EVALUATING THE UNITED ARAB EMIRATES SUCCESS IN UTILIZING KNOWLEDGE AND TECHNOLOGICAL INFRASTRUCTURE

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Abstract
Purpose: The United Arab Emirates (UAE) has recently embarked on raising awareness about economic diversification with particular focus on the fundamental concepts of a knowledge economy (KE) across the private and the public sectors. The UAE strategic vision 2021 advocates for increasing investment in science and technology and research and development (R&D) with the aim of turning the economy into a KE. So far, according to the latest Digital Opportunity Index (DOI) and World Economic Forum reports (2011), the country continues to lead the Arab world and many other countries in the region in technological infrastructure and the adoption of ICT. The objective of this paper, therefore, is to empirically evaluate the extent of the UAE success in utilizing knowledge and available technological infrastructure in domesticating the manufacturing and production of technology products as an important source of wealth generation.
Design/methodology/approach: The evaluation is based on studying the time trend (1981–2010) of exports and imports of non-oil technology products. Furthermore, in line with Porter's model of national competitiveness, a regression analysis is employed to investigate factors that influence UAE technology exports, excluding re-export.
Findings: Evidence reveals that the UAE manufacturing sector is clearly gaining momentum and its contribution to both the total GDP and to the

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non-oil GDP is increasing over time. However, the country is unfortunately experiencing an increasingly chronic balance of payments deficit in technology as a result of increased dependence on technology imports. Regression analysis results indicate that recent growth in UAE technology exports is mainly attributed to increasing development in the country's technological infrastructure. The role of inward FDI in promoting UAE technology exports is still insignificant.

Originality: Evaluation of the UAE level of diversification and utilization of knowledge and technological infrastructure, based on updated data, is a necessary step in assessing achievements and adoption and application of future policies and programmes.

Keywords: Knowledge economy, Diversification, Technological exports, R&D, Evaluation

Paper type: Research paper

INTRODUCTION

Despite progress made towards economic diversification in most of the GCC countries, growth in the non-oil sector remained weak relative to the growth of the domestic labour force. The heavy cost of diversification incurred by GCC countries, as indicated by Fasano and Iqbal (2003), amounted to heavy costs, in terms of subsidies of power, water, and credit; a lack or exemption of taxation; and a heavy reliance on imported capital equipment and expatriate workers. The process has also involved a questionable partial transfer of oil wealth from the governments to citizens. The consequent ramifications include the emergence of the GCC governments as the main investors in the economy paying up most of the employment cost of the indigenous population. Further negative implications were marked by rising inflation and land prices in a real estate market developed in a disorderly manner. Provision of almost free or highly subsidized energy, particularly water and electricity in the presence of high demand and consumption (World Bank, 2005a), negatively impacts the sustainability of the energy industry due to its reliance on fluctuating government funds and spending.

The United Arab Emirates (UAE), a member state of the GCC countries, is facing a daunting challenge in diversifying its economy. A diverse economy for the UAE would mean huge benefits for the country in terms of economic growth, global market reach and less dependence on a single commodity sector. The country has recently embarked on raising awareness about economic diversification with particular focus on the fundamental concepts of a knowledge economy (KE) across the private and the public sectors in line with the UAE vision 2021 and the federal strategy of 2011–2013. The strategy advocates for increasing investment in science and technology and research and development (R&D) with the aim of turning the economy into a KE.

The concept of a "KE" is used to describe an economy that creates, disseminates and uses knowledge to enhance its growth and development. According to the World Bank (2005b), a successful KE is characterized by close links between academic science and industrial technology, which is empowered by increased education and lifelong learning and greater investment in intangibles such as research and development (R&D) and software. It places a greater importance than does a non-KE on innovation for economic growth and competitiveness. The application of knowledge in the economy implies an efficient means of production and delivery of goods and services at lower costs to a greater population size. Therefore, the application of knowledge in economic development entails investing in strategies that produce significant changes in the way a country can grow (Salmi, 2009).

