as a result of the sharp increases in oil revenues. Educational development focused on subjects related to professional skills and business practices to fill the demand of rapidly growing sectors of the economy.⁸⁹ In addition to basic education, the government instituted training programs and subsidies to encourage full-time employment and expand work opportunities.

⁸⁶ Davidson, "The United Arab Emirates: A Study in Survival," 152.

⁸⁷ Davidson, 153.

⁸⁸ Heard-Bey, *From Trucial States to United Arab Emirates*, 251; Hawley, *The Trucial States*, 212.

⁸⁹ Davidson, "The United Arab Emirates: A Study in Survival," 165.

More direct efforts at increasing the percentage of the Emirati workforce were also undertaken early on. The government passed labor laws that granted greater rights to local workers, including special pension funds and greater protection of workers' rights. The UAE also instituted a sponsorship system, where all foreign business require a local partner in order to conduct business. In addition to requiring local partnerships, employment quotas have been instituted in some sectors and fines and penalties imposed for the hiring of foreign labor.⁹⁰ Early efforts at Emiratization were widely unsuccessful, requiring the continued efforts of an Emiratization strategy.

The economy of the UAE had changed drastically from its traditional pearling and camel herding roots to become a wealthy, oil-based, developed economy. Leaders of the UAE recognized early that continued reliance on oil revenues would not be sustainable and instituted programs to diversify and industrialize the economy while reducing dependence on foreign labor. While these early efforts have seen some success, continued diversification and development of the local labor pool is still required. This is why they UAE has continued to develop plans to further their development and diversification programs. These modern efforts will be looked at in the next chapter.

⁹⁰ Davidson, 166–67.

III. UAE VISION 2021

Nations have increasingly adopted sweeping “Visions” as a blueprint for economic and social development. Increasing competition among similar resource-based economies has led to the desire to develop and structure their economies and broader society to be in position to survive into the future. There is a shared belief in the inevitable inability for natural resources to finance the social and economic programs that prop-up the ruling governments and provide for popular support going forward.

The idea of national 5 and ten-year plans are not new, but the implementation of these “Visions” in GCC countries began with Oman’s Vision 2020 launched in 1995. The Oman Vision set a broad set of economic and social objectives for the next 25 years.⁹¹ Other GCC nations have followed suit, with Vision 2030 in Bahrain, Kuwait Vision 2035, Saudi Arabia’s long-term strategy 2025, and Qatar’s Vision 2030.⁹²

The UAE’s version of a broad vision is encapsulated in its “Vision 2021,” which was launched by the vice president and prime minister of the UAE, Sheikh Mohammed bin Rashid al Maktoum, in 2010. The goal of the Vision is to make the UAE one of the best countries in the world by the 50th anniversary of the UAE’s founding, the Golden Jubilee.⁹³ The Vision seeks to build upon the work done by the early leaders of the UAE, including past national strategies and the National Work Program, and continue to develop the overall Emirati society in order to face the challenges of a modern world.⁹⁴ In order to accomplish these goals, the vision lays out four pillars that broadly describe where the government wants UAE society to be in 2021.

Nested under the four broad pillars of the vision are the six national priorities that are representative of more specific sectors and make up the National Agenda portion of

⁹¹ Oman Supreme Council for Planning, “Oman Vision 2020,” accessed January 26, 2019, <https://www.scp.gov.om/en/Page.aspx?I=14>.

⁹² Callen et al., *Economic Diversification in the GCC*.

⁹³ “UAE Vision 2021.”

⁹⁴ “UAE Vision 2021.”.

Vision 2021. Each of these priorities contains a number of indicators for measuring progress toward achieving the overall goals espoused in the vision. While the indicators are useful, they only provide a snapshot of current status. There are no goals listed or demonstration of past performance. This allows the UAE to communicate their aspirations without the political pressure of having specific benchmarks to achieve or the fallout that can come if they fall short. The overall idea is improvement in each of the indicators and identifying ways to quantify the nebulous ideas laid out in the vision. A brief description of these pillars and priorities follows, with increased emphasis on the areas related to economic diversification efforts.

A. UNITED IN RESPONSIBILITY

The first pillar of Vision 2021 is titled “United in Responsibility” and is designed to establish a shared idea of how each Emirati contributes to the overall success of society. It focuses on responsibility at the individual, family, community, and cultural level. Individuals are to find success through a strong work ethic and duty toward the nation. Families are seen as the nucleus of society, with an emphasis on maintaining the status of elders and reversing the climbing divorce rate. Stronger communities will come from increased inclusion, trust, and solidarity among Emirati citizens along with a continued emphasis on the Islamic and Arabic cultural heritage of the nation.⁹⁵

The national priority under the United in Responsibility pillar is to maintain a cohesive society and preserve the national identity of UAE citizens as Arabs with a rich traditional heritage. The priority emphasizes the importance of family and the overall goal is to have citizens proud of their nation and achieve an overall state of happiness.⁹⁶ The benchmarks utilized to measure progress in this section are social and family cohesion indexes created by the Ministry of Community Development, a national identity index

⁹⁵ UAE 2021 Executive Council, “United in Responsibility,” accessed January 26, 2019, <https://www.vision2021.ae/en/uae-vision/list/united-in-responsibility>.

⁹⁶ UAE 2021 Executive Council, “Cohesive Society and Preserved Identity,” accessed January 26, 2019, <https://www.vision2021.ae/en/national-agenda-2021/list/identity-circle>.

created by the UAE University, the number of Olympic and Paralympic medals won, and United Nations (UN) happiness and human development indexes.⁹⁷

The UAE launched “Cohesive Family 2021” in 2016 as a specific program to help improve progress in the social and family cohesiveness indicators.⁹⁸ A key initiative of the program is an online “Family Pledge” form that asks Emiratis to promise to support family members and traditions. The goal of the program is to reach 100% in the Family Cohesion index by 2021. The index is a composite number that covers relations between parents, parents’ relationship to children, and other factors. In 2013, the index reading was 86.4%; but by 2017, it had dropped to 75%.⁹⁹

B. UNITED IN DESTINY

“United in Destiny” is the second pillar of the Vision and focuses on maintaining the legacy of the nation’s founders and the continued upward trajectory of the nation’s development. Maintaining the federation of the various Emirates as well as balance among regions is noted as a critical goal. Another component of maintaining the rapid national development is maintaining the safety and security of the citizens through good governance, a strong judiciary, and social safety nets for the most vulnerable in society.¹⁰⁰

Nested under the United in Destiny pillar is the national priority of creating a safe public and fair judiciary. The goal of this priority is to make the UAE the safest place in the world. In order to accomplish this goal, the UAE seeks to provide reliable police services, increase road safety, emergency preparedness, and overall security.¹⁰¹ The importance of a developed and fair legal system is also emphasized, guaranteeing the rights

⁹⁷ “Cohesive Society and Preserved Identity.”

⁹⁸ Emirates News Agency, “Cohesive Families Make UAE Stronger,” May 9, 2016, <http://wam.ae/en/details/1395295239473>.

⁹⁹ UAE 2021 Executive Council, “Cohesive Society and Preserved Identity”; “Emirati Family,” The Official Portal of the UAE Government, accessed January 26, 2019, <https://www.government.ae/en/information-and-services/social-affairs/emirati-family>.

¹⁰⁰ UAE 2021 Executive Council, “United in Destiny,” accessed January 26, 2019, <https://www.vision2021.ae/en/uae-vision/list/united-in-destiny>.

¹⁰¹ UAE 2021 Executive Council, “Safe Public and Fair Judiciary,” accessed January 26, 2019, <https://www.vision2021.ae/en/national-agenda-2021/list/judiciary-circle>.

of both individuals and corporations. In order to measure these priorities the agenda uses World Economic Forum (WEF) rankings of reliability of security and police services, World Bank rankings of judicial system efficiency, and Interior Ministry data on average response times, road fatalities, and a measurement of “sense of security.”¹⁰²

The achievement of these goals is another key undergirding to the goal of a creating diversified economy and attracting foreign investment. The stability and fairness of a nation’s judicial system are key aspects of corporations’ decisions about where to operate and maintain capital. These legal and safety considerations are also factored into many of the economic indices utilized in Vision 2021 to measure economic progress.

