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The Belt and Road Initiative and Global Competitiveness

A Longitudinal Developmental Comparison between Economies

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Executive Summary of the Findings

1. The global competitiveness of both the Belt and Road (B&R) regions and non-Belt and Road (non-B&R) regions increased after the Belt and Road Initiative (BRI) was introduced in 2013, but far greater improvements have been seen in the former than in the latter.

2. In the area of Basic Requirements, the B&R regions were affected by the 2008 global financial crisis, but recovered in subsequent years, and improved after the commencement of the BRI.

3. The performance of Efficiency Enhancers improved for both the B&R and non-B&R regions after 2013, but the improvements were far greater in the B&R regions.

4. The non-B&R regions have performed better in the Innovation and Sophistication Factors than the B&R regions. But in the last ten years (2007–2017), the B&R regions made more progress in this domain.

5. With the exception of the two pillars of goods market efficiency and labour market efficiency, in all ten pillars of competitiveness the B&R regions performed better than the non-B&R regions in the most recent years or after 2013.

6. With the exception of the Middle East and North Africa, Southeast Asia, South Asia, Central and West Asia, Central and Eastern Europe all improved in competitiveness after 2013. Central and West Asia and Southeast Asia have made particular progress in the past decade.

The World Economic Forum's Global Competitiveness Index

Twelve policy domains (pillars)

- institutions,
- infrastructure,
- macroeconomic environment,
- health and primary education,
- higher education and training,
- goods market efficiency,
- labour market efficiency,
- financial market development,
- technological readiness,
- market size,
- business sophistication, and
- innovation.

Three principal categories (subindexes)

The pillars are grouped into three subindexes:

- Basic Requirements,
- Efficiency Enhancers, and
- Innovation and Sophistication Factors.

Basic Requirements include institutions, infrastructure, macroeconomic environment, and health and primary education.

Efficiency Enhancers improve economic performance. They comprise higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, and market size.

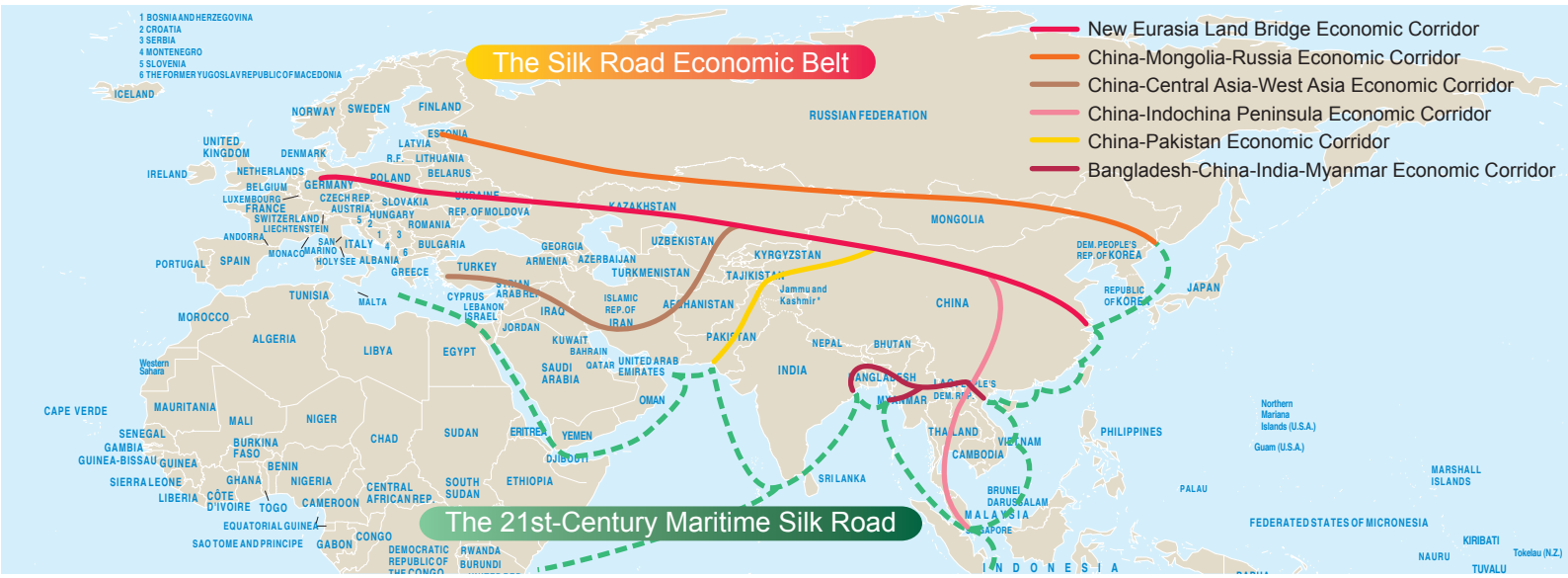
Innovation and Sophistication Factors generate new sources of development momentum for an "innovation-driven economy". They consist of business sophistication and innovation.

Introduction

The Belt and Road Initiative (BRI) was announced by Chinese President Xi Jinping in 2013. The goals of this initiative are to promote regional connectivity, economic cooperation, cultural exchanges, and mutual learning among regions or countries through the construction of the Silk Road Economic Belt and the 21st-Century Maritime Silk Road (National Development and Reform Commission et al., 2015). The fifth anniversary of this grand initiative was celebrated in 2018.

From the first day that the BRI was proposed, the views about it have been mixed. Some regard it as a economic-political-cultural threat and challenge (*Financial Times*, 2017; Mardell, 2017); others see it as offering multidimensional opportunities for development to achieve common or mutual prosperity (*China Daily*, 2018; Liu and Dunford, 2016). Although there is no dearth of reports and analyses from different views and perspectives to address the background and strategic considerations behind the initiative (Cai, 2017; Deloitte, 2018), few objective evaluations have been made of the outcomes, impacts, problems, or ways of improving the initiative by finding better ways of seizing opportunities and reducing risks (Hillman, 2018; Li and Schmerer, 2017).

