ECONOMIC TRENDS OF SAUDI URBAN SYSTEM (1992 – 2010)

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ABSTRACT

This paper is an investigation of the economic trends of diversification vs. specialization of Saudi urban system over the last eighteen years of analysis (1992 to 2010). This research paper set out to answer three simple questions: (a) between 1992 and 2010, have the Saudi urban economies tended to diversify or to specialize?; (b) have the Saudi urban economies with more diversified economic structure tended to grow faster than those with a more specialized structure?; and (c) over the same period, which economic sectors become more diversified or specialized across the Saudi urban system?

The urban system analyzed herein account for approximately 70 percent of the population of the nation and about 58 percent of the workforce of the national total workforce. The findings reveal that, given all the efforts of Saudi governments at all levels to spatially diversify the economic activities through improving the distribution of economic activities across urban places, the majority of Saudi urban places did not change their relative economic structure or their level of diversity during the period of analysis. The majority of Saudi urban places did not change their relative economic structure or their level of diversity between 1992 and 2010. This is verified by two results: (a) The stability of the diversity/specialized index over this period of analysis for all urban places except for a few urban areas; and (b) The fact that more than 63% of all urban areas remain in the same cluster (i.e. HI ≤ 0.3) over the period of analysis.

Keywords: Urban System, Economic Structure, Diversification, Specialization, Herfindahl Index, Saudi Arabia

1. Introduction

Despite comprehensive efforts by the Saudi government at all levels to promote balanced socio-economic development across national space, the apparent widening of the disparity gap in levels of socio-economic development, at both inter-and-intra-regional levels, still persists. The polarized nature of both population and economic activities distribution in few urban centers due to fast national development and accelerated urban transition during the last thirty five years is also remarkable. In 1992, about 45% of the national urban population was living in the three largest urban centers (namely: Riyadh, Jeddah and Dammam). These three urban centers shared as much as 85% of economic activities in the country and contributed to more than 75% of the total national urban employment (Alankary and Elbushra, 1989; Alhathloul and Edadan, 1995; Alhowaish, 2011). They remain so today. The government, however, sought that unless past trends in polarization of urban areas and interregional disparities are rectified, national urban development cannot be sustained (Ministry of Planning, 1995).

One of the most notable government development strategies in this regard is the formulation of the National Spatial Development Strategy in 2000. This strategy outlines the desired future settlement pattern and spatial distribution of population and supporting

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services and economic activities to promote balanced socio-economic development on the national space. The strategy also addresses a wide range of future challenges that Saudi Arabia is expected to face in the first half of the 21st century. Among these challenges are how to strengthen the national economy and decrease dependence on a single basic source of income (i.e. oil production); how to reduce inter- and intra-regional disparities in levels of socio-economic development while ensuring economic efficiency and social equity; and how to promote a hierarchy of a spatially balanced urban system capable, not only of accommodating expected increase in population, but also diversifying the economy and generating required jobs. The National Spatial Strategy established a legal frame for spatial development at the national level. Its policies are consistent with the national development goals of economic efficiency and social equity. While economic efficiency is achieved through expanding opportunities for economic growth and industrial diversification, social equity is achieved through gradual development from growing to lagging regions (Ministry of Municipal and Rural Affairs, 2000). Hence, understanding the complexities of the Saudi economic system in terms of urban economic structures and changes is important for development agencies, policy makers and planners at the national, regional and local levels.

In developing this research paper, the researchers set out to answer three simple questions: (a) Between 1992 and 2010, have the Saudi urban economies tended to diversify or to specialize?; (b) Have the Saudi urban economies with more diversified economic structure tended to grow faster than those with a more specialized structure?; and (c) Over the same period, which economic sectors become more diversified or specialized across the Saudi urban system?

2. Theoretical Background

Urban economists, planners and policy makers usually draw their economic development policies from two opposing theoretical debates to explain the process of structural changes of local economies. The first advocates draw from Jacobs externalities, arguing that diversified local economies are conducive to growth and development (Jacobs, 1969). On the other hand, the second advocates draw from Marshall-Arrow-Romer (MAR) externalities, who argue that specialization is conducive to growth and development (Porter, 1990). On one hand, the Jacobs externalities (op. cit.1969) view diversification of economic structures as one solution to the problems facing communities, particularly those heavily dependent on single economic sectors. They argue that diversifying the local economic structures will make communities less vulnerable to economic variability and instability in the long run. They also emphasize that the higher levels of diversification process of localities, the faster the employment growth is. Thus, a diversified local economy would be expected to have a better chance to achieve future stability and growth.