C. UNITED IN KNOWLEDGE

The third pillar, “United in Knowledge” focuses on the development of a knowledge based economy to ensure continued prosperity and move away from oil-based resource dependency. Part of this pillar relies on developing and utilizing national human capital through increased educational opportunities and training programs suited for the modern economy. Utilizing national human capital by increasing the number of Emiratis participating in the economy, especially the private sector, is a key component of this pillar. This is achieved through various programs of Emiratization of the workforce. Where UAE nationals cannot provide needed expertise, the UAE seeks to attract top talent from around the globe. The overall goal of the shift to knowledge-based sectors is to create a sustainable and diversified economy. This includes increasing entrepreneurship, innovation, and foreign investment.¹⁰³

The national priority under the United in Knowledge pillar is the development of a “Competitive Knowledge Economy.” The goal is to become the economic, tourist, and commercial capital of the region.¹⁰⁴ In order to accomplish this the UAE seeks to shift

¹⁰² “Safe Public and Fair Judiciary.”

¹⁰³ UAE 2021 Executive Council, “United in Knowledge,” accessed January 26, 2019, <https://www.vision2021.ae/en/uae-vision/list/united-in-knowledge>.

¹⁰⁴ UAE 2021 Executive Council, “Competitive Knowledge Economy,” accessed January 26, 2019, <https://www.vision2021.ae/en/national-agenda-2021/list/economy-circle>.

further away from a resource-based economy to a knowledge-based economy. Peter Drucker originally posited the idea behind a knowledge-based economy in 1966 when he predicted that intellectual capabilities would power future economic growth instead of physical labor or natural resources.¹⁰⁵ The World Bank identified four aspects of a knowledge-based economy, global incentives and institutions, innovation and technological adoption, first-rate education, and world-class telecommunications infrastructure.¹⁰⁶ These aspects are each found in the various priorities of Vision 2021 under different pillars.

The UAE national agenda puts entrepreneurship in a key position in working toward a knowledge-based economy. The plan calls for schools and universities to foster an entrepreneurial culture leading to increased innovation and research and development. In order to measure progress toward its goal of a diversified and knowledge-based economy Vision 2021 utilizes a number of indicators. Some are traditional economic indicators, such as non-oil GDP growth, foreign direct investment as a percentage of GDP, and income per capita. Indicators focused on the shift toward knowledge-based sectors and entrepreneurship are captured in the percentage of GDP used for research and development and the percent of GDP produced by small- and medium-size businesses. Other indicators focus on the progress of Emiratization of the workforce in the private sector and the overall economy. Finally, the plan utilizes rankings in the WEF's Global Competitiveness Report (GCR), INSEAD Business School's GII, and the World Bank's Ease of Doing Business index to measure comparative progress globally.¹⁰⁷

The UAE government has initiated specific actions to improve in these areas. Some of these initiatives are the creation of special economic zones to encourage foreign investment, employment incentives in the private sector for hiring Emirati nationals, and investment in research and development. Similar to other areas of the National Agenda,

¹⁰⁵ Martin Hvidt, *Transformation of the Arab Gulf Economies into Knowledge Economies: Motivational Issues Related to the Tertiary Education Sector* (Arab Center for Research and Policy Studies, 2015), 2.

¹⁰⁶ Hvidt, 5.

¹⁰⁷ UAE 2021 Executive Council, "Competitive Knowledge Economy."

there are not precise targets given for the indicators utilized in the Competitive Knowledge Economy section. The fourth chapter of this paper will undertake a further discussion of some of these indicators, as well as an analysis of performance up to this point.

D. UNITED IN PROSPERITY

The final pillar, “United in Prosperity,” covers other improvements toward the overall well-being of the Emirati citizen. Improvements in the healthcare sector include ensuring access to quality basic medical services and focusing on disease prevention through education and better public health and sanitation. Educational goals include smaller class sizes, increased enrollment in secondary and tertiary education, and more technical and vocational training. Other areas covered under prosperity include sustaining the environment, increased cultural and recreational activities, and better and more responsive governance. Nested under the United in Prosperity pillar are the national priorities of sustainable environment and infrastructure, world-class healthcare, and a first rate education system.¹⁰⁸

1. Sustainable Environment and Infrastructure

The sustainable environment and infrastructure priority seeks to ensure that future development preserves the environment and balances economic and social development. The environmental goals are to improve air quality, preserve water resources, increase the usage of clean energy, and incorporate environmentally sustainable growth. The indicators to measure the environmental portion of the plan are the water scarcity index, air quality index, percentage of treated waste, and the percentage of clean energy utilized.¹⁰⁹ While monitoring these indicators can provide insight into environmental progress, the numbers are provided without context and do not give any indication as to whether objectives are being achieved. This problem is seen in many of the indicators in other areas of the vision as well. For example, the percentage of clean energy utilized in 2017 was only 0.54%,

¹⁰⁸ UAE 2021 Executive Council, “United in Prosperity,” accessed January 26, 2019, <https://www.vision2021.ae/en/uae-vision/list/united-in-prosperity>.

¹⁰⁹ UAE 2021 Executive Council, “Sustainable Environment and Infrastructure,” accessed January 26, 2019, <https://www.vision2021.ae/en/national-agenda-2021/list/environment-circle>.

which is significantly lower than other modern economies.¹¹⁰ For comparison, the United States utilized 11% clean energy in 2017.¹¹¹ The air quality index is presented as 77%, however the air quality index is measured between 0–500, with readings over 100 being unhealthy groups.¹¹² There is no explanation as to what the 77% indicates or whether that is in line with where the UAE wants to be in terms of air quality.

The building of world-class infrastructure has been part of UAE diversification efforts since its founding in 1971. The government has made significant investments in port and airport infrastructure to make the UAE a trading hub and access point for the rest of the Middle East.¹¹³ The building of infrastructure is critical to the economic development and diversification plans outlined in the knowledge economy section of the vision. Having world-class ports, airports, roads, electric grid, and telecommunications is necessary to attract the foreign investment and commerce envisioned in the economic plans of the Emirates. More recent infrastructure building efforts have focused on telecommunications infrastructure to support increased modern computer-based industries. The indicators utilized to measure infrastructure development are the World Bank’s logistics performance index, the UN’s online services index, and infrastructure and telecommunications network rankings in the WEF’s *Global Competitiveness Report*.¹¹⁴ The WEF report captures port, airport, telecommunications, and overall infrastructure rankings.

The final portion of sustainable environment and infrastructure is the goal of providing suitable housing for all eligible UAE nationals in a reasonable timeframe. This is accomplished through the Sheikh Zayed Housing Program, which works through loans

110 “Sustainable Environment and Infrastructure.”

111 “U.S. Energy Consumption and Electricity Generation from Renewable Energy Sources,” U.S. Energy Information Administration, accessed January 26, 2019, <https://www.eia.gov/tools/faqs/faq.php?id=92&t=4>.

112 Environmental Protection Agency, “Air Quality Index (AQI) Basics,” accessed January 26, 2019, <https://airnow.gov/index.cfm?action=aqibasics.aqi>.

113 Hvidt, *Economic Diversification in GCC Countries: Past Record and Future Trends*.

114 UAE 2021 Executive Council, “Sustainable Environment and Infrastructure.”

and housing development projects to provide adequate housing.¹¹⁵ The indicator utilized to measure the success of the program is the time it takes for participants in the program to receive a house or a housing loan through the program. In 2017, the wait times were 3.32 years for a home and 2.76 years for a loan.¹¹⁶ The goal by 2021 is to reduce those times to two years.