According to the latest report by the World Bank (2019), the BRI could substantially improve trade and foreign investment and reduce poverty in participating economies through well-managed transport infrastructure projects. The World Bank (2019:9) has estimated that



Sources: Adapted from the HKTDC Research (http://china-trade-research.hktdc.com/business-news/article/One-Belt-One-Road/The-Belt-and-Road-Initiative/obor/en/1/1X3CGF6L/1X0A36B7.htm) and the United Nations (https://www.un.org/Depts/Cartographic/map/profile/world.pdf).

Belt and Road Initiative

A proposal to establish six international development corridors under the BRI has been put forward:

- New Eurasia Land Bridge Economic Corridor,
- China-Mongolia-Russia Economic Corridor,
- China-Central Asia-West Asia Economic Corridor,
- China-Indochina Peninsula Economic Corridor,
- China-Pakistan Economic Corridor, and
- Bangladesh-China-India-Myanmar Economic Corridor.

Five key areas of cooperation are envisioned under the BRI (Figure 1):

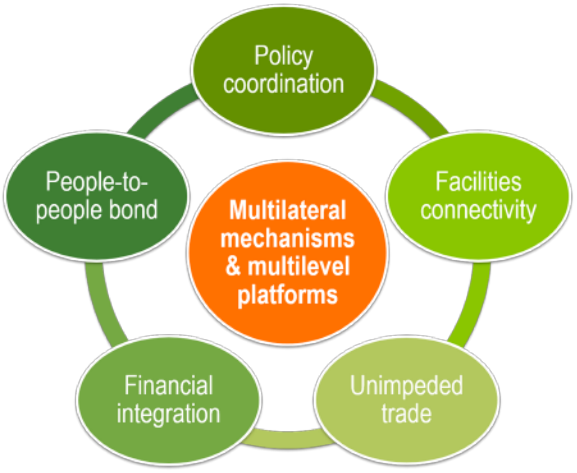
- policy coordination,
- facilities connectivity,
- unimpeded trade,
- financial integration, and
- people-to-people bond.

Such cooperation is based on the following principles:

- peaceful coexistence,
- openness to cooperation,
- harmony and inclusivity,
- respect for market forces, and
- mutual benefit.

By the end of August 2019, China had signed 195 BRI cooperation agreements with 136 countries and 30 international organizations. The trade in goods between China and regions and countries along the B&R amounted to more than six trillion US dollars (Belt and Road Portal, 2019a, 2019b). Italy became the first G7 country to sign up for the BRI. The Asian Infrastructure Investment Bank (AIIB), the financial platform for the BRI, reached 100 approved members.

Figure 1: Cooperation priorities of the BRI



trade would not only grow between 2.8% and 9.7% for participating economies, but would also grow between 1.7% and 6.2% for the world as a whole. The report also anticipated that participating economies, especially low-income countries, could see a significant increase in foreign direct investment due to new transport links. BRI transport projects could also help lift 39.6 million people from proverty, i.e., those earn less than PPP$3.20 a day.

If these estimates are correct, the BRI could increase the global competitiveness of participating economies by providing access to improved rail links and ports. As this initiative has been pushed forward, the construction of infrastructure, the free flow of economic factors, and the allocation of resources and integration of markets could be all enhanced. Therefore, the expectation is that the multidimensional potential of the Belt and Road regions (B&R regions) will gradually be realized. This report uses the Global Competitiveness Index (GCI) to evaluate economic performance in the B&R regions in comparison to that of non-Belt and Road regions (non-B&R regions). Such a comparison could illustrate the possible contribution from the BRI.

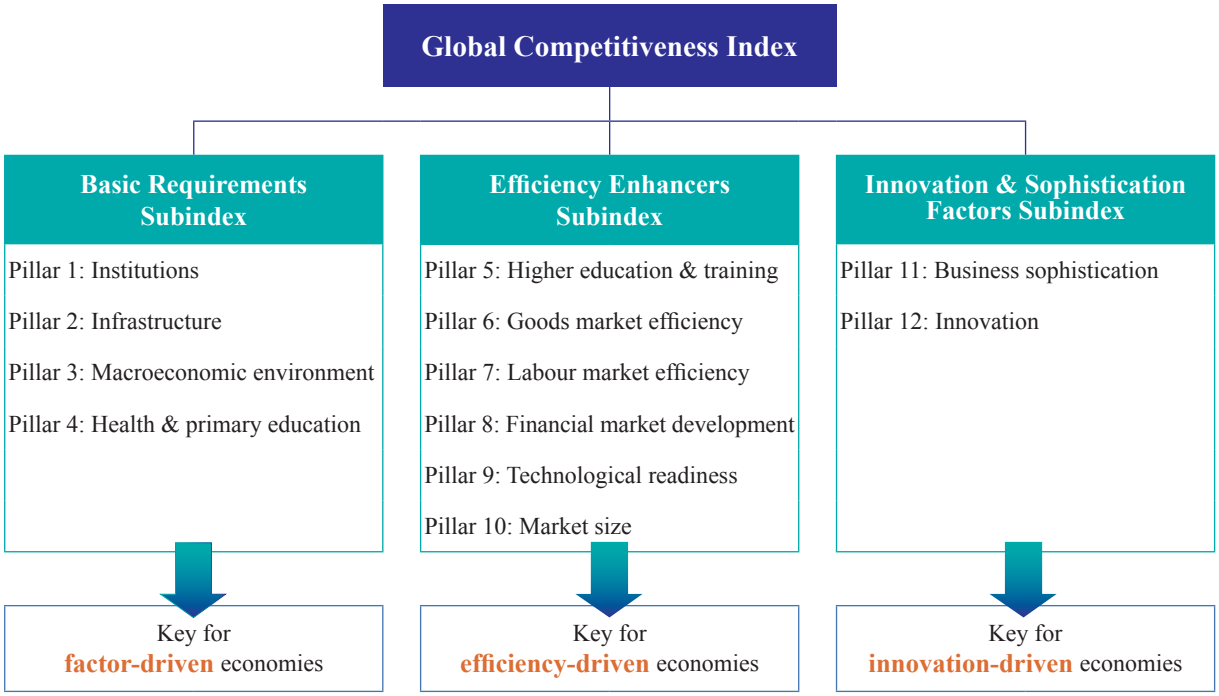
A Brief Introduction to the Global Competitiveness Index