In line with the economic theory relating to knowledge economies, the Global Competitiveness Index (GCI) (see GC report 2011-2012), assumes three stages in an economic development and competitiveness path. The first stage, the *factor-driven stage*, entails competition between countries based on their endowments and natural resources driven by well-functioning institutions, a well-developed infrastructure and the provision of at least basic education to a healthy workforce. The transition into the *efficiency-driven* stage, the second stage, develops as the country entertains increased productivity and competitiveness; in this stage, efficient production processes and product quality are needed. Factors influencing this stage include investment in higher education, the provision of training for the workforce and the ability to harness the benefits of existing technologies. At the last development stage, the *innovation-driven* stage, countries are expected to compete by producing new and different goods using the most sophisticated production processes and by innovating new processes and goods (GC report 2011–2012). Innovation implies sufficient domestic manufacturing, the production of technology products and equipment catering to domestic needs and an increase of access to imports and exports in international markets.

The technology products and equipment discussed in this study are compiled according to Revision 3 of the Standard International Trade Classification (SITC) of the United Nation's Statistics Division. These products mainly cover SITC sections 5, 6, 7 and 8, minus division 68 and group 891, namely iron and steel, chemical products, machinery and transport equipment and others. The size of technology imports and exports together with the share of technology-based industries in the labour force are important indicators that can be utilized to gauge the level of technology transfer and diversification of a country into a KE (Bachellerie, 2010). For instance, the Republic of Korea, which succeeded in making great strides in transition to a KE, has managed to create a strong technological infrastructure, moving from a labour-intensive economy to a knowledge intensive economy mainly by investing in R&D and increasing its supply of researchers and its demand for research, particularly in the fields of science and engineering. According to the 2011 International Monetary Fund, World Economic Outlook Database, Korea's total export of technological products reached 411.53 billion US dollars, compared to total imports of 239.62 billion US dollars, resulting in a positive trade balance of 171.91 billion US dollars (Bachellerie, 2010).

The focus of this analysis is to empirically evaluate the extent of the UAE success in diversifying its economy and utilizing knowledge and available technological infrastructure in domesticating the manufacturing and production of technology products as important sources of wealth generation. The methodology outlined below is adopted to achieve this research objective. The empirical results of the research study include the degree of dependence of the UAE manufacturing sector on the oil sector.

METHODOLOGY

Data sources

The realization of the research objectives is based on annual data covering the period from 1975 to 2010, representing real UAE oil GDP and manufacturing sector GDP measured annually in the local UAE currency at 2001 constant prices. The data are from the UAE Bureau of Statistics National Accounts estimates. Annual data from the UAE Bureau of Statistics on the country's foreign trade are also used to meet the second research objective. The data cover technology products exports and imports for the period from 1981 to 2010. Other international data sources are also used, including UNICAD and Scopus databases.

The assessment of the country's diversification towards manufacturing to reduce reliance on the oil sector is approached by utilizing synchronization techniques, which are usually used to measure the convergence or divergence of global business cycles (see Mink *et al.*, (2007)). Business cycles are commonly estimated by the output gap, which is the difference between the actual and potential level of national output (e.g., oil GDP). Output gaps for different business cycles can subsequently be analyzed to establish the level at which cycles move together. Traditionally, the correlation measure is used to assess cycle synchronicity; however, several criticisms are raised against this measure (Mink *et al.*, 2007). Alternatively, Mink *et al.* (2007) nonparametric measure is used, as it has several advantages over other measures, including the ease of the interpretation of the measure and the ability to provide the direction of the business cycle synchronization (Basher, 2010). The measure determines the synchronicity between a reference cycle and another individual cycle or between a reference cycle and a group of cycles. The obvious choice for a reference cycle in the context of this study is the cycle of the oil sector.

To evaluate the extent of success the UAE achieved in utilizing knowledge and available technological infrastructure to move towards a knowledge economy, the time trend of exports and imports of UAE manufacturing and technology products are investigated. Countries that experience innovative sophisticated production processes are expected to enjoy a positive trade balance for technological products: higher exports than imports. Finally, based on Porter's national competitiveness model, a regression analysis is employed to investigate factors that influence technology exports originating in the UAE (excluding re-exports).

The methods used to estimate potential output (trend) and output gaps in this study, along with the Mink *et al.* (2007) synchronicity measure, are detailed as follows.