2. World-Class Health Care

The priority of providing world class health care to its citizens encompasses the building and upgrading of hospitals as well as national programs aimed at increasing preventative medicine and reducing cancer, diabetes, and cardiovascular diseases. The plan uses World Health Organization (WHO) statistics such as number of doctors and nurses per 1,000 population and average life expectancy as indicators. In addition to WHO statistics, the plan utilizes internal statistics from the Ministry of Health and Prevention showing the percentage of smokers, childhood obesity, diabetes, and percentage of health facilities accredited by the government as benchmarks.¹¹⁷

Increasing the quality of healthcare in the country is another area that can provide tangential benefits in economic diversification. The building of hospitals, training of doctors and nurses, and the establishment of health care service businesses is a key component of providing economic activity outside of the natural resources sector. It is also an economic sector that can employ Emirati nationals who graduate from the improved educational system.

3. First-Rate Education

The final priority under the United in Prosperity pillar is the building of a first rate education system. The improvement of education is another critical component to building

¹¹⁵ “The Sheikh Zayed Housing Programme,” Government of Ras Al-Khaimah accessed January 26, 2019, <https://www.rak.ae/wps/portal/rak/home/citizens/housing/landsandhousingfornationals/thesheikhzayedhousingprogramme>.

¹¹⁶ UAE 2021 Executive Council, “Sustainable Environment and Infrastructure.”

¹¹⁷ UAE 2021 Executive Council, “World-Class Healthcare,” accessed January 26, 2019, <https://www.vision2021.ae/en/national-agenda-2021/list/world-class-circle>.

a knowledge-based economy and preparing for an economic future less dependent on natural resources. The agenda calls for a complete transformation of the education system and teaching methods. It also seeks the introduction of Smart systems and electronic devices as the basis for new teaching methods. Increased enrollment in preschool, higher graduation rates and increased academic performance are overall goals of the effort.¹¹⁸ The indicators used to measure this portion of the vision are rankings on the international TIMMS math and science test, the PISA math and reading test, graduation rates, percentages of schools with high quality teachers, and preschool enrollment among other statistics provided by the Ministry of Education. While some of these numbers appear promising, such as a 97% graduation rate of upper secondary schools, others, such as the quality of teacher indicators, show room for significant improvement.¹¹⁹

The establishment of an improved education system will serve as the engine for future growth in the envisioned knowledge-based economy. Emiratis need to have the advanced skills in demand by employers in order to improve the Emiratization rate in the private sector. Having a skilled native workforce will also serve as an incentive for companies to relocate to, or remain in the UAE to conduct business. Each of the priorities work together toward establishing a stronger society and more diverse economy going forward.

E. OTHER STRATEGIC DOCUMENTS

In addition to the national vision, individual Emirates have created their own strategic documents that outline the vision for their portion of the UAE and focus on the areas of the Vision 2021 that are most applicable to them. For example, Abu Dhabi still maintains the majority of oil reserves in the country and has a different strategic outlook than Dubai, which needs to focus more on the financial, tourist, and services sectors. Many of these plans build on Vision 2021, but others are rooted in earlier Emirate specific efforts that set the precedent for the national Vision. Looking at these plans is useful in providing

¹¹⁸ UAE 2021 Executive Council, “First-Rate Education System,” accessed January 26, 2019, <https://www.vision2021.ae/en/national-agenda-2021/list/first-rate-circle>.

¹¹⁹ “First-Rate Education System.”

context for Vision 2021 and in gaining a better understanding of specific goals toward which the Emirates are working.

The first of these Emirate specific plans was Dubai's Strategic Plan 2015 launched in 2007 by Sheikh Mohammed bin Rashid Al Maktoum, the ruler of Dubai who also launched Vision 2021. The plan is very similar to the national vision that came after it, with focus areas of economic development, improved infrastructure and environment, safety, security and justice, government excellence and societal development.¹²⁰ Each of these priorities was broken down into subsections and cover education, economic and social programs, and better governance.

The overall goals of Dubai's 2015 plan reflect what was later incorporated into Vision 2021. In contrast to Vision 2021, the plan provided specific benchmarks of this plan that could be easily measured and compared to future performance. For example, the plan set a goal of sustaining a real GDP growth rate of 11% per year for the next ten years.¹²¹ This projection came on the heels of five years of significant double-digit growth and may have seemed attainable at the time. However, during the subsequent ten years there was significant global economic unrest and the growth rates ended up much lower, even reaching a negative 5.2% growth rate during the 2009 economic crisis.¹²²

The next Emirate to produce a strategic plan was Abu Dhabi with its Economic Vision 2030 launched in 2008. The Economic Vision is one of a series of strategic documents leading up to 2030 that also include urban planning and social programs. The Economic Vision itself focuses on building a sustainable economy and utilizing a balanced economic development approach going forward.¹²³ As the largest oil-producing Emirate, Abu Dhabi has relied more heavily on oil than the other Emirates and has utilized its oil wealth to fund programs throughout the country. In Economic Vision 2030, there is

120 Dubai Planning Council, "Dubai Strategic Plan 2015," 20.

121 "Dubai Strategic Plan 2015," 21.

122 International Monetary Fund, "Gross Domestic Product in Constant Prices for United Arab Emirates," FRED, Federal Reserve Bank of St. Louis, January 1, 2019, <https://fred.stlouisfed.org/series/ARENGDPRPCHPT>.

123 Abu Dhabi Executive Council, "Abu Dhabi Economic Vision 2030," 4.

significant emphasis on fiscal responsibility, labor efficiency, and diversification of economic sectors.

Similar to Dubai's 2015 plan, Economic Vision 2030 sets specific benchmarks that can be measured to see if the plan is succeeding. Economic growth had slowed by the time the plan was unveiled and planner scaled back GDP growth targets. Vision 2030 set annual growth targets of 7% through 2015 and 6% thereafter. Non-oil GDP growth targets were higher, with the idea being that the focus on diversification would lead to a shrinking share of GDP from oil. These targets were set at 9.5% until 2015 and 7.5% thereafter.¹²⁴ Planners set other specific targets in the areas of GDP per capita, productivity, and Emiratization of the workforce.

As 2015 approached, Dubai launched a new plan, Dubai Plan 2021, which closely aligns to Vision 2021. The six sections of the plan are the economy, government, people, society, experience, and place. Each section has aims that describe the vision going forward and key performance indicators (KPI) to gauge success. As oppose to Plan 2015 and similar to Vision 2021, there are not specific numbers set as goals associated with the KPIs so it is difficult to gauge whether they are making satisfactory progress. Perhaps they learned the lesson form Plan 2015 when they failed to meet lofty goals and could be pointed to as failure. The KPIs for the economy section focus on the trade, financial, and tourism sectors that make up Dubai's economy. Some of these KPIs are GDP growth rate, rankings of port and airport volume, rate of foreign direct investment, and tourist numbers.¹²⁵

The smaller Emirates also have plans based of Vision 2021 and tailored to their specific circumstances. Sharjah and Ras al Khaimah have both developed tourism plans that focus on increasing the volume of tourists through development of cultural sites.¹²⁶

124 "Abu Dhabi Economic Vision 2030," 113.

125 Government of Dubai Executive Council, "The Economy," Dubai Plan 2021, accessed October 26, 2017, <https://www.dubaipplan2021.ae/the-economy/>.

126 "Ras Al Khaimah Tourism Development Authority Unveils the Emirate's New Destination Strategy 2019–2021 - Ras Al Khaimah Corporate," accessed February 1, 2019, <https://en.raktda.com/news-and-media/press-releases/2018/12/18/ras-al-khaimah-tourism-development-authority-unveils-the-emirate-s-new-destination-strategy-2019-2021-a3907>; "Sharjah Tourism Vision 2021," Sharjah Department of Tourism, accessed February 1, 2019, <https://government.ae/en/about-the-uae/strategies-initiatives-and-awards/local-governments-strategies-and-plans/sharjah-tourism-vision-2021>.