Harking back to Smith (1776) and Keynes (1936), many scholars and policy makers have regarded perfect competition, profit maximization, free markets, investment, capital accumulation, regional integration, and international trade as fundamental to boosting economic competitiveness (Armstrong and Taylor, 2000; Barro and Sala-i-Martin, 1995; Friedman, 2006; Krugman, 1995; Rostow, 1960; Siudek and Zawojska, 2014; Solow, 2000). Porter (1979, 1985, 1990) also considered competitiveness as a function of various factors, such as institutions, markets, and policies.

The World Economic Forum has published *The Global Competitiveness Report* annually since 1979. The GCI, developed by Sala-i-Martin and Artadi (2004), was first presented in *The Global Competitiveness Report 2004–2005*. As this index includes a more comprehensive set of factors that significantly influence an economy's growth performance than previous indices, e.g., the Growth Competitiveness Index (McArthur and Sachs, 2002) and the Business Competitiveness Index (Porter, 2004), it quickly became internationally influential.

Competitiveness is defined as "the set of institutions, policies, and factors that determine the level of productivity of a country" (Schwab, 2017:317). Performance on the GCI 4.0 "explains over 80% of the variation in income levels and 70% of the variation in long-term growth across countries and economies" (Schwab, 2018:2).

Figure 2: The GCI framework



Source: Adapted from Schwab (2017:12).

When the GCI was launched in 2004, 104 countries or territories were included in the list for evaluation. In subsequent years, this number kept changing, but the general trend was towards a gradual increase. For instance, in 2006 and 2008, the numbers rose to 125 and 134; and in 2010, 2012, and 2013 to 139, 144, and 148.

Several features can be summarized from the GCI: (1) If counted according to GDP, in 2017 the selected 137 countries or territories comprised 98% of the world's economy (Schwab, 2017:12). (2) As expected, developed economies mostly topped the list and developing economies ranked at the bottom. (3) In recent years, the growth momentum in European and North American economies has been weakening while in developing economies in Asia, Africa, and Latin America it has been strengthening (*The Global Competitiveness Report*, various years).

Figure 3: The GCI 2017–2018 rankings

	Economy	Score[1]	Trend[2]
1	Switzerland	5.86	
2	United States	5.85	
3	Singapore	5.71	
4	Netherlands	5.66	
5	Germany	5.65	
6	Hong Kong SAR	5.53	
7	Sweden	5.52	
8	United Kingdom	5.51	
9	Japan	5.49	
10	Finland	5.49	
11	Norway	5.40	
12	Denmark	5.39	
13	New Zealand	5.37	
14	Canada	5.35	
15	Taiwan, China	5.33	
16	Israel	5.31	
17	United Arab Emirates	5.30	
18	Austria	5.25	
19	Luxembourg	5.23	
20	Belgium	5.23	
21	Australia	5.19	
22	France	5.18	
23	Malaysia	5.17	
24	Ireland	5.16	
25	Qatar	5.11	
26	Korea, Rep.	5.07	
27	China	5.00	
28	Iceland	4.99	
29	Estonia	4.85	
30	Saudi Arabia	4.83	
31	Czech Republic	4.77	
32	Thailand	4.72	
33	Chile	4.71	
34	Spain	4.70	
35	Azerbaijan	4.69	
36	Indonesia	4.68	
37	Malta	4.65	
38	Russian Federation	4.64	
39	Poland	4.59	
40	India	4.59	
41	Lithuania	4.58	
42	Portugal	4.57	
43	Italy	4.54	
44	Bahrain	4.54	
45	Mauritius	4.52	
46	Brunei Darussalam	4.52	
47	Costa Rica	4.50	
48	Slovenia	4.48	
49	Bulgaria	4.46	
50	Panama	4.44	
51	Mexico	4.44	
52	Kuwait	4.43	
53	Turkey	4.42	
54	Latvia	4.40	
55	Viet Nam	4.36	
56	Philippines	4.35	
57	Kazakhstan	4.35	
58	Rwanda	4.35	
59	Slovak Republic	4.33	
60	Hungary	4.33	
61	South Africa	4.32	
62	Oman	4.31	
63	Botswana	4.30	
64	Cyprus	4.30	
65	Jordan	4.30	
66	Colombia	4.29	
67	Georgia	4.28	
68	Romania	4.28	
69	Iran, Islamic Rep.	4.27	
70	Jamaica	4.25	
71	Morocco	4.24	
72	Peru	4.22	
73	Armenia	4.19	
74	Croatia	4.19	
75	Albania	4.18	
76	Uruguay	4.15	
77	Montenegro	4.15	
78	Serbia	4.14	
79	Tajikistan	4.14	
80	Brazil	4.14	
81	Ukraine	4.11	
82	Bhutan	4.10	
83	Trinidad & Tobago	4.09	
84	Guatemala	4.08	
85	Sri Lanka	4.08	
86	Algeria	4.07	
87	Greece	4.02	
88	Nepal	4.02	
89	Moldova	3.99	
90	Namibia	3.99	
91	Kenya	3.98	
92	Argentina	3.95	
93	Nicaragua	3.95	
94	Cambodia	3.93	
95	Tunisia	3.93	
96	Honduras	3.92	
97	Ecuador	3.91	
98	Lao PDR	3.91	
99	Bangladesh	3.91	
100	Egypt	3.90	
101	Mongolia	3.90	
102	Kyrgyz Republic	3.90	
103	Bosnia & Herzegovina	3.87	
104	Dominican Republic	3.87	
105	Lebanon	3.84	
106	Senegal	3.81	
107	Seychelles	3.80	
108	Ethiopia	3.78	
109	El Salvador	3.77	
110	Cape Verde	3.76	
111	Ghana	3.72	
112	Paraguay	3.71	
113	Tanzania	3.71	
114	Uganda	3.70	
115	Pakistan	3.67	
116	Cameroon	3.65	
117	Gambia, The	3.61	
118	Zambia	3.52	
119	Guinea	3.47	
120	Benin	3.47	
121	Madagascar	3.40	
122	Swaziland	3.35	
123	Mali	3.33	
124	Zimbabwe	3.32	
125	Nigeria	3.30	
126	Congo, Democratic Rep.	3.27	
127	Venezuela	3.23	
128	Haiti	3.22	
129	Burundi	3.21	
130	Sierra Leone	3.20	
131	Lesotho	3.20	
132	Malawi	3.11	
133	Mauritania	3.09	
134	Liberia	3.08	
135	Chad	2.99	
136	Mozambique	2.89	
137	Yemen	2.87	