At the other extreme, the MAR externalities (op. cit.1990) predict that the community’s economic development will be accompanied by increasing degree of specialization. They argue that in order for a community to be globally competitive, specialization in its economic structures is to be sought after and encouraged. They predict that the higher levels of specialization are in the economic structure of localities, the faster the employment growth is. Thus, a specialized local economy would be expected to have more
competitive advantages in today’s global economy. Indeed, the globalization of the world economy would force many localities around the world to specialize in different economic sectors to benefit from international trade.

A number of recent empirical works have emphasized the fact that specialization and diversification of economic structures co-exist within an urban system. In fact, Hansen (2001), suggests that “urban systems may have an innate tendency to create this type of imbalance”. Likewise, O’Donoghue (2000) and O’Donoghue and Townshend (2005) show that there is no simple trend either towards or away from diversity. They analyzed the diversification of 150 British Travel-to-Work areas, which account for nearly 90% of all employment in Britain. Between 1978 and 1991, they detect a weak trend towards convergence in employment structures. However, they also show that a particular group of cities – the ten largest metropolitan areas – actually diverge over most of the period. Beckstead and Brown (2003) obtained similar results. They show that in Canada between 1992 and 2002, there is a weak trend towards the diversification of medium-sized cities, and towards the specialization of the largest ones.

From this brief review of the theoretical debate and empirical evidences, it is apparent that research on specialization and diversification of economic structures in urban system has been undertaken for some time. However, available literature appears somewhat limited in spatial extent. Almost all studies identified in this section have taken place in North America, mainly USA and Canada, (Attaran, 1986; Coffey and Shearmur, 1996; Shearmur and Polese, 2004), and more recently, in the British context (Dewhurst and McCann, 2002; O’Donoghue and Townshend, 2005). Little has been learned from these dynamic applications of specialization/diversification models in the developing countries, in general and Saudi Arabia, in particular.

Given all the efforts by the Saudi government of strengthening the national economy and reducing the dependency on oil production as the basic source of national income on one hand, and to create a balance urban and regional development on the other, it would be of particular interest to examine these specialization/diversification models of economic structures across the national Saudi space.

3. Research Methodology

The data for this research paper were obtained from the Annual Statistical Report of the Saudi General Organization for Social Insurance (GOSI) for the years 1992 and 2010. The GOSI database contains the records of all individuals (on the job-insured employment) 15 years and older, employed in the formal economic activities of Saudi urban economies. The data are aggregated into 9 major economic sectors and covered 19 Saudi urban areas. Due to the limitation of available data in more detailed industrial sectors of employment at urban levels, the researcher used these 9 aggregation sectors as an indicator of specialization/diversification of Saudi urban economies. The 19 Saudi urban areas analyzed herein account for approximately 70 percent of the total population of the nation and about 58 percent of the workforce of the national total workforce in 2010 (GOSI, 2010).
There are widely used techniques to measure the level of diversification/specialization of an economy. Measures of sectoral concentration such as the Ogive Index, the Entropy Index, Gini-Index, and the Herfindahl Index have been used as measures of economic diversification/specialization. These indices are all closely related and produce fairly similar results of economic structures among urban areas (Jackson, 1984; Malizia and Ke, 1993; Siegel et al., 1995). Specifically, these indices classify an urban economic structure as being either diverse or specialized. In this research, urban economic diversification or specialization is determined using the Herfindahl Index of concentration (HI). Although there are several approaches to measure and determine the economic structure of places (cities or regions), the Herfindahl Index (HI) approach is the most popular method (Jackson, 1984, Ben-David, 1991; Malizia, 1990, Siegel et al., 1995). The HI is derived using the following equation:

\[
HI_{ij} = \sum_{i=1}^{N} \left( MS_{ij} \right)^2
\]

Where \(MS_{ij}\) is the proportion of employment in industry \(i\) in community \(j\). It varies from \(1/N\), where all industries have the same share (i.e. high diversify economic structures), to 1, when one large industry (or firm) accounts for all employment (i.e. complete specialization). The Herfindahl Index \(HI_e\) equals the sum of the squared employment shares of all the industry \(i\)’s sectors in the urban \(j\)’s economy.

