

Development Policies for Economic Diversification vs Economic Specialization: The Case of Saudi Urban Economies, 1992 – 2007

Abdulkarim Alhawaish*

Abstract

The aims of this paper are to: (a) Investigate the trend of diversification/specialization of Saudi urban economies for the years 1992 to 2007; (b) Examine whether urban economies with more diversified economic structure tend to grow faster than those with a more specialized structure; and (c) Identify which economic sectors become more diversified or specialized across the Saudi urban system over the same period of analysis. Urban economic diversification or specialization is determined in this research paper using the Herfindahl Index of concentration (HI). The data are aggregated into 9 major economic sectors and covered 19 Saudi urban areas. The urban areas analyzed herein account for approximately 60% of the population of the nation and about 42% 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 have not changed their relative economic structure nor their level of diversity during the period of analysis.

سياسات التنمية من أجل التنوع الاقتصادي أو التخصص الاقتصادي؛ المناطق الحضرية في المملكة العربية السعودية كحالة دراسية، 1992 - 2007

عبدالكريم الهويش

ملخص

تهدف هذه الورقة إلى: (1) التحقيق في اقتصاديات المناطق الحضرية من المملكة العربية السعودية واتجاه تنوع أو تخصص القاعدة الاقتصادية لهذه المناطق خلال الفترة من 1992 إلى 2007؛ (2) دراسة ما إذا كانت اقتصاديات المناطق الحضرية ذات التنوع الاقتصادي تميل إلى النمو أسرع من اقتصاديات المناطق الحضرية ذات التخصص الاقتصادي؛ (3) تحديد القطاعات الاقتصادية في المناطق الحضرية ومدى تنوعها أو تخصصها خلال فترة التحليل. تم استخدام مؤشر الهيرفاينداهل التحليلي لدراسة وتحليل البنية الاقتصادية للمدن الحضرية في المملكة. لقد تم إدخال 19 مدينة حضرية في التحليل، تمثل حوالي 60% من مجموع عدد سكان المملكة وحوالي 42% من مجموع القوة العاملة فيها. كشفت نتائج هذه الورقة أنه بالرغم من الجهود المبذولة من قبل الحكومة السعودية لتنويع القاعدة الاقتصادية لمناطقها الحضرية والإقليمية من خلال إستراتيجية تنوع الأنشطة الإنتاجية والخدمية، إلا أن غالبية مدن المملكة الحضرية لم تتغير من حيث البنية الاقتصادية أو التنوع/التخصص الاقتصادي خلال فترة التحليل.

* Assistant Professor and Economic Development Planner, Department of Urban and Regional Planning, College of Architecture and Planning, University of Dammam, PO Box 2397, Dammam 31451, Saudi Arabia. Tel: 966 5 6677 6060; Fax 966 3 8578 580, Email: ahowaish@u.edu.sa or alhawaish2020@yahoo.ca

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 thirtyfive 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 have 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). They remain so today. The government, however, seeks 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 (Ministry of Municipal and Rural Affairs, 2000). This strategy outlines the desired future settlement pattern and spatial distribution of population and supporting 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: (a) how to strengthen the national economy and decrease dependence on a single basic source of income (i.e. oil production); (b) how to reduce inter- and intra-regional disparities in levels of socio-economic development while ensuring economic efficiency and social equity; and (c) 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 (op. cit.). 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 researcher set out to answer three simple questions:

- Between 1992 and 2007, have the Saudi urban economies tended to diversify or to specialize?
- Have the Saudi urban economies with more diversified economic structure tended to grow faster than those with a more specialized structure?
- Over the same period, which economic sectors become more diversified or specialized across the Saudi urban system?

2. Theoretical Debates: Diversity and Speciality

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.) 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.) 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 pursued 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 speciality and diversity 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 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. Data and 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 1993 and 2007. The GOSI database contains the records of all individuals (on the job-insured employment) 15 years and older, and 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 60% of the population of the nation and about 42% of the workforce of the national total workforce in 2007 (Tables 1 and 2).

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.