East Asia and Pacific
Eurasia
Europe and North America
Latin America and the Caribbean
Middle East and North Africa
South Asia
Sub-Saharan Africa

B&R regions

Notes: 1. Scale ranges from 1 to 7.
2. Evolution in percentile rank since 2007 or earliest edition available.
Source: Adapted from Schwab (2017:ix).

Data and Method

This report uses longitudinal data on each selected economy since 2007 for in-depth analyses. Comparisons are on three levels. The first level of comparison is the overall rating on competitiveness and on the three domains for both the B&R and non-B&R regions. The second level is the rating for each individual pillar. The third level is to determine differences between the geographical regions. Year-to-year changes are observed from 2007 to 2017.

The BRI is a development strategy for regional integration. It is open to all countries and international and regional organizations. However, in its initial geographical definition, which is narrower in scope, it only includes two parts: the Silk Road Economic Belt and the 21st-Century Maritime Silk Road. The Silk Road Economic Belt covers Central Asia, West Asia, the Middle East, and Continental Europe. The Maritime Silk Road includes the South China Sea, the South Pacific Ocean, and the Indian Ocean and Indian Sub-Continent (National Development and Reform Commission et al., 2015; State Information Center, 2017). Our analysis focuses on these narrower scopes of coverage. It is necessary to note that by the end of August 2019, the Chinese government had signed 195 BRI cooperation agreements with 136 countries and 30 international organizations (Belt and Road Portal, 2019a). In the foreseeable future, more economies may participate in the BRI.

Figure 4: Countries to have signed BRI cooperation agreements

Note: Up to April 2019.
Source: The Economist Intelligence Unit (2019).

Most of the countries or territories in the B&R regions are included in *The Global Competitiveness Report*. Apart from China, they include 11 countries in Southeast Asia, 6 in South Asia, 8 in Central and West Asia, 13 in the Middle East and North Africa, and 19 in Central and Eastern Europe (Table 1). The economies of these places vary greatly: some are well developed, while many others are not. This is a fact that presents both huge challenges and opportunities for promoting international interaction and cooperation. In order to give a fair view, mainland China and Hong Kong are considered "host" economies and thus are not included for comparison.

Table 1: B&R countries included in *The Global Competitiveness Report*

Southeast Asia	South Asia	Central & West Asia	Middle East & North Africa	Central & Eastern Europe
Brunei Darussalam	Bangladesh	Armenia	Bahrain	Albania
Cambodia	Bhutan	Azerbaijan	Egypt	Bosnia & Herzegovina
Indonesia	India	Georgia	Israel	Bulgaria
Lao PDR	Nepal	Iran, Islamic Republic	Jordan	Croatia
Malaysia	Pakistan	Kazakhstan	Kuwait	Czech Republic
Myanmar	Sri Lanka	Kyrgyz Republic	Lebanon	Estonia
Philippines		Mongolia	Oman	Hungary
Singapore		Tajikistan	Qatar	Latvia
Thailand			Saudi Arabia	Lithuania
Timor-Leste			Syria	Moldova
Viet Nam			Turkey	Montenegro
			United Arab Emirates	North Macedonia
			Yemen	Poland
				Romania
				Russian Federation
				Serbia
				Slovak Republic
				Slovenia
				Ukraine

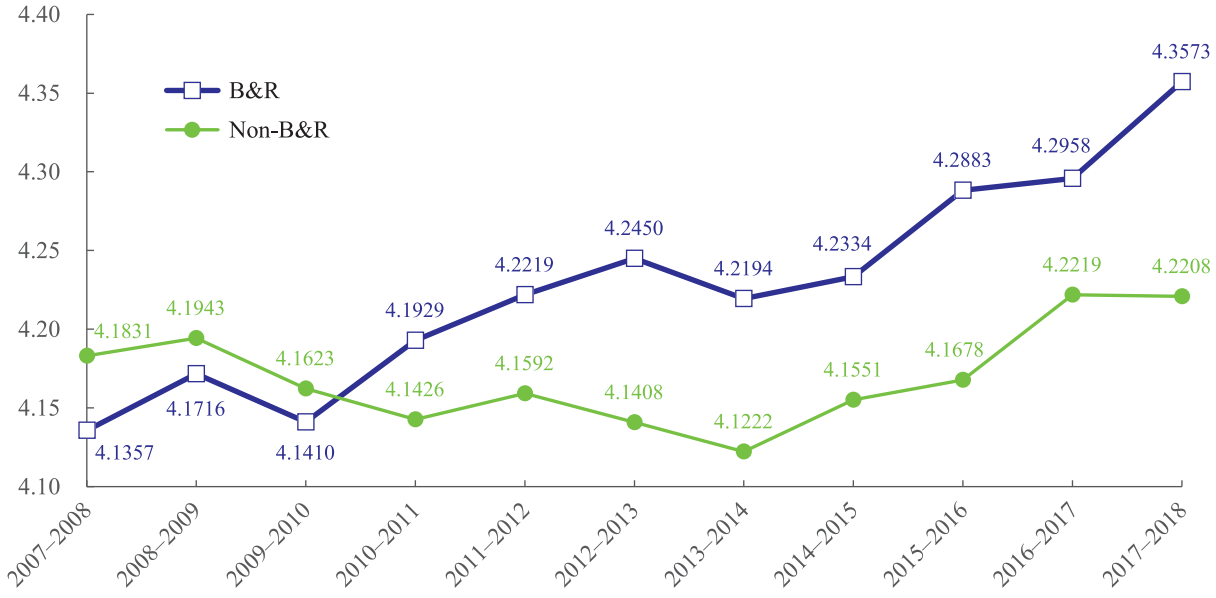
Sources: Adapted from *The Global Competitiveness Report* (various years) and State Information Center (2017).