Over a period of time, a change in the HI indicates whether the urban area under investigation, is diversifying or specializing. Thus, a decline in the HI signifies less concentration in the dominant industry or greater level of diversification of urban economies. An increase in the HI indicates more concentration in the dominant industry or greater level of specialization in the economic structure of localities.

Care must be taken when interpreting the HI. While the HI indicates community economic diversification or specialization, based on the distribution of employment across industrial sectors, it does not indicate however, whether the community’s total labor force is increasing or decreasing. For example, the dominant sector in a community could be shedding labor due to an economic downturn. This would cause the HI to decrease, indicating “diversification”. Yet, this type of diversification – with losses in the labor force – is not likely the desired outcome for policy makers who wish to diversify the community’s economic base. A community would likely prefer to have increased economic diversity and employment gains. On the other hand, the HI may show an increase, that is, the community is specializing its economic structure. Yet again, it is not known if the workforce is growing or declining. The workforce could be increasing (due to strong growth in the dominant sector) or decreasing (because other sectors are declining, leaving the major sector looking more dominant in the community).

To better understand these dynamics for Saudi urban communities, the change in both the Herfindahl Index and the urban workforce can be categorized into four scenarios: Scenario I: urban communities with a growing workforce and a more diversified economy; Scenario II: urban communities with a growing workforce and a more specialized economy; Scenario III: urban communities with a declining workforce and a more

Most urban communities would likely prefer the situation found in scenario I, where the urban community is becoming more stable and robust due to economic diversification and the workforce is increasing due to expanding product demand and exports from the community (Page and Beshiri, 2003). Therefore, both the HI and the change in workforce (i.e. growth/decline) are used to understand better these dynamic changes of the economic structures of the Saudi urban system over time.

4. Results And Discussion

When using the HI of specialization/diversification there is no established standard or limit that defines a community to be diversified or specialized. Therefore, as ‘rule of thumb’ and for the purpose of this research study, the HI has been classified into three levels:

- Most diversified economies (HI ≤ 0.3).
- Average economies (0.31 ≤ HI ≤ 0.7).
- Most specialized economies (HI ≥ 0.71).

These levels are used as indicators for Saudi urban economies as being either diversified or specialized over the period of analysis.

Saudi Urban System

Over the period from 1992 to 2010, the level of specialization/diversification, as measured by HI, did not change much for the average Saudi urban system. The urban system as a whole, changed slightly from 0.18 to 0.24 respectively. However, the range of the HI across Saudi urban places did appear to change over the same period of analysis.

Fig. 1. Diversification of Saudi Urban System, 1992 and 2010

In 2010, 63 percent of Saudi urban areas were diversified to the extent that their HI was less than 0.29 (Figure 1 and Appendix I). This was a decrease from 79 percent in 1992. None of the nineteen Saudi urban areas fell within the range of most specialized economic structures (HI ≥ 0.71), while three urban areas (16 percent) remain in the same clustered within the range of (0.31 ≤ HI ≤ 0.7) during the 1992 to 2010 period.

To better understand the dynamics of economic structure changes for Saudi urban system, the change in both the Herfindahl Index and the urban workforce was determined.

between 1992 and 2010. The result revealed that all urban areas witness an increase in their workforce over the period of analysis, 32 percent of them were in the more desirable position of having a diversifying economy while 68 percent were in a position if having a specializing economic structure (Figure 2 and Appendix II). Makkah, Madinah, Tabuk, Taif, Jazan, and Alkharj urban communities were in Scenario I – these communities experienced a growing workforce and a “diversifying” economy (i.e. the HI declined). While the rest of Saudi urban communities were in Scenario II – these communities experienced a growing workforce and a “specializing” economy (i.e. the HI increased).

Fig. 2. Change in workforce and HI Index of Saudi Urban Communities, 1992 to 2010

Reflecting the city-size with the level of diversification in Saudi urban system, the outcome revealed that there is no strong link between city-size and level of diversification. The literature review suggested that urban economies (associated with the idea of diversity) are dependent on city size to the extent that, ceteris paribus, a larger city will tend to have a wider variety of different economic sectors within it (Glaeser et al., 1993; Porter, 1996; Quigley, 1998; Beckstead and Brown, 2003). However, this is not the case in the Saudi urban system. The largest two cities – Riyadh and Jeddah – do not appear to become more diversified-oriented over the 1992 and 2010 period. These two cities comprised almost 50 percent of total urban population and in 1992 and about 46 percent in 2010. The economic structure of these cities was characterized by a growing workforce and a more “specializing” economy.