Ajman, which has almost zero oil revenue, has a Vision 2021 focused on building a green economy and a more cohesive and happy society.¹²⁷

Although Vision 2021, the individual Visions of the Emirates, and other strategic documents are not exclusively dedicated to economic diversification, almost all aspects of the plans work toward achieving that goal. Diversification of the economy is critical in order to maintain the level of public services and other benefits that lead to the overall well-being that is the center of Vision 2021. The next chapter will utilize the performance indicators that have been outlined in this chapter and utilize benchmarks outlined in other strategic documents to assess the performance of the UAE to this point in reaching its Vision.

¹²⁷ Ajman Department of Tourism, “Ajman 2021,” accessed February 1, 2019, <http://ajman.travel/en-ajmantourism/ajman-2021/>.

IV. ANALYSIS OF PROGRESS

Vision 2021 laid out the future economic and social outlook that UAE leadership envisioned in 2010. This chapter will utilize some of the performance indicators specified in the Vision along with basic economic performance indicators to determine if the UAE has made progress toward their goal of a more diverse and knowledge based economy. This chapter will look at annual gross domestic product (GDP) growth rates, annual non-oil GDP growth, the Global Innovation Index (GII), and the Global Competitive Index (GCI) contained in the Global Competitiveness Report (GCR). While not a comprehensive study, these key indicators do provide insight into where the UAE has been successful and where there is still work to do.

A. GROSS DOMESTIC PRODUCT

GDP has become widely used as a reference point for the overall health of national economies. GDP started to become widely used following the Bretton Woods conference in 1944 and expanded in use following World War II.¹²⁸ The International Monetary Fund (IMF) defines GDP as “the monetary value of final goods and services...produced in a country in a given period of time. It counts all of the output generated within the borders of a country.”¹²⁹ Real GDP is calculated by adjusting for inflation and allows for a fair comparison year over year. Real GDP is also referred to as GDP in constant prices. Data for determining GDP is usually calculated by each nation’s statistical agency, but follow standards established by the IMF, the European Commission, the Organization for Economic Co-operation and Development (OECD), UN, and the World Bank.¹³⁰ This standardization allows for easier comparison across economies.

¹²⁸ Elizabeth Dickinson, “GDP: A Brief History,” *Foreign Policy* (blog), January 3, 2011, <https://foreignpolicy.com/2011/01/03/gdp-a-brief-history/>.

¹²⁹ Tim Callen, “Gross Domestic Product: An Economy’s All,” IMF Finance & Development, December 18, 2018, <https://www.imf.org/external/pubs/ft/fandd/basics/gdp.htm>.

¹³⁰ Callen.

The authors of UAE Vision 2021 did not establish specific GDP growth goals for the years going forward. The Vision described aspirational changes to the makeup of the UAE economy, shifting away from resource dependence to a knowledge-based economy that could sustain growth without reliance on oil. It also included plans for improving the underlying supports of the economy, such as education and infrastructure that would also lead to future growth. In order to determine whether those efforts have been successful, we must look to establish a reasonable expected GDP growth rate and then compare actual results.

In order to establish what expected GDP growth rate UAE leaders may have envisioned in 2010 when Vision 2021 was released, we must look to earlier strategic documents as well as the aspirational verbiage contained within Vision 2021. As discussed in chapter three of this paper, the two largest and economically most significant of the Emirates, Dubai and Abu Dhabi, both created strategic visions prior to Vision 2021. These documents, Dubai's Strategic Plan 2015 and Abu Dhabi's Economic Vision 2030, established quantified benchmarks to gauge the success of the economic proposals within the plans. These benchmarks can be useful when looking what a successful GDP for Vision 2021 would be.

Dubai's Strategic Plan was written in 2005 and came at a time of rapid economic growth for the country. Dubai had been working on a number of financial reforms and was expanding in the tourism and trade sectors. With that in mind, Plan 2015 called for 11% annual GDP growth over the following ten years.¹³¹ Based on the growth experienced in the immediately preceding years, this goal seemed ambitious, but attainable. However, the global economic downturn toward the end of the decade took its toll on the GDP growth of the UAE, especially in the finance and tourism sectors that had provided previous growth. In fact, in 2009 the UAE actually saw GDP contraction of -5.2%.¹³²

¹³¹ "Dubai Strategic Plan 2015," Dubai Planning Council.

¹³² International Monetary Fund, "Gross Domestic Product in Constant Prices for United Arab Emirates."

Abu Dhabi released their Economic Vision 2030 in 2008 and had the advantage of seeing some of the early signals of the slowing of the global economy. By the time they created their plan, they scaled back growth predictions to 7% annually until 2015 and then 6% annually thereafter.¹³³ Abu Dhabi is the largest oil producing Emirate and its economy is more reliant on oil revenues than Dubai or other Emirates. The transition of the Abu Dhabi economy to the growing knowledge based sectors is not as urgent as some of the other Emirates due to its oil wealth. The more industrial nature of the economy also leads to slower GDP growth. These factors all may account for Abu Dhabi's more conservative growth goals compared to Dubai's three years earlier.

So by 2010, what kind of GDP growth expectations did the UAE leadership have? The language of Vision 2021 describes a dynamic economy that is rapidly changing to meet the needs of the future. Revenues from the traditional natural resource based economy would be utilized to rapidly develop new sectors of the economy and lead to rapid growth in those areas. According to the IMF, target GDP growth for emerging economies usually falls between 5% and 10% annually.¹³⁴ Although not classified as an emerging economy, the UAE's transition away from resource dependence shares many characteristics of a developing economy, with the creation of new economic sectors and associated increases in productivity. An estimate of GDP growth within the 5–10% would seem to match the aspirations articulated in Vision 2021. Based on these factors this paper will utilize the target growth rates of the largest Emirate, as articulated in Abu Dhabi's vision 2030, as a reasonable benchmark for the UAE as a whole.

Looking at the actual GDP growth rates compared to targets of 7% through 2015 and 6% thereafter, the UAE has fallen short of expectations. Figure 1 shows that the UAE nearly reached target growth rates in 2011 at 6.93% but fell short in each of the other years. Growth recovered rapidly following the 2009 global financial crisis, remaining steady between 4% and 5% from 2012–2015. However, growth rates following 2015 have been especially disappointing, with 2017 growth less than 1%. Some of this slowdown can be

¹³³ Abu Dhabi Executive Council, "Abu Dhabi Economic Vision 2030."

¹³⁴ "World Economic Outlook (October 2017) - Real GDP Growth," International Monetary Fund, accessed December 15, 2017, http://www.imf.org/external/datamapper/NGDP_RPCH@WEO.

attributed to the decrease in oil prices starting in 2014. As of 2014, oil and gas extraction still accounted for 34% of the UAE economy and depressed oil prices significantly affected revenues.¹³⁵ This performance only serves to re-emphasize the importance of further diversification and reduced reliance on oil for revenue in order to become more resistant to price fluctuations in the oil market.