ESTIMATING THE OUTPUT GAP

The output gap is an unobservable variable defined as the difference between an actual and potential output. It is a commonly used instrument in policy formulation, playing a prominent role in macro-economic theory and in the practical development of monetary policy in many economies. Given other observable macroeconomic variables, several techniques are developed to estimate the potential output and the output gap. Three classes of techniques exist, all of which vary in regard to their usage of economic theory, namely statistical, structural and mixed or multivariate methods. The estimation of potential output in this study is developed using a purely statistical approach, utilizing the popular Hodrick-Prescott (HP) filter. This technique is known for its simplicity and has a multitude of advantages over several other techniques available in the literature (Harvey and Jaeger, 1993; Cogley and Nason, 1995; Clark, 1989; Ravn and Uhlig, 2002). No attempt is made to carry out an estimation using the structural or the mixed approaches because the reliance of these approaches on economic theory and model assumptions is more appropriate for industrialized economies (Osman *et al.*, 2010).

THE HODRICK-PRESCOTT (HP)

The Hodrick-Prescott (HP) is a commonly used de-trending technique to estimate potential output, y_t^p, and the related output gap. The HP filter computes the smoothed long-term component of output, y_t^p, by minimizing the variance of output y_t around potential output y_t^p subject to a penalty that constrains the second difference of the potential output. Thus, the filter chooses the potential output, y_t^p, which minimizes the quantity:

$$\sum_1^T \left(y_t - y_t^p\right)^2 + \lambda \sum_2^{T-1} \left(\left(y_{t+1}^p - y_t^p\right) - \left(y_t^p - y_{t-1}^p\right)\right)^2 \qquad (1)$$

where T indicates the sample size. The penalty parameter λ controls the smoothness of the trend output y_t^p, by capturing the importance of cyclical shocks to the output relative to trend output shocks. The penalty parameter is chosen arbitrarily. For annual data, Hodrick and Prescott selected a value of λ equals 100. Notably, the larger the value of λ, the smoother the trend becomes. Ravn and Uhlig (2002) provided a significant contribution to the application of the HP filter and suggested a proper value of λ equaling 6.25 for annual data.

THE SYNCHRONIZATION MEASURE

Let $g_r(t)$ denote the output gap associated with the reference cycle, the oil cycle. Mink *et al.*'s (2007) synchronicity measure between individual sector i for the reference cycle in period t is given as

$$\phi_{ir}(t) = \frac{g_i(t) g_r(t)}{|g_i(t) g_r(t)|} \qquad (9)$$

$g_i(t)$ is the output gap for sector i in period t.

The multivariate representation of Mink *et al.*'s synchronicity measure that examines synchronicity between a group of business cycles and a reference cycle is given as

$$\phi(t) = \frac{1}{N}\sum_{1}^{N}\frac{g_i(t)g_r(t)}{|g_i(t)g_r(t)|} \tag{10}$$

where N is the number of business cycles in the group for the non-oil sectors within the country.

The synchronicity measure takes a value between –1 and +1. The measure will take the value of 1 if both) $g_i(t)$ and $g_r(t)$ have the same sign, and it takes the value of -1 if their signs are opposites. Sector *i* is said to be dependent (synchronized) on the reference sector when the synchronicity measure approaches +1. The measure approaches –1 when output gaps do not coincide, and sector *i* is said to be independent of the reference sector, when diversification occurs. The percentage of times sector *i´s* output gaps have the same sign as the reference cycle in period *t* and can be estimated by transforming the synchronicity measure to a uniform [0,1] scale.

EMPIRICAL RESULTS

The UAE oil and manufacturing sector output gap

Figure 1 displays the GDPs of the real oil and non-oil sectors for the period from 1975 to 2010. The figure provides evidence of a slow increase in the growth rate of the UAE oil GDP following the removal of the 1973 oil embargo, followed by a declining trend that is clearly

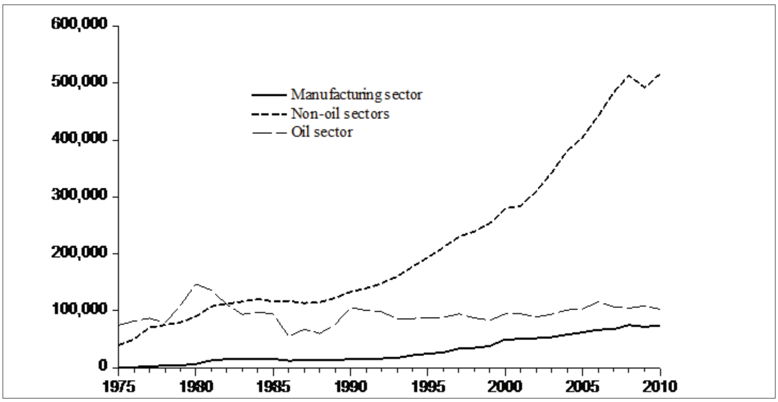


Figure 1. UAE Oil, Manufacturing and Non-oil Sectors GDP (AED millions, 2001=100), 1975-2010