Table 1: Distribution of Population in the Saudi Urban System, 1992 and 2007

Urban System	Population (thousand)		% Change	Growth rate (% per annum)
	1992	2007		
Riyadh	2723.2	4087.2	50.1	2.7
Qassim	240.1	507.4	111.3	5.1
Alkharj	148.6	201.0	35.2	2.0
Makkah	952.4	1294.2	35.9	2.1
Jeddah	2021.1	2801.5	38.6	2.2
Madinah	609.3	918.9	50.8	2.8
Taif	408.1	521.3	27.7	1.6
Yanbu	83.7	188.4	124.9	5.6
Dammam	482.1	744.3	54.4	2.9
Hassa	745.7	572.9	-23.2	-1.7
Jubail	78.7	222.5	182.7	7.2
HafrAlbatin	138.4	232.0	67.6	3.5
Hail	175.5	267.0	52.1	2.8
Tabuk	286.3	441.4	54.1	2.9
Aljouf	91.5	122.7	34.1	2.0
Abha	112.1	201.9	80.1	4.0
Jazan	78.6	100.7	28.1	1.7
Baha	68.5	85.2	24.4	1.5
Najran	199.3	246.9	23.9	1.4
Urban Areas 19	9643.6 (56.9%)	13757.2 (60.7%)	42.7	2.4
Total Saudi Arabia	16948.4	22673.5	33.8	2.0

Source: Annual Statistical Report (GOSI, 1992, 2007)

In this research, urban economic diversification or specialization is determined using the Herfindahl Index of concentration (HI). The HI is derived using the following equation:

$$HI_{ij} = \sum_{i=1}^N (MS_{ij})^2 \quad \text{Equation 1}$$

Table 2: Distribution of Employment in the Saudi Urban System, 1992 and 2007

Urban System	Employment (thousand)		Change %	Growth rate per % (annum)
	1992	2007		
Riyadh	273.9	995.4	263.4	9.0
Qassim	27.8	143.0	414.4	5.9
Alkharj	7.2	36.1	401.4	7.3
Makkah	51.6	128.7	149.4	6.3
Jeddah	194.4	559.8	188.0	5.2
Madinah	41.7	98.7	136.7	5.9
Taif	32.0	56.7	77.2	7.7
Yanbu	19.2	45.6	137.5	3.9
Dammam	294.8	696.5	136.3	7.7
Hassa	31.8	96.5	203.5	11.5
Jubail	42.1	89.6	112.8	4.8
HafrAlbatin	7.1	31.1	338.0	5.9
Hail	7.9	44.8	467.1	8.1
Tabuk	23.3	47.2	102.6	12.3
Aljouf	6.6	26.4	300.0	10.0
Abha	40.3	122.1	203.0	10.7
Jazan	13.1	41.9	219.8	11.3
Baha	7.3	33.5	358.9	10.3
Najran	7.5	31.3	317.3	9.7
Urban System 19	1134.5	3324.9	193.1	7.4
	(23.1%)	(42.8%)		
Total Saudi Arabia	4914.4	7766.4	58.0	3.1

Source: Annual Statistical Report (GOSI, 1992 and 2007)

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_{ij} 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). 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. Empirical Results

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 0.2);
- Average economies (0.21 HI 0.5); and
- Most specialized economies (HI 0.51).

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

Over the period from 1992 to 2007, the level of specialization/diversification, as measured by HI, has not changed much for the average Saudi urban system. The urban

system as a whole, has 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. Table 3 highlights the extent to which specific urban places are becoming more diversified or specialized over the period of 1992 to 2007.

In 1992, five out of 19 (26%) Saudi urban economies were classified as most diversified urban areas. Yanbu was the most diversified urban economies with HI account of 0.15; followed by Jeddah and Riyadh with 0.19 each; and Dammam and Qassim with HI equal to 0.20, respectively. It is interesting to note that these five urban places account for about 72% of the total workforce of the Saudi urban system. All other urban places, however, were found to be within the range of (0.21 HI 0.5) and none of the 19 Saudi urban places showed more specialized economies during this 1992 period.

The Saudi urban economies, however, significantly changed during the 2007 period. None of the 19 urban areas fell within the range of most diversified economic structures (HI 0.2). Only two urban places, Baha and Jazzan, presented more specialized-oriented economies with HI equal to 0.62 and 0.57 respectively. These two urban places account for only 2% of the total workforce of the Saudi urban system in 2007. The rest of urban places were found to be within the range of 0.21 HI 0.5 of average Saudi urban system (see Appendix, Table 1A).