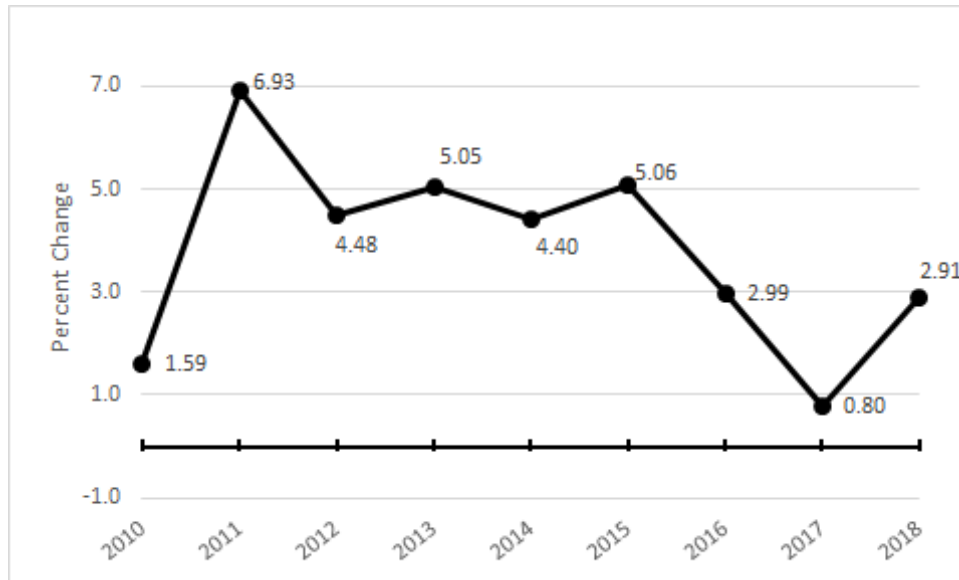


Figure 1. GDP in Constant Prices for the UAE, Annual Percent Change¹³⁶

B. NON-OIL GDP

Non-oil GDP growth is listed as one of the KPIs of the competitive knowledge economy pillar of the 2021 National Agenda to achieve Vision 2021. Measuring the non-oil GDP growth rate is a good indication of whether non-oil sectors of the economy, especially those in the knowledge-based sectors, are growing. Growth in these areas would be an indicator that resources and reform efforts in these areas are paying dividends and

¹³⁵ “The Economy,” The Official Portal of the UAE Government, accessed February 4, 2019, <https://www.government.ae/en/about-the-uae/economy>.

¹³⁶ Adapted from International Monetary Fund, “Gross Domestic Product in Constant Prices for United Arab Emirates.”

helping to diversify the economy away from resource reliance. Some of the non-oil sectors that most contribute to the UAE's GDP are wholesale and retail trade, repair services, real estate, business and finance, construction, and manufacturing.¹³⁷ Much of the construction and manufacturing sectors in the UAE are structured to take advantage of the cheap energy available due to the abundance of gas and oil and are thus still partially reliant on the energy sector.

This paper will look again at Abu Dhabi's Economic Vision 2030 in order to establish a benchmark for non-oil GDP growth. Dubai's Plan 2015 did not contain non-oil GDP goals because oil only accounts for approximately 1% of Dubai's GDP and is not significant enough to warrant a separate category. Abu Dhabi is more representative of the UAE economy as a whole. Non-oil GDP growth should outpace GDP growth in a diversifying economy as the economy reduces reliance on natural resources and other sectors replace oil revenues. Based on this assumption, non-oil GDP growth targets were set at 9.5% annually through 2015 and 7.5% annually thereafter in Vision 2030.¹³⁸ These growth rate targets are 2.5% and 1.5% greater than overall GDP targets and using these figures reflect Vision 2021's aspirations for an increasingly knowledge-based economy prepared for future non-resource dependent growth.

Figure 2 shows that the UAE failed to reach the aspirational growth targets in any of the years from 2010–2018. Perhaps more troubling, it also failed to meet the goal of having non-oil GDP growth outpace overall GDP growth as would be expected in a successfully diversifying economy. Non-oil GDP growth was below overall GDP growth in five of the nine years. In 2013 and 2016, non-oil growth was only marginally higher, by .9% and .17%, respectively. The year 2014 stands out with non-oil growth 2% higher as hoped for in a diversifying economy; however, this can be largely explained by the significant drop in oil prices in 2014. With the reduced share of oil revenue, an increase in non-oil contribution to the GDP is expected.¹³⁹ Although growth rates may not be as high

¹³⁷ "The Economy."

¹³⁸ Abu Dhabi Executive Council, "Abu Dhabi Economic Vision 2030."

¹³⁹ Ulrichsen, "Post-Rentier Economic Challenges."

has hoped, the fact that non-oil GDP was able to grow during the 2014 downturn is a good sign of the strength of other sectors of the economy. Unfortunately, as oil prices remained low in subsequent years, non-oil GDP growth slowed as well.

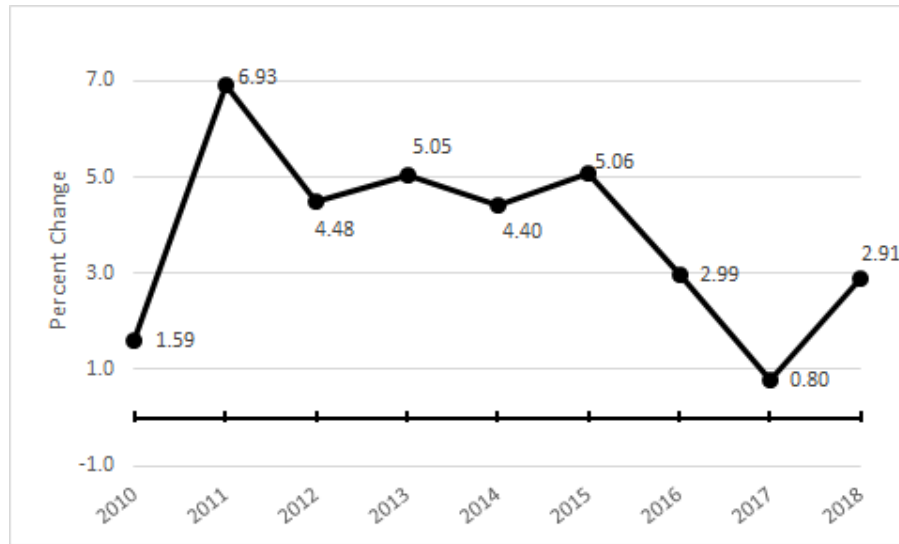


Figure 2. Non-Oil GDP of the UAE in Constant Prices, Annual Percent Change¹⁴⁰

C. GLOBAL INNOVATION INDEX

The GII was started in 2007 by a professor at the INSEAD business school to better measure innovation and go beyond previous basic metrics used such as research and development (R&D) spending and academic research articles. The index utilizes the OECD definition of innovation, which is “the implementation of a new or significantly improved product (good or service), a new process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations.”¹⁴¹ Measuring innovation outputs is difficult, and few official statistics exist that quantify innovation. To

¹⁴⁰ Adapted from International Monetary Fund, “Non-Oil Real GDP Growth in Constant Prices for United Arab Emirates,” FRED, Federal Reserve Bank of St. Louis, January 1, 2019, <https://fred.stlouisfed.org/series/ARENGDPXORPCHPT>.

¹⁴¹ Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, *The Global Innovation Index 2018: Energizing the World with Innovation* (Geneva: World Intellectual Property Organization, 2018), <https://www.globalinnovationindex.org/gii-2018-report>.

overcome this, the GII emphasizes measuring the climate and infrastructure for innovation and assessing outcomes related to that climate. The Index utilizes two equally weighted sub-indices consisting of different pillars to provide the overall score for a country. The innovation input index consists of five pillars that reflect elements that enable innovation and the innovation output sub-index has two pillars showing the results of innovative activities. The GII is a good indicator to study in the context of UAE's Vision 2021 because it covers many of the areas that encompassing Vision 2021, including government institutions, infrastructure, and human capital, in one place.

The GII is constantly working to provide the best data possible, and the model used to generate scores and rankings are adjusted every year. The sub-indices and major pillars have remained consistent with only slight changes in terminology. The sub-pillars and indicators under the sub-pillars are adjusted more frequently and each year's report details changes made and the impact of those changes on rankings. Data is updated as available and the reports utilize data from prior years if it the most current available. Since 2016, the Index tightened the data requirements for inclusion and some countries with multiple fields of missing data were dropped.¹⁴² These changes make it difficult to compare scores from year to year, however since the same framework is utilized for the included countries each year, the relative rankings are still useful when comparing across economies and looking for general trends.

Institutions is the first pillar of the input sub-index. The institutions pillar includes the sub-pillars of the political environment, regulatory environment, and business environment. Indices used to score these areas cover the political stability of governments, quality of public services, government policies toward the private sector, rule of law, and ease of doing business.¹⁴³ These correlate to goals laid out in the Safe Public and Fair Judiciary and Cohesive Society and Preserved Identity national priorities in Vision 2021.

