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Assessing Urban Competitiveness in Context of Knowledge Economy:
A Comparative Study on East Asian Metropolises

Topic and Research Question

Today, more than half of the world's population live in cities (EURAMET 2013). Over the past few decades, particularly, the world had witnessed the rise of the massive metropolises, which are increasingly transforming into regional or even global economic, technological and residential centres. The economic importance of metropolises is apparent and enormous in today's world. 600 major urban centres worldwide contributed over 60 percent of the global total GDP, with only 20 percent of the total population (Dobbs et al 2011). The last few decades have also witnessed tremendous changes in the worldwide process of economic development, when 'knowledge' has become central (United Nations 2002). In East Asia, after achieving rapid economic growth by developing traditional industries since the 1950s, building knowledge-based economies seems to be the optimal choice to sustain long-run employment and growth. And East Asian metropolises play a vital role in this regard, as these metropolises accommodate the most developed economic and technological factors, which enable better 'knowledge creation' and research-market linkages. This paper therefore aims to answer this research question: How do East Asian metropolises (Tokyo, Seoul, Beijing, Shanghai and Hong Kong) compare regarding urban competitiveness, in context of knowledge economy?

State of the Art

Regional Competitiveness

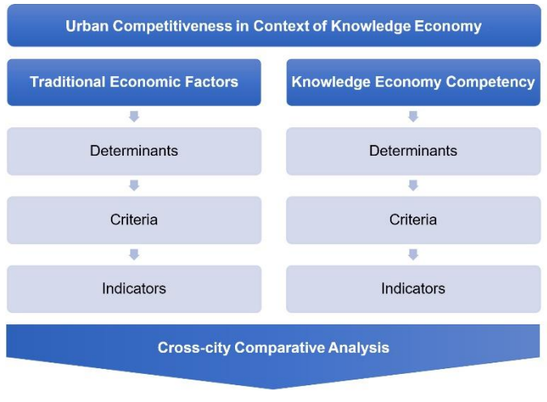
The World Economic Forum used a comprehensive set of indicators which attribute to the three major categories of 'basic requirements', 'efficiency enhancers', and 'innovation and sophistication factors', to assess the competitiveness of a specific country (WEF 2007). Peter Karl Kresl (1995), rather than focusing on national competitiveness, proposed the 'economic determinants of urban competitiveness' that investigate into a city's 'factors of production', 'infrastructure', 'location', 'economic structure' and 'urban amenities'. Iain Begg (1999), from another angle, believed that urban performance is interconnected with 'standard of living', the 'ultimate target variable', via the combination of 'productivity' and 'employment rate', the two variables at the output side which generate income.

Knowledge Economy

As per OECD's methodology, five principal determinants are accounted for assessing a knowledge-based economy, explicitly 'knowledge inputs', 'knowledge stocks and flows', 'knowledge outputs', 'knowledge networks' and 'knowledge and learning' (OECD 1996). The APEC, on the other hand, grounded its methodology for evaluating a knowledge economy upon analysing the four key dimensions of the development of such an economy, respectively 'innovation system', 'human resource development', 'ICT infrastructure' and 'business environment' (APEC Economic Committee 2000). The analytical foundation of the World Bank's Knowledge Assessment Methodology lies on the so-called 'Knowledge Economy Framework' that incorporates the four 'pillars' of a knowledge economy, specifically an 'educated and skilled labour force', an 'effective innovation system', an 'adequate information infrastructure' and a 'conductive economic and institutional regime' (Chen and Dahlman 2005).

Methodology and Approach

The definitions and analytical framework employed by this paper are fundamentally grounded upon Kresl's 'economic determinants of urban competitiveness' and the World Bank's 'Knowledge Assessment Methodology'. Modifications are made to the original frameworks, aiming not only to encompass latest changes of economic and technological contexts, but also to fit the regional characteristics of East Asian metropolises. The analytical framework of this paper investigates into the two major aspects of urban competitiveness in context of knowledge economy, respectively 'traditional economic factors' and 'knowledge economy competency', which encompass altogether 9 determinants, 27 criteria and 27 corresponding numerical indicators. The general approach for empirical analysis of this paper is designed as illustrated below.



Main Facts

Traditional Economic Factors of Urban Competitiveness

	Tokyo	Seoul	Beijing	Shanghai	Hong Kong
Factors of Production	1.00	0.80	0.78	0.60	1.17
Infrastructure	1.00	0.89	0.73	0.63	0.93
Location	1.00	0.63	0.71	1.12	0.96
Economic Structure	1.00	0.56	1.09	1.07	0.59
Urban Amenities	1.00	1.19	1.00	0.90	0.89
Overall	**1.00**	**0.81**	**0.86**	**0.86**	**0.91**

Knowledge Economy Competency

	Tokyo	Seoul	Beijing	Shanghai	Hong Kong
Economic Incentive and Institutional Regime	1.00	1.00	0.77	0.77	1.07
Education and Human Resources	1.00	0.90	1.20	0.88	1.06
Information Infrastructure	1.00	1.00	0.79	0.83	0.92
Innovation System	1.00	0.44	0.68	0.40	0.14
Overall	**1.00**	**0.84**	**0.86**	**0.72**	**0.80**

Urban Competitiveness in Context of Knowledge Economy

	Tokyo	Hong Kong	Beijing	Seoul	Shanghai
Overall	**1.00**	**0.86**	**0.86**	**0.82**	**0.80**

Results

Tokyo, Japan's prime engine for industries, finances and innovations, takes up the first place in the overall assessment with both highest scores in traditional economic competitiveness factors and knowledge economy competency, with overall score (1.00) 14.94% higher than the average (0.87) of all five metropolises. Hong Kong, as renowned free port and financial centre, international gateway to China, ranks second place overall (0.86), thanks to the city's outstanding performances in traditional economic competitiveness factors, although it lagged relatively behind in terms of knowledge economy competency. Beijing, China's cultural, political and economic centre, is tied with Hong Kong for second place (0.86) in the overall comparison. In contrast to Hong Kong, Beijing exceled in knowledge economy competency, whilst it was relatively disadvantaged in respect to traditional economic competitiveness factors. Seoul, South Korea's key driver of economic growth and an important hub for business, technology and creative industries in the Asia pacific region, comes fourth place in the overall assessment, scoring 0.82. As compared with the other four metropolises, Seoul was relatively disadvantaged in respect to traditional economic competitiveness factors. Shanghai, China's long-lasting commercial, logistic and financial centre, is ranked last place in this research with an overall score of 0.80, 8.05% below the average and 20% below that of first place's Tokyo. Shanghai lagged behind in terms of knowledge economy competency, as compared with the others.

The strengths and weaknesses of the five studied East Asian metropolises are rather diverse. A general trend revealed is that though developed metropolises, such as Tokyo, Seoul and Hong Kong, still hold competitive edges in many population-averaged indicators, emerging metropolises like Beijing and Shanghai are quickly catching up in virtually all respects. Some indicators before averaging have already significantly surpassed those of the developed counterparts, thanks to their much larger population bases and economic hinterlands.

References

All references can be found in the full version of the MA thesis available at http://others.univie.ac.at.

About the Author

Yiwen Gu holds a BSc in Accounting and Finance from the London School of Economics and Political Science. As part of the EcoS programme, he spent a year in Waseda University, Tokyo, as an exchange student studying the Japanese culture and economy.

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