Overall Competitiveness Comparison

Competitiveness is "the set of institutions, policies, and factors that determine the level of productivity of a country" (Schwab, 2017:317). It is a core driver of socio-economic growth and human development. A change in overall competitiveness could be observed from 2007 to 2017 in both the B&R and non-B&R regions. Before 2010, the average GCI scores for the non-B&R regions were higher than those for the B&R regions. However, after 2009, the average GCI scores for the B&R regions surpassed those for the non-B&R regions and kept rising, whereas the average GCI scores for the non-B&R regions remained almost unchanged. The change in the average GCI score in the past decade for the B&R regions increased by 0.2216 (4.3573-4.1357), or 5.36%, for the non-B&R regions, it only increased by 0.0377 (4.2208-4.1831), or 0.90%.

The "financial tsunami" erupted in the United States in 2008. From 2009 onwards, the competitiveness of the B&R regions kept improving but that of the non-B&R regions kept dropping until 2013—the year that the BRI was announced. Since 2013, the competitiveness of both the B&R and non-B&R regions has gradually increased, but the improvement has been slightly greater in the former. The higher GCI score for the B&R regions clearly implies that their economies can continue to improve more than those of the non-B&R regions in the years to come (Figure 5).

Figure 5: The average GCI scores for the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Domain-specific Comparisons

Economies at different stages of development are competitive in different ways. Less developed economies compete through low-cost production, economies at an intermediate stage of development compete by being efficient, and developed economies compete by being innovative (Snowdon, 2006). Comparisons are made between B&R regions and non-B&R regions in Basic Requirements, Efficiency Enhancers, and Innovation and Sophistication Factors. These domains correspond to the stage of economic development of each economy.

Basic Requirements

The Basic Requirements domain includes four pillars. The GCI assumes that, in the first stage of economic development, an economy is factor-driven. Economies in this stage compete with their factor endowments. Competitiveness at this stage of development depends on well-functioning public and private institutions (pillar 1), well-developed infrastructure (pillar 2), a stable macroeconomic environment (pillar 3), and a healthy workforce that has received at least a basic education (pillar 4) (Schwab, 2017:319).

In 2007, the average score for Basic Requirements in the B&R regions (4.4377) was slightly lower than that in the non-B&R regions (4.4933). The 2008 global financial crisis had a tremendous impact on the non-B&R regions because the average score dropped in 2009, and in subsequent years it was nearly unchanged. In the B&R regions, although the average score for Basic Requirements also decreased in 2009, it bounced back continuously in subsequent years, and rose further after the commencement of the BRI.

In the past decade, the average score for Basic Requirements in the B&R regions increased by 0.2838 (4.7215-4.4377), or 6.40%; while in the non-B&R regions, it increased by 0.0224 (4.5157-4.4933), or 0.50%. In other words, the B&R regions made more improvements in Basic Requirements than did the non-B&R regions. After the commencement of the BRI, a significant contribution in economic dynamism was seen (Figure 6).

Efficiency Enhancers

The Efficiency Enhancers domain includes six pillars. In the second stage of economic development, an economy is efficiency-driven. In this stage, economies compete to develop more efficient processes of production and higher-quality products. Competitiveness is driven by higher education and training (pillar 5), efficient goods markets (pillar 6), well-functioning labour markets (pillar 7), developed financial markets (pillar 8), the ability to harness the benefits of existing technologies (pillar 9), and a large domestic or foreign market (pillar 10) (Schwab, 2017:319).

In 2007, the average score for Efficiency Enhancers in the B&R regions was 3.9614, while in the non-B&R regions it was 4.0417. The latter had a far better score than did the former. In 2009, the score for the B&R regions surpassed that for the non-B&R

regions. From 2010 to 2012, the score for the B&R regions kept increasing, while that for the non-B&R regions remained almost unchanged. From 2013 to 2017, the scores for both the B&R and the non-B&R regions rose, but improved somewhat more in the former than in the latter.

In the past decade, in the B&R regions the change was 0.2712 (4.2326-3.9614), or 6.85%. In the non-B&R regions, the change was 0.0836 (4.1253-4.0417), or 2.07%. Again, the economies in the B&R regions showed more improvement in Efficiency Enhancers than did the economies in the non-B&R regions (Figure 7).