¹⁴² Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, *The Global Innovation Index 2016: Winning with Global Innovation* (Geneva: World Intellectual Property Organization, 2016), 45, http://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2016.pdf.

¹⁴³ Dutta, Lanvin, and Wunsch-Vincent, *The Global Innovation Index 2018*, 17.

The second pillar of the Input sub-index is human capital and research. The sub-pillars are education, tertiary education, and research and development. The indicators used to measure in this pillar cover elementary and secondary education levels, education expenditures, OECD PISA scores, tertiary enrollment focusing on STEM, number of researchers, money spent on R&D, and the quality of research universities in the country.¹⁴⁴ These indicators correlate to the goals in the First-Rate Education System and elements of the Complete Knowledge Economy priorities of Vision 2021.

Infrastructure makes up the third pillar of the input sub-index and includes the sub-pillars of information and communication technologies (ICT), general infrastructure, and ecological sustainability. These sub-pillars use ICT indices, online participation, electricity output, logistics performance, capital improvement outlays, and energy efficiency to score the infrastructure pillar.¹⁴⁵ Vision 2021 covers these elements in the sustainable environment and infrastructure section.

The fourth pillar of market sophistication covers credit, investment, and trade. To measure these sub-pillars the Index looks at ease of credit, bankruptcy laws, volume of credit, protection for minority investors, market size and dynamism, tariffs, competition, and GDP.¹⁴⁶ The competitive knowledge economy section of Vision 2021 covers many of these areas, but infrastructure development have been parts of the UAEs economic plans for decades.

The final pillar of the input sub-index is business sophistication. This pillar attempts to capture the conditions within business that foster innovation. The sub-pillars in this area are knowledge workers, innovation linkages, and the absorption of knowledge. In order to measure these areas the GII uses R&D expenditures within business, the number of knowledge workers, number of employees with advanced degrees, collaboration between universities and business, multi-party patents, trade levels, and intellectual property and

¹⁴⁴ Dutta, Lanvin, and Wunsch-Vincent, 17.

¹⁴⁵ Dutta, Lanvin, and Wunsch-Vincent, 18.

¹⁴⁶ Dutta, Lanvin, and Wunsch-Vincent, 18.

technology imports.¹⁴⁷ These measurements all fit with the competitive knowledge economy portion of Vision 2021 and are areas where the UAE has sought improvement.

The innovation output sub-index only has two associated pillars. The first pillar, knowledge and technology outputs, covers variables associated with inventions or innovations. It covers national and international patents, peer-reviewed published articles, increases in labor productivity, high-tech industrial output, high-tech exports, and exports of ICT services. The second output pillar is creative outputs. This covers trademarks applications, industrial designs, cultural exports, online presence and proliferation of mobile apps. Cultural exports include marketing, films, music, and other exportable creative intellectual property. These measurements attempt to capture the results of inventive or innovative activity. If innovation inputs are being implemented or improved, the outputs should rise correspondingly.

The UAE has had mixed performance in the GII since 2010. Due to the methodology of the index, year-to-year comparison of raw scores does not provide accurate insight. However, since the UAE is competing with other GCC countries in a race to who can diversify and reduce reliance on natural resources the fastest, a comparison with other GCC countries is appropriate. Figure 3 shows that the UAE has performed well relative to other GCC countries in the overall rankings of the index. The UAE has been either the first or the second ranked country among the GCC, topping the group in six of the nine years, including the last three. This performance would indicate that the UAE is in a good position regionally to take advantage of growing opportunities in innovation.

¹⁴⁷ Dutta, Lanvin, and Wunsch-Vincent, 18.

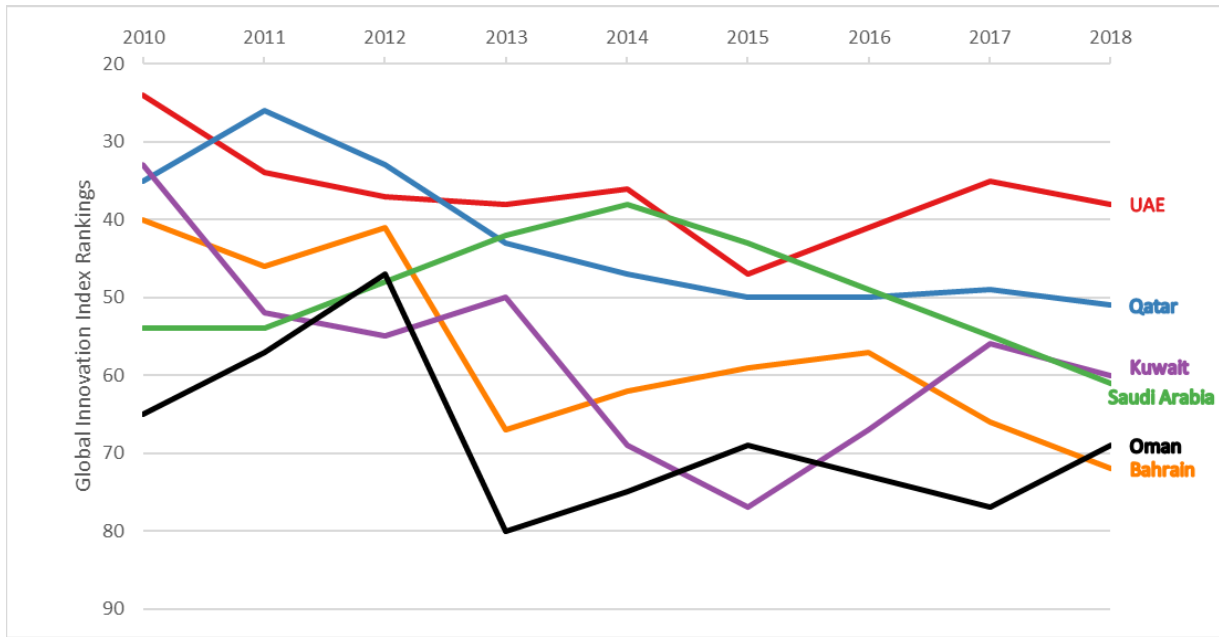


Figure 3. GII Rankings of GCC Countries 2010–2018¹⁴⁸

Looking closer at the GII reveals area where the UAE is particularly strong, and many of these areas are specific efforts of Vision 2021. The UAE performs well in many of the areas of the innovation input sub-index, where government policy and resources can be directed to influence performance. Particular high points in the most recent report are the UAE’s electric infrastructure output (ranked eighth overall), inbound mobility to tertiary education (first), and cluster development (second).¹⁴⁹

The electric infrastructure output ranking is helped by the abundance of cheap gas available; however, the other areas are direct results of programs implemented in order to

¹⁴⁸ Dutta, Lanvin, and Wunsch-Vincent, *The Global Innovation Index 2018*; Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, *The Global Innovation Index 2017: Innovation Feeding the World* (Geneva: World Intellectual Property Organization, 2017), <https://www.globalinnovationindex.org/gii-2017-report>; Dutta, Lanvin, and Wunsch-Vincent, *The Global Innovation Index 2016*; Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, *The Global Innovation Index 2015: Innovation Policies for Development* (Geneva: World Intellectual Property Organization, 2015); Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, *The Global Innovation Index 2014: The Human Factor in Innovation* (Geneva: World Intellectual Property Organization, 2014); Soumitra Dutta and Bruno Lanvin, *The Global Innovation Index 2013: The Local Dynamics of Innovation* (Geneva: World Intellectual Property Organization, 2013), <http://globalinnovationindex.org/content.aspx?page=gii-full-report-2013>; Soumitra Dutta, *The Global Innovation Index 2012: Stronger Innovation Linkages for Global Growth* (Fountainebleau: INSEAD, 2012).