Moving on to a cross-sectoral comparison across urban economic sectors (9 aggregation sectors), Table 4 shows that across all industrial sectors, five sectors (Manufacturing; Construction; Trade and Hotels; Agriculture and Fishing; and Community and Social Services) remained within the range of most diversified sectors over the 1992 and 2007 period of analysis. These five sectors account for approximately 81% in 1992 and almost 90% of the total sectoral employment in Saudi urban economies in 2007.

It is interesting to note that among other urban economic sectors, Mining and Petroleum is the only sector that shows more specialized sector with HI of 0.78 in 1992 and 0.75 in 2007. This sector accounts for 5% in 1992 and about 3% of the total sectoral employment in 2007 (see Appendix, Table 2A). Transportation and Communication, as well as Financial and Real Estate, remain in the same position within the range of 0.21 HI 0.5 of the average Saudi urban economic sectors. The only exception is in the Electricity sector. Electricity moved from most diversified sector with HI of 0.15 in 1992 to average economic sector with HI of 0.28 in 2007.

Table 3: HI of Specialization/Diversification of the Saudi Urban System: Inter-Urban Comparison, 1992 and 2007

Urban System	HI		Change in HI (%)
	1992	2007	
Riyadh	0.19	0.22	15.8
Qassim	0.20	0.32	60.0
Alkharj	0.36	0.25	-30.6
Makkah	0.29	0.24	-17.2
Jeddah	0.19	0.35	84.2
Madinah	0.33	0.30	-9.1
Taif	0.26	0.24	-7.7
Yanbu	0.15	0.22	46.7
Dammam	0.20	0.24	20.0
Hassa	0.25	0.27	8.0
Jubail	0.22	0.31	40.9
HafrAlbatin	0.26	0.27	3.8
Hail	0.22	0.26	18.2
Tabuk	0.26	0.22	-15.4
Aljouf	0.25	0.28	12.0
Abha	0.26	0.34	30.8
Jazan	0.35	0.57	62.9
Baha	0.38	0.62	63.2
Najran	0.27	0.32	18.5
Saudi Urban System	0.18	0.24	33.3
HI Classification	1992	2007	Urban Areas
Most diversified economies (HI 0.2)	5	0	Yanbu, Jeddah, Riyadh, Dammam, Qassim
Average economies (0.21 HI 0.5)	14	17	All other urban centers
Most specialized economies (HI 0.51)	0	2	Baha, Jazan

Source: Annual Statistical Report (GOSI, 1992 and 2007) – calculated by the author.

Table 4: HI of Specialization/Diversification of Industrial Sectors of the Saudi Urban Economies: Cross-Sectoral Comparison, 1992 and 2007

Sector	HI		(%) HI Change
	1992	2007	
Agriculture and Fishing	0.16	0.19	18.6
Mining and Petroleum	0.78	0.75	-3.1
Manufacturing	0.19	0.18	-4.9
Electricity	0.15	0.28	78.0
Construction	0.18	0.17	-3.3
Trade and Hotels	0.17	0.18	5.1
Transportation and Communication	0.24	0.26	9.1
Financing and Real Estate	0.21	0.25	17.1
Community and Social Services	0.12	0.18	48.1
Saudi Urban Industrial Sectors	0.18	0.24	33.3
	1992	2007	Industrial Sector
Most diversified sectors (HI 0.2)	6	5	Manufacturing, Construction, Trade and Hotels, Agriculture and Fishing, Electricity, Community and Social Services
Average sectors (0.21 HI 0.5)	2	3	Transportation and Communication, Financing and Real Estate, Electricity
Most specialized sectors (HI 0.51)	1	1	Mining and Petroleum

N.B. The HI is derived using the same HI equation. The unit of measurement is employee, 15 year and older employed in the formal industrial sectors during the period 1992 and 2007.

Source: Annual Statistical Report (GOSI, 1992 and 2007) – calculated by the author.