evident during the mid-1980s in response to a collapse in oil prices. The rates after the 1990 Gulf War illustrate a constant growth. The trend of non-oil GDP, on the other hand, demonstrates a gradual rise in growth rates until approximately 1990, followed by a steady increase afterwards, which appears to reflect the success of the UAE diversification strategy of promoting non-hydrocarbon sectors. A similar post-1990 increase is noticed (Figure 1) in the manufacturing sector trend, albeit at a very slow pace.

As clearly depicted in Figure 2, the HP filter indicates that the UAE oil output gap has sharply turned negative on two occasions: the mid- to late-1970s and the mid-1980s. Both occasions are associated with drops in oil prices. A close look at Figure 2 suggests that positive and negative output gaps for the oil and the manufacturing sectors are somehow synchronized: positive (negative) growth in oil and manufacturing output gaps are generally related. This association is also confirmed by KAMCO (2011) on the premises that the expected increase in the oil and gas prices would help derive GDP growth in the short-term as well as help the UAE government's expansionary fiscal policies to ensure expansion of the non-oil sectors and redirection of hydrocarbon revenues towards the development of key industries and towards the funding of the costly processes for building domestic technology (Muysken and Nour, 2006). Basher (2010) argues that changes in oil prices may not have any independent impact on the non-oil sector unless revenues are channelled through the government's fiscal instruments. This argument supports earlier evidence based on the empirical panel regression results produced

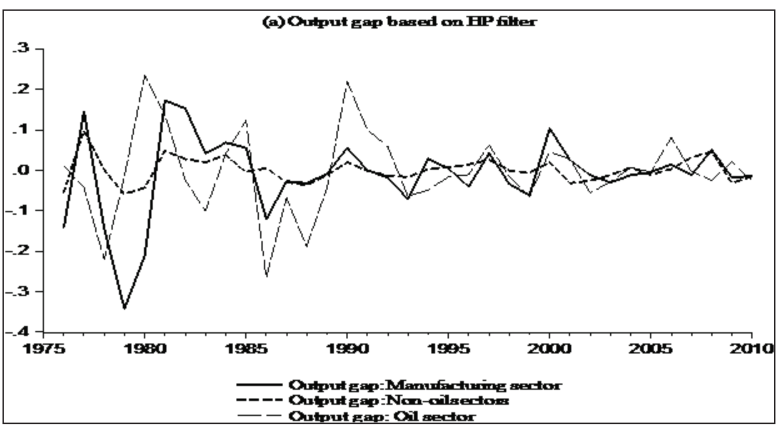


Figure 2. Oil sector, manufacturing sector and total non-oil sectors output gap based on the HP filter

by Husain *et al.* (2008), using data for ten oil-producing countries. The regression results suggest that oil prices do not independently influence underlying non-oil output.

KNOWLEDGE UTILIZATION

A strategic goal of the UAE diversification strategy is the expansion of the non-oil sectors to enhance the country's economy and enable it to compete with emerging markets. The UAE vision of 2021 and the federal strategy of 2011–2013 advocate increasing investment in science and technology and R&D with the aim of turning the economy into a KE. This requires adoption of strategies aimed at building local capacity, reducing dependence on foreign technologies, improving competitiveness and intensifying domestic manufacture and the production of technology products and equipment to serve both domestic and international needs. Recent figures reveal that the UAE manufacturing productivity and its contribution to the GDP has increased slowly over time, as shown in Figure 1. However, the extent of the diversification of the manufacturing sector in a way that minimizes reliance on the oil sector needs further investigation.