¹⁴⁹ Dutta, Lanvin, and Wunsch-Vincent, *The Global Innovation Index 2018*.

improve diversification. Pushes for increased tertiary educational availability and opportunity have made tertiary education attainable for almost all UAE citizens who want it. These schools are also increasingly graduating students in science and engineering curriculums.¹⁵⁰ The cluster development are a result of special economic zones established to concentrate business together and take advantage of supply chain efficiencies and technology sharing.¹⁵¹

While the GII shows that the UAE is putting effort into the inputs that should lead to increased innovation, the result of the innovation output sub-index is less flattering. The GII shows that the UAE consistently ranks near the bottom of the approximately 140 countries covered by the GII in scientific outputs such as scientific and technical articles, high-tech exports (excluding re-exports), and patent applications.

The result of this discrepancy between high rankings in inputs and low rankings in outputs is a dismal ranking in the innovation efficiency ratio. This means that the UAE is not reaping the rewards of the massive investment they are putting into innovation generating sectors. Between 2011 and 2018 the UAE never finished higher ranked than 95th (2018) and finished as low as 133rd (2013 and 2015) in innovation efficiency.¹⁵² It may just be a matter of allowing the investments time to result in increased innovative output, and their highest efficiency ratio being in 2018 may offer some hope. However, the inability to produce innovative output may be a sign that current efforts are not working as well as anticipated.

D. GLOBAL COMPETITIVENESS REPORT

The GCR is produced annually by the WEF. It ranks countries based on the GCI and attempts to measure the ability of economies to use available resources productively

¹⁵⁰ Hvidt, *Transformation of the Arab Gulf Economies into Knowledge Economies: Motivational Issues Related to the Tertiary Education Sector*.

¹⁵¹ Hvidt, *Economic Diversification in GCC Countries: Past Record and Future Trends*.

¹⁵² Dutta, Lanvin, and Wunsch-Vincent, *The Global Innovation Index 2018*; Dutta and Lanvin, *The Global Innovation Index 2013*; Dutta, Lanvin, and Wunsch-Vincent, *The Global Innovation Index 2015: Innovation Policies for Development*.

in order to sustain current prosperity and create medium-term economic growth.¹⁵³ The GCI is made up of twelve pillars, separated into three sub-indices that are weighted based on an economy's level of development. Data for the index comes from publically available economic data and results from the Executive Opinion Survey, which compiles results from over 16,000 business executives in over 140 economies.¹⁵⁴ The GCI is another index that compiles data on many sectors outlined in UAE Vision 2021. Looking at the UAE's performance in the index over time provides insight into the effectiveness of economic initiatives undertaken as part of the vision. The GCR changed the way it calculates the GCI and the factors that go into the calculation in 2018. This paper will primarily look at reports from 2010–2017 In order to make analysis of year-to-year index results consistent.

The three sub-indices of the GCI are based on the economic theory of stages of development. As described in the GCR, the first stage of development is factor-driven and economies in this stage rely on unskilled labor and natural resources. This first stage relies on well-functioning institutions, stable macroeconomic environment and a relatively healthy and educated population. A country moves into the second, efficiency-driven stage of development as productivity and wages rise. This stage requires more efficient production process and increased quality. This stage requires higher education, developed labor and financial markets, integration of technology, and large domestic or export markets. The final stage, innovation-driven economy, requires sophisticated business and production process and the innovation of new processes to sustain higher wages and a higher standard of living.¹⁵⁵

The GCI weighs the scores of the pillars that fall under each of three sub-indices that represent the stages of economies based on the stage of development of a particular economy. For example, basic factors such as public and private institutions compose 60% of the GCI score for economies in the factor driven stage, but only 20% for economies in

¹⁵³ Klaus Schwab, "The Global Competitiveness Report 2018," 4.

¹⁵⁴ Klaus Schwab, *The Global Competitiveness Report 2017–2018* (Geneva: World Economic Forum, 2017), 14, <http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf>.

¹⁵⁵ Schwab, 23.

the innovation driven stage.¹⁵⁶ Conversely, innovation and sophistication factors compose 30% of the score for innovation driven economies and only 5% for factor driven economies. The GCI also accounts for economies in transition from one stage to another, resulting in five categories that an economy can fall into. The UAE is categorized as an innovation driven economy for purposes of the GCI and is the only GCC country to be at that advanced stage. The other highest-ranking GCC countries in the index, Saudi Arabia and Oman, fall into the category of economies transitioning from efficiency driven to innovation driven.

The first sub-index of basic requirements contains the pillars of institutions, infrastructure, macroeconomic environment and health and primary education. The institutions pillar looks at both public and private institutions, legal framework, ethics, and security. The infrastructure pillar measures quality of roads, railroads, ports, airports, electric grid, and telecommunications. The macroeconomic environment is measured by looking at government budgets, debts, inflation, and national credit rating. The final basic pillar looks at health factors such as prevalence of communicable diseases, life expectancy, and infant mortality, as well as the quality and enrollment rate of primary education.¹⁵⁷ Many of Vision 2021's initiatives are focused on improving in these areas and are reflected in the world-class healthcare, first-rate education, sustainable environment and infrastructure, and safe public and fair judiciary national priorities.

The efficiency sub-index is comprised of the higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, and market size pillars. Higher education and training looks at the enrollment in secondary and tertiary education and education quality. The goods market efficacy pillar looks at competition, taxation, ease of starting a new business, tariffs, foreign ownership, customs, and demand conditions. Labor market efficiency is measured by the ease of hiring and firing employees, pay rates, attraction and retention of talent, and female participation in the labor force. The financial market development incorporates the ease of access to

¹⁵⁶ Schwab, 25.

¹⁵⁷ Schwab, 25.

financing and capital, soundness of banks, and financial regulations. Technological readiness measures the availability of technology, level of technology transfer, and Internet usage in a country. The final efficiency pillar accounts for the domestic and foreign market available for trade. These areas are incorporated into the knowledge driven economy and first-rate education sections of UAE Vision 2021.

The final GCI sub-index of innovation and sophistication is made up of a business sophistication pillar and a R&D innovation pillar. Business sophistication looks at competitive advantage, cluster development, value chains, marketing, and the reliance on professional management. R&D innovation looks at scientific research institutions, R&D spending, patent applications, and protection of intellectual property. Many of these same indicators are reflected in the GII, but in the GCI, they are nested with broader economic data to form a more complete economic picture. Elements of the competitive knowledge economy section of Vision 2021 are reflected in this sub-index.

The UAE has had consistently high performance in the GCI since 2010, performing well relative to other GCC countries and showing steady improvement in overall score. It has ranked in the top 20 from 2013–2017. Figure 4 shows the rankings of GCC countries in the GCI, with the UAE holding the top spot for the last three years. The closest GCC competitors are Qatar and Saudi Arabia, which were also the closest countries in the GCI.

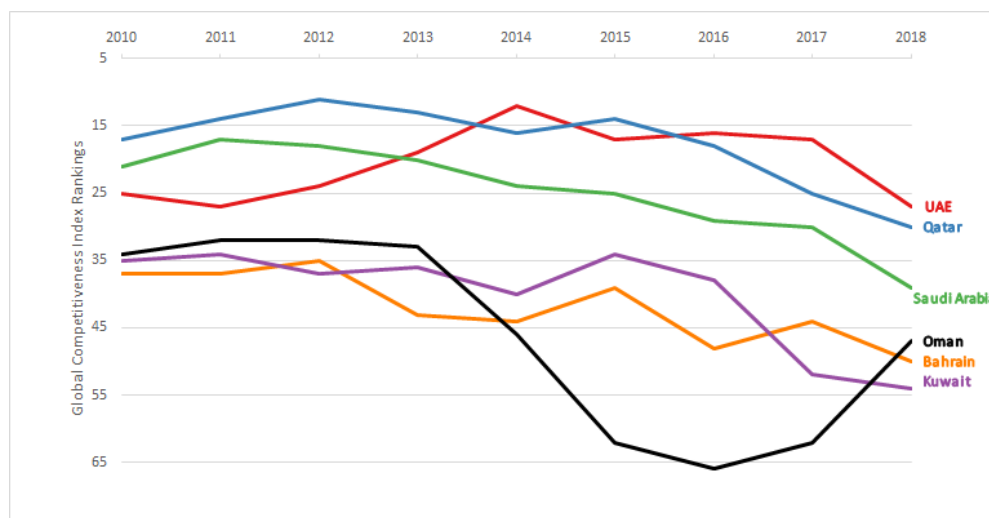


Figure 4. GCI Rankings of GCC Countries 2010–2018¹⁵⁸

The GCI methodology is more consistent than the GII, so year by year comparisons of scores is a viable way of looking at absolute improvement in the overall index score as well as individual components various areas of the index. The UAE’s overall score (on a 1–7 scale) improved from 4.9 in 2010 to 5.3 in 2017. There has also been improvement in each individual sub-index, with the largest increase in the innovation and sophistication factors. This indicates that progress is being made across the board and programs implemented to improve the economic environment are having some effect.