The above analysis of Saudi urban economies reveals the following highlights:

- Firstly, there is no simple trend either towards or away from diversity in Saudi urban economies and the link between city size and level of diversification is not strong. On one hand, review of literature suggests 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. However, this is not the case in the Saudi urban system. The largest cities – Riyadh, Jeddah and Dammam – do not appear to become more diversified-oriented over the 1992 and 2007 period. On the other hand, the reviewed literature suggests that smaller cities tend to be more specialized than larger cities (Glaeser et al., 1993; Porter, 1996; Quigley, 1998; Beckstead and Brown, 2003). To some extent, this is true within the Saudi urban system. Smaller cities such as Baha and Jazzan, tend to be more specialized-oriented over the 2007 period only.

- Secondly, the trend of diversification/specialization within the urban economic sectors illustrates the same points mentioned above, but in a converse way. The larger the size of sector within the city, the tendency is to be more diversified-oriented; the smaller the size of sector within the city, it tends to be more specialized-oriented. Sectors that show larger share of employment within the Saudi urban system witness more diversified nature (e.g. Manufacturing, Construction, Trade and Hotel sectors), while sectors showing smaller share of workforce, witness more specialized nature (e.g. Mining and Petroleum sector).
- Thirdly, the analysis reveals that both specialization and diversification processes of Saudi urban economies have led to employment growth. At certain periods, diversified economy is contributing to city-level employment growth as in the case of Yanbu, Riyadh, Jeddah, Dammam and Qassim in 1992. In others, specialized economy is contributing to city-level employment growth as in the case of Baha and Jazan in 2007. Thus, even if there is a link between initial diversity/speciality and subsequent employment growth, the link between the process of diversification/specialization and concurrent employment growth is not certain.

5. Conclusion and Policy Implications

This objectives of this research are to: (a) Investigate the trend of diversification/specialization of Saudi urban economies during the years 1992 to 2007; (b) Examine whether urban economies with more diversified economic structure tend to grow faster than those with a more specialized structure; and (c) Identify which economic sectors become more diversified or specialized across the Saudi urban system over the same period of analysis.

The findings from the above analysis reveal that the majority of Saudi urban places have not changed their relative economic structure or their level of diversity between 1992 and 2007. This is verified by two results: (a) The stability of the diversity/speciality index over this period for all urban places except for a few urban areas; and (b) The fact that more than 75% of all urban areas remain in the same cluster (i.e. 0.21 HI 0.5) over the 15-year period.

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 Community Services – tend to be more diversified and more spread 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 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 diversity and speciality 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 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.

References

- Alankary, K. M. and S. Elbushra. (1989). Urban and Rural Profiles in Saudi Arabia. Berlin, Germany: Gebruder-Brontraeger.
- Alhathloul, S. and N. Edadan. (1995). Urban Development in Saudi Arabia: Challenges and Opportunities. Riyadh, Saudi Arabia: Dar Al-Salam Publications.
- Attaran, M. (1986). Industrial Diversity and Economic Performance in US Areas. Annals of Regional Science 20: 44-54.
- Beckstead, D. and M. Brown. (2003). From Labrador to Toronto: The Industrial Diversity of Canadian Cities: 1992-2002. Statistics Canada Micro-economic Analysis Division, Paper no. 11-624-MIE.003, Ministry of Industry, Ottawa, Canada.
- Coffey, W and R. Shearmur. (1996). Employment Growth and Change in the Canadian Urban System, 1971-1994. Canadian Policy Research Network, Ottawa, Canada.
- Dewhurst, J. and P. McCann. (2002). A comparison of Measures of Industrial Specialization for Travel-to-Work Areas in Great Britain, 1981-1997. Regional Studies 36(5): 541-551.
- General Organization for Social Insurance. (1992). Annual Statistical Report_GOSI, Riyadh, Saudi Arabia.
- _____. (2007). Annual Statistical Report_GOSI, Riyadh, Saudi Arabia.
- Glaeser, E., H. Kallal, J. Scheinkman and A. Shleifer. (1992). Growth in cities. Journal of Political Economy 100(6): 1126-1152.
- Hansen, N. (2001). Are Very Large Cities Successful? Searching for Dynamic Externalities Versus Evidence from Population Movements. International Regional Science Journal 24(3): 344-359.
- Jackson, R.W. (1984). An Evaluation of Alternative Measures of Regional Industrial Diversification. Regional Studies 18: 103-112.
- Jacobs, J. (1969). The Economy of Cities. New York: Vintage.
- Malizia, E.E. and S. Ke. (1993). The Influence of Economic Diversity on Unemployment and Stability. Journal of Regional Science 33: 221-235.
- Ministry of Municipal and Rural Affairs. (2000). National Spatial Strategy for Saudi Arabia: An Overview. Ministry of Municipal and Rural Affairs (MOMRA), Riyadh, Saudi Arabia.
- Ministry of Planning. (1995). Sixth Development Plan (1995-2000). Riyadh, Saudi Arabia :Ministry of Planning (MOP) Press.
- O'Donoghue, D. (2000). Some Evidence for the Convergence of Employment Structures in the British Urban System from 1978 to 1991. Regional Studies 34(2): 159-167.