The reviewed literature also suggested that smaller cities tend to be more specialized than largest cities. To some extent, this is true within the Saudi urban system. Smaller cities such as Baha, Najran, Aljouf and Yanbu cities tend to be more specialized-oriented over the 1992 and 2010 period (Appendix III). Similarly, the analysis revealed that the link between the level of diversification/specialization and concurrent employment growth is not certain. Both specialization and diversification processes of Saudi urban system have
led to employment growth. At certain periods, diversified economy is contributing to city-level employment growth as in the case of Makkah, Madinah, Tabuk, Taif, Jazan, and Alkhajr cities. Specialized economy is also contributing to city-level employment growth as in the case of the rest of Saudi urban areas. Thus, even if there is a link between initial diversification/specialization and subsequent employment growth, the link between the process of diversification/specialization and concurrent employment growth is not certain.

5. Urban Economic Sectors

Moving to economic sectors’ comparison across Saudi urban system, the analysis revealed that the urban system as a whole dominated by three economic sectors (construction; trade & hotel; and manufacturing industries). These three sectors account for approximately 61 percent in 1992 and more than 75 percent of total Saudi urban employment in 2010. Over the period of analysis, these three sectors increased by 413 percent or 2.8 million jobs.

The trend of diversification/specialization across urban economic sectors showed that, all economic sectors remained within the range of most diversified sectors (HI ≤ 0.3) over the 1992 and 2010 period of analysis. The only exception was in mining and petroleum sector. This sector showed more specialized-oriented sector with HI equal to 0.78 in 1992 and 0.63 in 2010. This sector accounts for 5% in 1992 and about 2% of the total urban employment in 2010 (Table 1). The above analysis indicated that the larger the size of economic sectors within the city, the higher the tendency to be more diversified nature, while the smaller the size of sector within the city, the higher the tendency to be more specialized nature. However, the link between dominant economic sector(s) within the urban communities and the trend of diversification/specialization process is not strong. The analysis revealed that communities dominated by sectors with larger share of employment within their economic structure witness more diversification economy as well as more specialization economy.

Table 1.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Sector</th>
<th>Jobs (‘000)</th>
<th>% Share</th>
<th>% Change</th>
<th>HI</th>
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<tr>
<td>Specialized Sectors</td>
<td>Mining and Petroleum</td>
<td>61.9</td>
<td>113.9</td>
<td>5.5%</td>
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<td></td>
<td>Agriculture and Fishing</td>
<td>12.5</td>
<td>58.7</td>
<td>1.1%</td>
<td>1.2%</td>
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<td></td>
<td>Manufacturing</td>
<td>126.8</td>
<td>539.3</td>
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<td>11.4%</td>
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<td>Diversified Sectors</td>
<td>Electricity</td>
<td>40.1</td>
<td>77.1</td>
<td>3.5%</td>
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<td></td>
<td>Construction</td>
<td>319.0</td>
<td>1,791.8</td>
<td>28.1%</td>
<td>38.0%</td>
</tr>
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</table>

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### Classification

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<tr>
<th>Sector</th>
<th>Jobs ('000)</th>
<th>% Share</th>
<th>% Change</th>
<th>HI</th>
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</thead>
<tbody>
<tr>
<td>Trade and Hotels</td>
<td>247.5</td>
<td>21.8%</td>
<td>395%</td>
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<td>Transport and Communication</td>
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<td>5.0%</td>
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<td>0.24</td>
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<td>Financing and Real Estate</td>
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<td>4.7%</td>
<td>463%</td>
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<td>Community and Social Services</td>
<td>216.0</td>
<td>19.0%</td>
<td>113%</td>
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<tr>
<td>Total Urban Sectors</td>
<td>1,134.5</td>
<td>100.0%</td>
<td>316%</td>
<td>0.18</td>
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### 6. Conclusion and Policy Implications

This research paper set out to answer three simple questions: (a) between 1992 and 2010, have the Saudi urban economies tended to diversify or to specialize?; (b) have the Saudi urban economies with more diversified economic structure tended to grow faster than those with a more specialized structure?; and (c) over the same period, which economic sectors become more diversified or specialized across the Saudi urban system? The findings from the above analysis reveal that the majority of Saudi urban places did not change their relative economic structure or their level of diversity between 1992 and 2010. This is verified by two results: (a) The stability of the diversity/specialized index over this period of analysis for all urban places except for a few urban areas; and (b) The fact that more than 63% of all urban areas remain in the same cluster (i.e. HI ≤ 0.3) over the period of analysis.