A review of Figure 3, which displays the synchronicity measure of equation 9 between the manufacturing sector and the oil sector, together with the calculated trend, estimated using the Hodrick-Prescott (HP) filter, reveals the following insights. There are some occasions where the manufacturing sector trend showed that the manufacturing sector had an

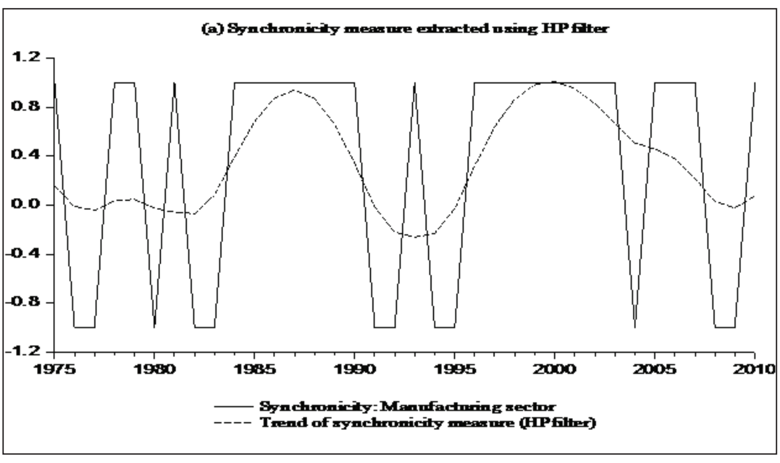


Figure 3. The synchronicity of the UAE manufacturing sector and the UAE oil sector based on the HP filter

increased dependence on the oil sector, such as during the 1980s and the late 1990s. Notably, the results produced by the two filters are generally in agreement, particularly in the post-1990 period. An overall assessment of the level of dependence and independence of the manufacturing sector on the oil sector over the period from 1975 to 2010 can further be estimated by looking at the percentage of times the manufacturing sector and the oil sector had output gaps with the same sign. Using the HP filter, the reported percentage of output gaps with the same sign for the two sectors reached 66.7 per cent, which signifies a high level of manufacturing sector dependence on the oil sector. However, the post-2000 synchronicity trend, shown in Figure 3, indicated a significant erosion of the dependence level, suggesting that the diversification of the UAE economy within the manufacturing sector started to show higher levels of development and a resulting increased independence from the oil sector.

Indeed, reviewing the summary given in Table 1 clearly indicates that the manufacturing sector is gaining momentum and that its contribution to both the total GDP and the non-oil GDP is increasing over time. However, one important characteristic of the UAE manufacturing sector is its labour-intensive nature, which is strained by relatively low labour productivity, which is caused by the adoption of production processes that mainly rely on unskilled and relatively inexpensive foreign labour (Abdalla *et al.*, 2008). Building a KE requires more investment in the acquisition of advanced technologies and the development of high levels of competency in the workforce, and it requires fostering a culture that values scientific and technological innovation (World Bank, 2005b). According to Seyoum (2004), a good measure of a country's competitiveness in high technology is the presence of substantial and sustained exports in the high technology

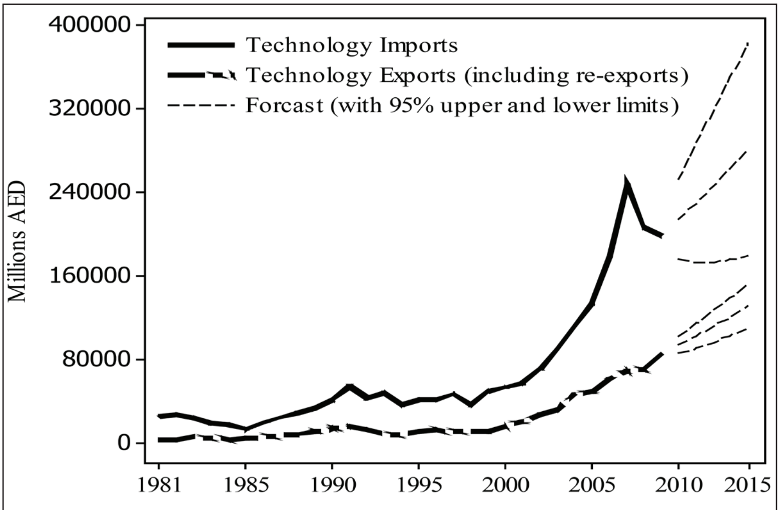
YEAR	Contribution of manufacturing GDP as a percentage of non-oil GDP	Contribution of manufacturing GDP as a percentage of total GDP
[1970, 1980)	03.79	01.64
[1980, 1990)	11.83	06.62
[1990, 2000)	12.72	08.53
[2000, 2010]	15.64	12.39
All	12.12	08.22

Table 1. The contribution of manufacturing GDP as a percentage of non-oil GDP and total GDP

sector. By increasing the overall efficiency of labour and capital, high technology sectors contribute to rapid growth in both manufacturing and services (Seyoum, 2005). He further echoed a statement by Reich (1991) that high-technology industries will replace resource and labour capital-intensive industries as the future primary source of wealth generation.