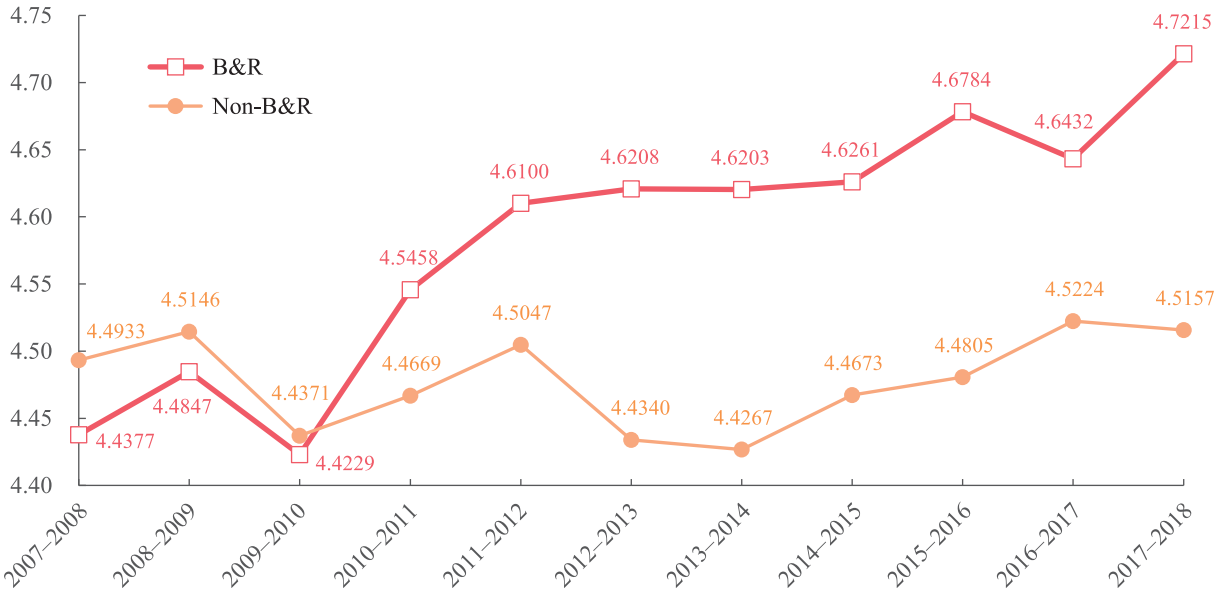
Innovation and Sophistication Factors

The Innovation and Sophistication Factors domain includes two pillars. As economies move into the innovation-driven stage of development, they compete to use the most sophisticated processes of production (pillar 11) and devise new ones (pillar 12) (Schwab, 2017:319).

Countries in the non-B&R regions are mostly developed economies, so they have far higher scores in this domain. In 2007, the average score for Innovation and Sophistication Factors in the B&R regions was 3.6308, and in the non-B&R regions it was 3.8570. The gap in scores between them was large. From 2007 to 2010, the average scores for both regions decreased. From 2011 to 2017, the scores kept increasing, but the improvement seemed to be greater in the B&R regions than in the non-B&R regions.

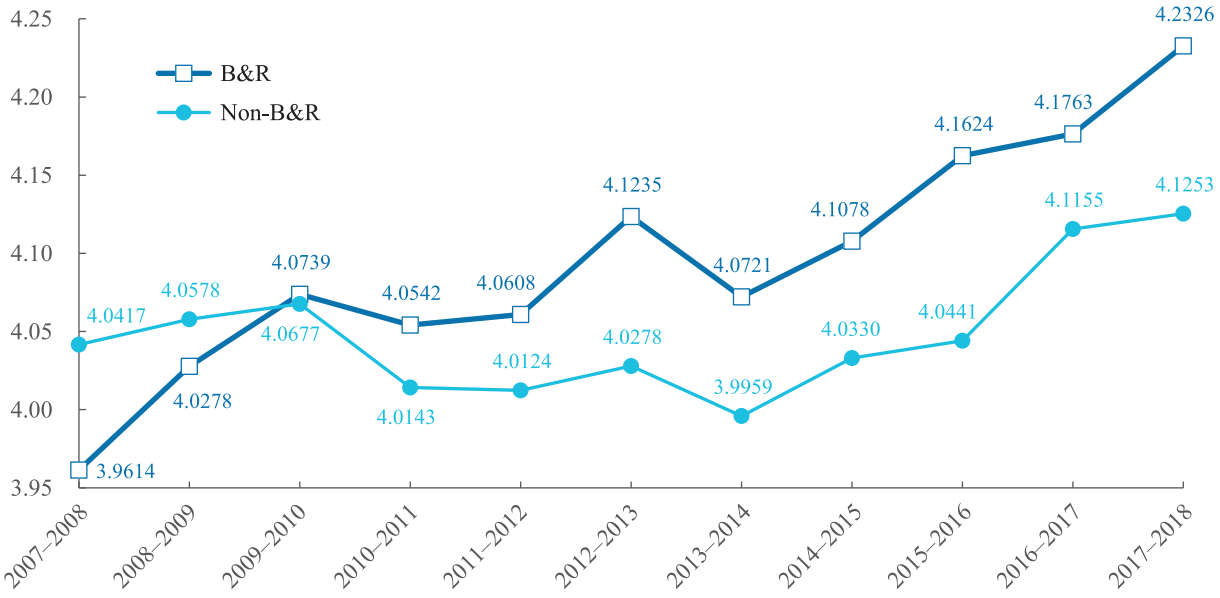
In the past decade, the average score for the B&R regions increased by 0.1117 (3.7425-3.6308), or 3.08%. For the non-B&R regions, it increased by 0.0241 (3.8811-3.8570), or 0.62%. Clearly, even in innovation, although the non-B&R regions had far higher average scores, the B&R regions made more progress (Figure 8).

Figure 6: The average scores for Basic Requirements in the B&R and non-B&R regions, 2007–2017