The findings also reveal that all Saudi urban places have witnessed a credible increase in their employment growth during the period of analysis. Both diversified and specialized Saudi urban economies are contributing to city-level employment growth. However, the link between urban places with more diversified economic structure (or those with more specialized economic structure) and employment growth is not clear-cut. Furthermore, the findings also show that larger economic sectors within the urban places tend to be more diversified than those with smaller share of employment. Sectors with larger share of employment – such as manufacturing, construction, and trade & hotel – tend to be more diversified and more spread sectors across urban places. Sectors with smaller share of employment – such as mining and petroleum, electricity, and transportation and communication – tend to be more specialized and more concentrated sectors in a few urban places. The changes in urban economic sectors described above, are all indicative of movements of Saudi government towards increasing rationalization and privatization of activity of public-owned business enterprises (e.g. electricity and transportation and communication sectors),
which began in the 1990s and continued through the 2000s. Employment in these sectors has become more spatially concentrated in space as a result.

It is to be noted by urban and regional economic planners as well, that there is sometimes confusion when diversification and specialization are discussed, since they are often seen by many policy makers and development agencies as alternatives. Diversification policies may be necessary to ensure that these urban places keep up with broader economic changes (i.e. regional or national structural changes). However, the capacity of such policies to generate employment growth and relative “catching up” with other places should not be overstated. On the other hand, specialization policies for some regions or cities may be the best growth and development option, especially when the specialty of a region or city is in demand. This should be borne in mind that when the demand for specialized industrial-cluster products drops down, the regions or cities that are specialized, will likely suffer. Vulnerability of over-specialized regions or cities has always been linked to stagnation and decline.

It should also be noted, that the efforts carried out by the Saudi government at all levels at spatially diversifying the national economy through the promotion and diversification of economic activities across urban and region places, have had, to some extent, remarkable effects on the economic structure and employment growth throughout the Saudi urban space. The implications of the results of national spatial development strategy seem to be encouraging. It must be noted that longer timespan and long-run perspective should be given to such strategy by Saudi policy makers, development agencies and planners to maximize sharing the benefits of this spatially development strategy and related policies.

7. References


الاتجاهات الاقتصادية في النظام الحضري السعودي (1992 - 2010)

د. عبدالكريم بين خلف الهويش

الملخص العربي

تهدف هذه الورقة إلى دراسة وتحليل البنية الاقتصادية لنظام الحضري السعودي خلال الفترة ما بين 1992 إلى 2010م، ومقابلة تحديد طبيعة وATURE القاعدة الاقتصادية لنظام الحضري باستخدام مؤشر فرده وتحليلية وحلوة الإجابة على ثلاثة أسئلة محورية: (1) هل القاعدة الاقتصادية لنظام السعودية نتجت نحو التنوع أو التخصص الاقتصادي خلال الثمانية سنة الماضية؟ (2) هل الاقتصادية المدن الأكثر تنويعاً تميل إلى النوع، وبشكل أسرع من تلك الاقتصادية ذات القاعدة الأكثر تخصصية، خلال فترة التحليل؟ ما هي القطاعات الاقتصادية الأكثر تنويعاً أو تخصصًا في النظام الحضري السعودي، بشكل النظام الحضري السعودي حوالي 70% من إجمالي عدد السكان وحوالي 58% من إجمالي القوى العاملة في المملكة العربية السعودية. كشفت هذه الدراسة أنه بغض من الجهد المبذول من قبل الحكومة السعودية لتقوية القاعدة الاقتصادية لمنشأ النمو في النظام الحضري من خلال استراتيجية تشغيل الأنشطة الإنتاجية والسياحية، إلا أن غالبية مدن المملكة لم تغير من حيث البنية الاقتصادية أو التنوع/الخصائص الاقتصادي خلال فترة التحليل.

الكلمات التالية: النظام الحضري، البيئة الاقتصادي، التنوع الاقتصادي، التخصص الاقتصادي، مؤشر فرده، المملكة العربية السعودية.

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