The aforementioned discussion stimulates a need to further investigate the UAE's success in developing indigenous technological capabilities and innovating manufacturing and production processes and to further investigate the level of technology transfer made thus far in achieving the country's transition into a KE. Such investigation would utilize a number of indicators, including the country's exports and imports of technological products. Technological products are often linked to firms and industries whose products or services embody advanced and innovative technologies (Keeble and Wilkinson, 2000). These firms commonly rely on advanced scientific and technological expertise and on high R&D expenditure.

UAE technology imports and exports data depicted in Figure 4 and Table 2 indicate an increasingly chronic balance of payments deficit in technology as a result of increased dependence on technology imports



Source: (Abdalla Alfaki and Ahmed, 2013)

Figure 4. UAE technology products imports and exports (millions AED) together with (2011 to 2015) forecast based on ARIMA (0, 2, 1) model

due to the country's lag in many important areas such as investment in domestic knowledge innovations and in the promotion of the growth of a skilled workforce (Abdalla *et al*., 2008). Nevertheless, as Seyoum (2005) argues, "For many countries, high technology development may not be easily realized just through domestic innovative activity. The experience of many successful economies shows that besides internal technology development, external sources of technology can be identified and acquired through licensing of foreign technology, foreign direct investment, and acquisition of foreign high technology companies or even importation of high technology products. Even though governments tend to focus on the production of technology, it is the consumption of it that has the greater impact." An OECD study (1997) on the role of R&D spending and of foreign technology acquisition spending reported greater productivity gains and higher investment return from buying rather than producing new technology.

Despite the high deficit in UAE technology exports (Figure 4 and Table 2), the country is riding an increasing trend of higher technology export growth, particularly since the year 2000. Studying 55 developed and developing countries, Seyoum (2005) discussed three factors hypothesized to influence a nation's level of high technology exports: (1) the level of foreign direct investment (FDI), (2) domestic demand conditions and the sophistication of buyers and (3) the availability of technological infrastructure. These were recognized as external factors as opposed to internal firm production factors such as technology management and strategy.

Drawing on Seyoum's (2005) methodology, the rest of this paper proposes an empirical investigation of factors that influence technology exports in the UAE. The investigation serves two purposes. First,

Year	Mean	Median	Standard deviation
[1981, 1985]	18,557	18,295	4,384
[1986, 1990]	16,753	17,264	5,249
[1991, 1995]	33,261	31,276	5,244
[1996, 2000]	32,179	30,767	5,065
[2001, 2005]	48,690	43,736	12,989
[2006, 2010]	125,987	116,919	34,658
[2011, 2015]	134,753	134,469	11,965

Table 2. UAE technology products deficit (exports – imports in millions AED)

the investigation will assess the contribution of the UAE national technological infrastructure in enhancing the technology exports sector through increasing efficiency of labour and capital. Second, this paper will investigate the country's orientation towards technological development through increasing R&D spending and through upgrading necessary scientific and technological resources.

Therefore, regression analysis is employed to investigate the relationship between the UAE technology exports (excluding re-exports) and the factors highlighted by Seyoum's study (2005), which are based on Porter's model of national competitiveness (Porter, 1990). The utilized dataset represents a time series covering the period from 2000 to 2010 and was obtained from the UAE Bureau of Statistics and other international sources.

Technological infrastructure constitutes the development of scientific and technological resources to support a nation's technology-based development. It is argued that competitiveness and trade performance in high technology industries are strongly related to the level of R&D and to the availability of highly skilled labours, scientists, and engineers, both of which create and sustain a significant level of innovative activity (Keeble and Wilkinson, 2000). To measure technological infrastructure, Seyoum (2005) used two variables, namely, the country's expenditure on R&D and the number of scientists and engineers engaged in R&D. To measure UAE technological infrastructure, four variables were employed. The first variable represents *the proportion of skilled workers* (above a high school level of education), obtained from the census and from the Ministry of Labour estimates (Al Awad, 2010), the second variable denotes *the number of publications by UAE scientists and researchers in the science fields* retrieved from Scopus database, (SCImago, 2007) and the third and fourth variables are *the UAE internet and broadband subscriptions per 100 inhabitants*, retrieved from the International Telecommunication Union database (http://www.itu.int/ITU-D/ict/statistics/). Each of the four variables is standardized to the same scale to have a mean of zero and standard deviation of one. Subsequently, an index denoted as the UAE *technological infrastructure index (TII)* was formed as a simple average of the four standardized variables. This index is believed to capture the state of scientific infrastructure in the UAE.