The highest scoring areas for the UAE in the 2017 report are the basic requirement sub-pillars of institutions (ranked fifth) and infrastructure (fifth) and the efficiency enhancer sub-pillar of goods market efficiency (third). Within those sub-pillars the strongest areas are public trust in politicians (second), efficiency in public spending (first),

¹⁵⁸ Schwab, *The Global Competitiveness Report 2018*; Schwab, *The Global Competitiveness Report 2017–2018*; Klaus Schwab, *The Global Competitiveness Report 2016–2017* (Geneva: World Economic Forum, 2016); Klaus Schwab, *The Global Competitiveness Report 2015–2016* (Geneva: World Economic Forum, 2016); Klaus Schwab, *The Global Competitiveness Report 2014–15* (Geneva: World Economic Forum, 2014), http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf; Klaus Schwab, *The Global Competitiveness Report 2013–2014* (Geneva: World Economic Forum, 2013), http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf; Klaus Schwab, *The Global Competitiveness Report 2012–2013* (Geneva: World Economic Forum, 2012); Klaus Schwab and Xavier Sala-i-Martin, *The Global Competitiveness Report 2011–2012* (Geneva: World Economic Forum, 2011); Klaus Schwab, *The Global Competitiveness Report 2009–2010* (Geneva: World Economic Forum, 2010).

burden of government regulation (second), quality of roads, (first), ports (fourth) and airports (third), and the effect of taxation on investment (first).¹⁵⁹ Similar to the strengths in the GII, these are all areas where government policy or investment has had a positive impact on economic factors that lead to diversification and economic growth.

The pillars where the UAE received lower rankings were the health and primary education (33rd) and higher education (36th). The individual areas that received the lowest rankings were female participation in the labor force (121st), legal rights index (106th), primary and tertiary enrollment rates (87th and 94th) and the government budget balance (87th).¹⁶⁰ This shows that there is work to do to improve development in the indigenous labor force. If these areas are not improved, there will not be sufficient Emirati labor to fill the newly created knowledge economy jobs and Emiratization programs in the private sector will fail. Either companies will continue to attract foreign talent to fill positions or increased government quotas of unqualified Emiratis will cause inefficiencies that will stifle growth.

In 2018, the WEF changed the way it calculated the GCI and came out with GCI 4.0. This new calculation established different sub-indexes and pillars and removed the weighted nature of the sub-indexes based on the stages of economic development. The new scores are based on a 100-point scale, with 100 being the optimal condition for competitiveness.¹⁶¹ Under the new scoring system, the UAE dropped ten spots to 27th in the rankings, but maintained their position atop other GCC countries.¹⁶² The pattern of high and low ranked areas remained consistent, with top rankings in electricity generation and macroeconomic stability and low rankings in health, education, and female labor participation. New indicators that also led to poorer performance were freedom of the press (104th) and worker's rights (116th).¹⁶³ The new scoring system shows that there remains room for improvement in the areas of education and innovation. It is again a question of

¹⁵⁹ Schwab, *The Global Competitiveness Report 2017–2018*, 351.

¹⁶⁰ Schwab, 351.

¹⁶¹ Schwab, "The Global Competitiveness Report 2018," 45.

¹⁶² Schwab, 297.

¹⁶³ Schwab, 298.

whether the investments and initiatives of the government just need time to show results or whether there is something preventing further progress in the knowledge-based economy.

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V. CONCLUSION

The UAE is considered a rising economic player and has worked to increase its relevance on the global stage. Part of that work includes a push toward a competitive, diverse economy that leverages the competitive advantage of abundant natural resource wealth. This thesis has examined the UAE's economic vision for the future and evaluated the amount of progress that has been made toward achieving that vision. The leaders of the UAE understand the need to transition away from resource based revenue and have envisioned a plan to do so. However, historical reliance on rent-based revenue and slowly developing education sector have limited the ability for Emiratis to generate the economic output that would be expected given the investment the government has made.

The economic and political history of the UAE goes back to the nomadic tribes of sheep and camel herding. As peeling became a lucrative commodity trade, the wealth and power structure of the nomadic tribes transferred to the pearling industry. Power and status were further entrenched by the arrival of external global economic forces, and tribal leaders were able to maintain their positions based on receiving rent from trade, land use, and eventually oil. Early leadership of the UAE realized it would need to diversify the economy to be less reliant on oil revenue when they became independent in 1971. Early diversification efforts focused on industrialization, many related or reliant on the oil and gas trade, and building infrastructure projects to support these industries. In the most recent decades, these diversification efforts have expanded to include more sectors such as finance, tourism, and trade.

In 2010, the UAE launched Vision 2021 as its latest roadmap for the advancement of Emirati society and the diversification and expansion of its economy. This plan lays out the goal of becoming a knowledge-based economy, and building the educational foundation and necessary infrastructure to make that goal a reality. The overall objective was to make the UAE the best country in the world by the 50th anniversary of its founding. This thesis examined the various parts of the Vision, to include plans for improved secondary and tertiary educational outcomes, improved ICT infrastructure, and increased innovation and entrepreneurship in knowledge based sectors. While the vision is noble,

there is a lack of exact initiatives implemented or specific goals to measure whether progress is being made at the pace the leaders had hoped.

By looking at past strategic visions and by interpreting the verbiage of UAE Vision 2021, this thesis looked at four different indicators to gauge the success of Vision 2021 up to this point. GDP and non-oil GDP growth numbers have not reached the levels expected of an economy growing into new, higher productivity sectors. They have also not reached the levels that the aspirational language of Vision 2021 would indicate the UAE would like to see. The UAE performs well when compared to regional rivals in both the GII and GCI indices. It has also made forward progress year over year in the areas measured by both reports. However, analysis of the reports shows that the UAE is not creating the type of innovative or economic output expected given the large amount of investment into infrastructure, education, and government institutions.

This thesis provided an analysis of current progress toward Vision 2021's economic goals. Further research into the causes of the lower than expected economic gains would be useful in directing future efforts toward more productive directions. Further research is also needed to determine whether economic gains made to this point will be sustainable as the UAE attempts to replace more foreign experts with Emiratis workers and transition Emiratis from the public to the private sector. A study of the success of Emiratization programs and the economic performance of sectors as they transition would provide insight into the long-term viability of the knowledge-based economy toward which the UAE is working.

The UAE has laid the foundation to achieve the kind of economy described in Vision 2021. Oil revenues have allowed the government to build infrastructure and government institutions that create an environment for successful innovation and economic growth. The only part of the equation that is missing is the indigenous labor force educated, trained, and motivated to take advantage of the situation. Continued advancement in the education of Emirati citizens, increased participation of women in the labor force, and decreased dependence on public sector jobs is required to fulfill the vision outlined by UAE leaders. It is critical that the UAE moves in this direction while the oil revenues that have propped up the economy until now are still around. Future years may see the return from

the significant investments made in the knowledge economy up until this point, but there will be significant social and economic consequences if the oil revenues that have undergirded the UAE power structure disappear in the near future. The UAE is on the right course, but may need to speed up the process of transition in order to maintain their upward trajectory.

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