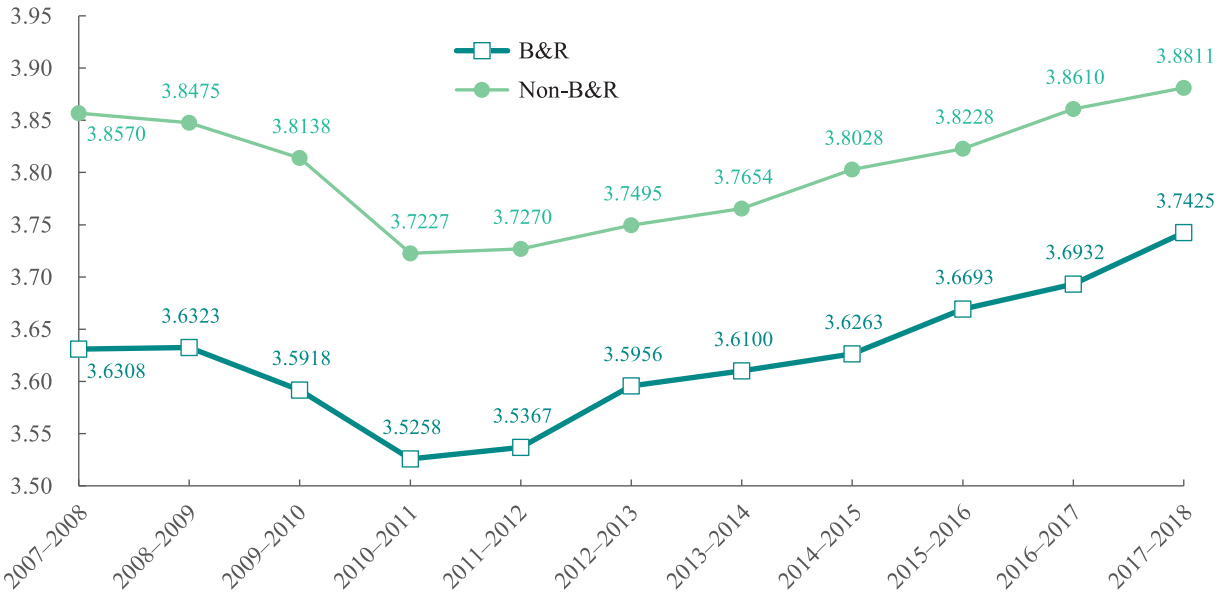
Sources: *The Global Competitiveness Report* (various years).

Figure 7: The average scores for Efficiency Enhancers in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Figure 8: The average scores for Innovation and Sophistication Factors in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Comparisons of Specific Pillars

Year-to-year changes in specific pillars could give a more in-depth outlook on the competitiveness of each region.

Pillar 1: Institutions

Pillar 1 is an assessment of institutions, which is "the efficiency and the behavior of both public and private stakeholders" (Schwab, 2017:317). It measures the quality of the legal and administrative framework, and accounting and reporting standards and transparency.

From 2007 to 2008, the score for the B&R regions increased by 0.0811, while that for the non-B&R regions increased by 0.0197. This difference indicates that there is more room for improvement in the B&R regions than in the non-B&R regions in this pillar. After the financial crisis of 2008, the change in the average scores for both regions plunged to become negative. From 2011 to 2012, the change was positive for the B&R regions, but that for the non-B&R regions remained negative. After 2014, the difference between the two regions increased. The change between 2016 and 2017 for the B&R regions was 0.0226, while that for the non-B&R regions was -0.0444. Clearly, the B&R regions saw a larger degree of improvement than in the non-B&R regions after the implementation of the BRI (Figure 9).

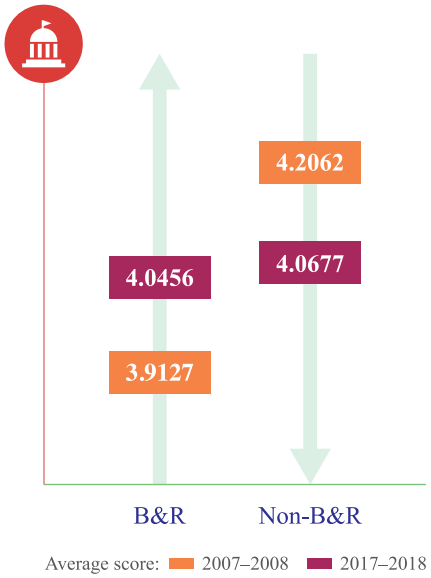
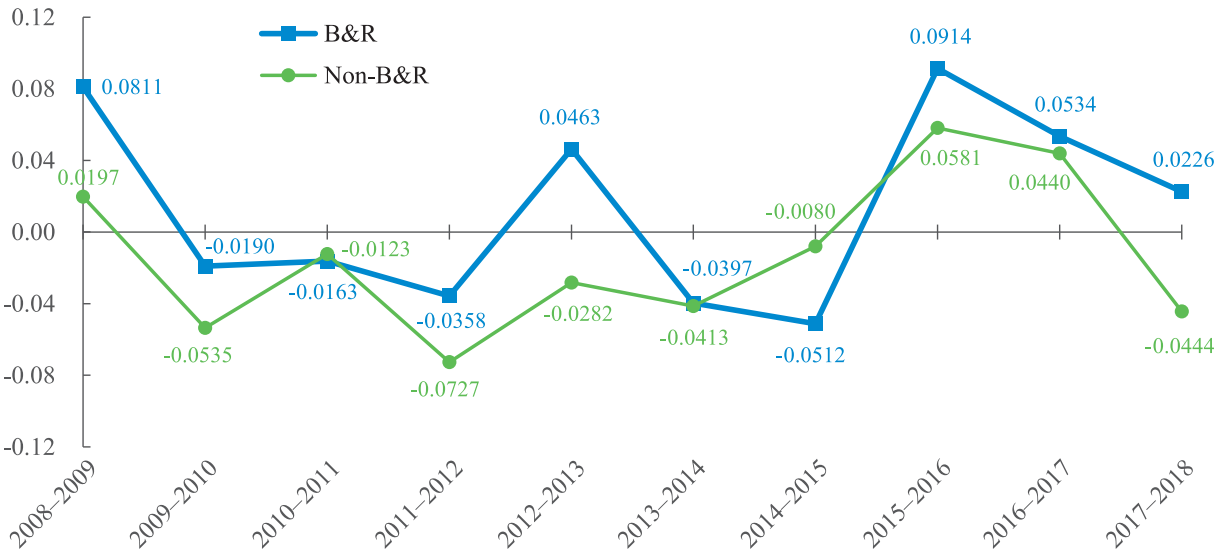


Figure 9: Yearly change in the average scores of the pillar "Institutions" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 2: Infrastructure

Pillar 2 is an assessment of infrastructure, including infrastructure for transportation, electricity supplies, and telecommunications networks.