_____ and J. Townshend. (2005). Diversification, Specialization, Convergence and Divergence of Sectoral Employment Structures in the British Urban System, (1991–2001). Regional Studies 39: 585–601.

Porter, M. (1990). The Competitive Advantage of Nations. New York: Free Press.

_____. (1996). Competitive Advantage, Agglomeration Economies and Regional Policy. International Regional Science Review 19(1 and 2): 85–94 and 93–94, respectively.

Quigley, J. (1998). Urban Diversity and Economic Growth. Journal of Economic Perspectives 12: 127–138.

Shearmur R. and M. Polèse. (2004). Diversity and Employment Growth in Canada, 1971–2001: Speciality, Diversity and Restructuring. Institut National de la Recherche Scientifique (INRS) Urbanisation, Culture et Société, Montreal, Canada.

Siegel, P.B., J. Alwang and T.G. Johnson. (1995). Regional Economic Diversity and Diversification. Growth and Change 26: 261–284.

Appendix

**Table 1A: Employment Changes and Levels of Diversification/Specialization
of the Saudi Urban System: Inter-Urban Comparison, 1992 and 2007**

Urban System	Employment (thousand)		Change in % Employment	HI	
	1992	2007		1992	2007
Riyadh	273.9	995.4	263	0.19	0.22
Dammam	294.8	696.5	136	0.20	0.24
Jeddah	194.4	559.8	181	0.19	0.35
Makkah	51.6	128.7	149	0.29	0.24
Jubail	42.1	89.6	113	0.22	0.31
Madinah	41.7	98.7	136	0.33	0.30
Abha	40.3	122.1	203	0.26	0.34
Taif	32.0	56.7	77	0.26	0.24
Hassa	31.8	96.5	204	0.25	0.27
Qassim	27.8	143.0	415	0.20	0.32
Tabuk	23.3	47.2	103	0.26	0.22
Yanbu	19.2	45.6	137	0.15	0.22
Jazan	13.1	41.9	219	0.35	0.57
Hail	7.9	44.8	464	0.22	0.26
Najran	7.5	31.3	315	0.27	0.32
Baha	7.3	33.5	360	0.38	0.62
Alkharj	7.2	36.1	401	0.36	0.25
HafrAlbatin	7.1	31.1	338	0.26	0.27
Aljouf	6.6	26.4	303	0.25	0.28
SaudiUrban System	1134.5	3324.9	193	0.18	0.24

Source: Annual Statistical Report (GOSI, 1992, 2007) - calculated by the author.

Table 2A: Employment Changes and Levels of Diversification/Specialization of Employment Sectors in Saudi Urban Economies: Cross-Sectoral Comparison, 1992 and 2007

Economic Sectors	Employment (thousand)		Change in % Employment	HI	
	1992	2007		1992	2007
Construction	319.0	1043.7	227	0.18	0.17
Trade and Hotels	277.5	1105.6	347	0.17	0.18
Community and Social Services	216.0	415.1	92	0.12	0.18
Manufacturing	126.8	362.9	186	0.19	0.18
Mining and Petroleum	61.9	85.0	37	0.78	0.75
Transportation and Communication	57.2	88.4	55	0.24	0.26
Financing and Real Estate	53.6	121.8	127	0.21	0.25
Electricity	40.1	58.6	46	0.15	0.28
Agriculture and Fishing	12.5	43.8	250	0.16	0.19
Saudi Urban Economic Sectors	1134.5	3324.9	193	0.18	0.24

Source: Annual Statistical Report (GOSI, 1992, 2007) - calculated by the author.