On the other hand, foreign direct investment (FDI), retrieved from the UNICAD database, is believed to generate several positive effects on host economies. These range from the transfer of advanced and new technologies to the host economy to the establishment of collaboration and alliances between foreign and local firms in the host economy (Seyoum, 2005). Collaboration arrangements often take the form of long-term supply arrangements between firms, joint R&D, joint ventures and licenses, all of which lead to the development and exportation of new and advanced products.

The dependent variable in the regression model, *UAE technology exports in Billion UAE Dirhams*, is log transformed to normalize the distribution. The independent variables are thus represented by the *inward FDI* and the developed *technological infrastructure index (TII)*. The third factor on the Porters model, *home demand conditions*, is not included in the regression model due to the unavailability of data. It is worth noting that the World Economic Forum have published the *Buyers' Sophistication Index* as a proxy for home demand conditions at the country level in their Global Competitiveness Report (GCR) of 2004. The index was based on surveying experts and business leaders. However, during the period from 2004 to 2012, the GCR used different methodologies to estimate the index, and, therefore, resulting indices are not comparable over time.

Due to the time series nature of the data used in the regression, there is a big chance that model residuals may be time dependent. However, diagnostics checks and the correlation of regression residuals and lagged residuals revealed a non-significant coefficient, p = 0.771. The fitted model demonstrates a high explanatory power with an adjusted coefficient of determination, , reaching 92.1 per cent of the total variations of UAE technology exports.

Table 3 presents the results of the regression analysis. Evidence confirms the strong positive and highly significant relationship between technological infrastructure and technology exports (p = 0.000). Although the relationship between inward FDI and the UAE

Coefficient	Estimate	Standard error	t	p
Constant	0.655	0.1440	4.561	0.002
Foreign direct investment (FDI)		0.0001	1.076	0.313
Technological infrastructure index (TII)	0.816	0.0990	8.214	0.000
	0.921			
F value	46.383	(p-value = 0.00)		

Table 3. Regression analysis results and parameter estimates

technology exports is taking the expected direction (Table 3), it is clear that the role of inward FDI in promoting UAE technology exports is still insignificant (p = 0.313). Therefore, based on the regression analysis results, it could be argued that recent growth in UAE technology exports can be attributed mainly to increasing developments in the country's technological infrastructure. These developments themselves arose from an increased supply of skilled labour and an increased level of investment of R&D that led to an increased research output, together with development in the ICT sector, indicated by an increased level of Internet and broadband subscriptions.

CONCLUSION

This paper has discussed the level of achievement that the UAE has attained both in diversifying its economy by expanding a profitable manufacturing sector and by promoting the application of knowledge and technology in efficient production and in the development of new domestic products.

The data employed in this paper's analysis are mainly collected from UAE Bureau of Statistics and from other international sources, including the World Bank and the International Telecommunication Union database. The Hodrick-Prescott statistical technique is used to estimate the output gap for the oil and the manufacturing sectors. The calculation of the output gap is essential for studying the degree of business cycle synchronicity and interdependence between selected sectors and business cycles using Mink's non-parametric measure.

When synchronizing the manufacturing sector with the oil sector, the evidence reveals that 66.7 per cent of output gaps in the two sectors have the same sign, signifying a high level of dependence of the manufacturing sector on the oil sector. However, as revealed by the trend analysis, this dependence is decreasing over time, and the manufacturing sector is showing an independent growth away from the oil sector. This growth, however, is pushed by the growth of mainly labour-intensive activity and is therefore dependent on production processes that employ low technology levels. Notably, UAE technology production is suffering a great deal as a result of the country's high dependence on imports of technology and technology products, creating a huge imports-exports balance of payments deficit. Nonetheless, trivial growth in technology exports has been reported recently (post-2000) and is mainly attributed to increasing development in the country's technological infrastructure and insignificantly attributed to increased levels of inward foreign direct investment (FDI).

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