Comparing 2007 to 2008, the score for the B&R regions increased by 0.0664, while that for the non-B&R regions increased by 0.0127. From 2008 to 2011, the change in the scores for the B&R regions soared, but then declined again. The change in the scores for the non-B&R regions improved at first, but then dropped quickly. The changes after 2011 were all positive for the B&R regions but some were negative for the non-B&R regions. The change between 2016 and 2017 for the B&R regions was 0.1288, while that for the non-B&R regions was 0.0329. A larger degree of improvement was seen in the B&R regions than in the non-B&R regions (Figure 10).

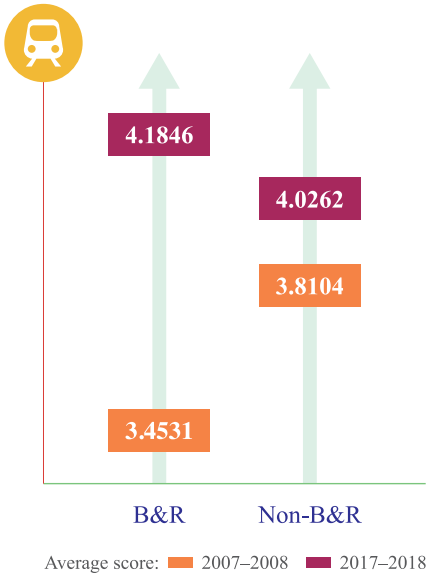
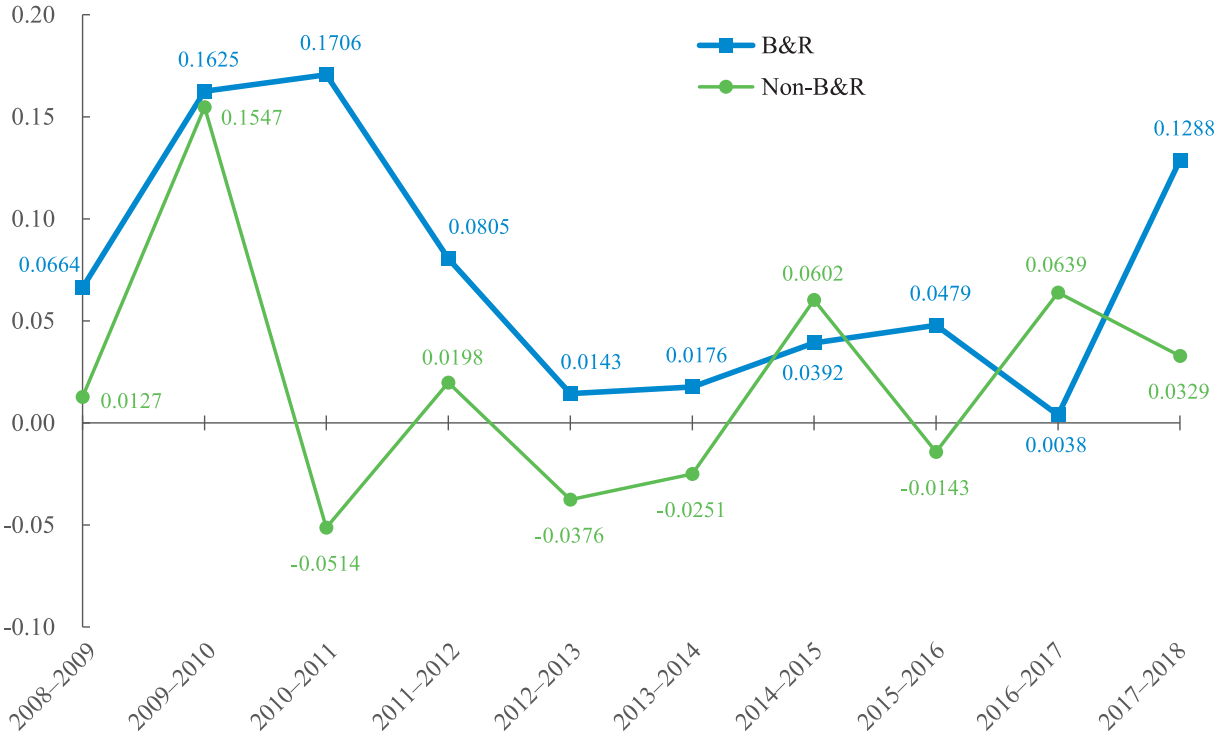


Figure 10: Yearly change in the average scores of the pillar "Infrastructure" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 3: Macroeconomic Environment

Pillar 3 is an assessment of the macroeconomic environment of a place. It measures the stability of the macroeconomic environment for business, which is fundamental for the sustainable growth of an economy.

From 2007 to 2008, the score for the B&R regions increased by 0.0294, while that for the non-B&R regions increased by 0.0564. From 2008 to 2011, there was a large upward change in scores for both the B&R and non-B&R regions. A large decline occurred after 2011, followed by stagnant growth in both regions. However, the change between 2016 and 2017 for the B&R regions was 0.0980, while that for the non-B&R regions was -0.0388. Thus, in the most recent period, a larger degree of improvement was seen in the B&R regions than in the non-B&R regions (Figure 11).

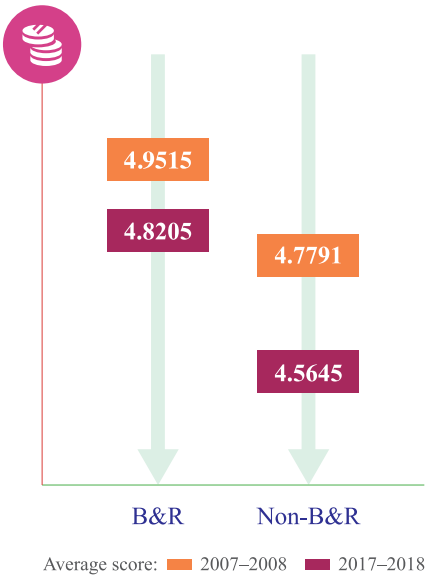
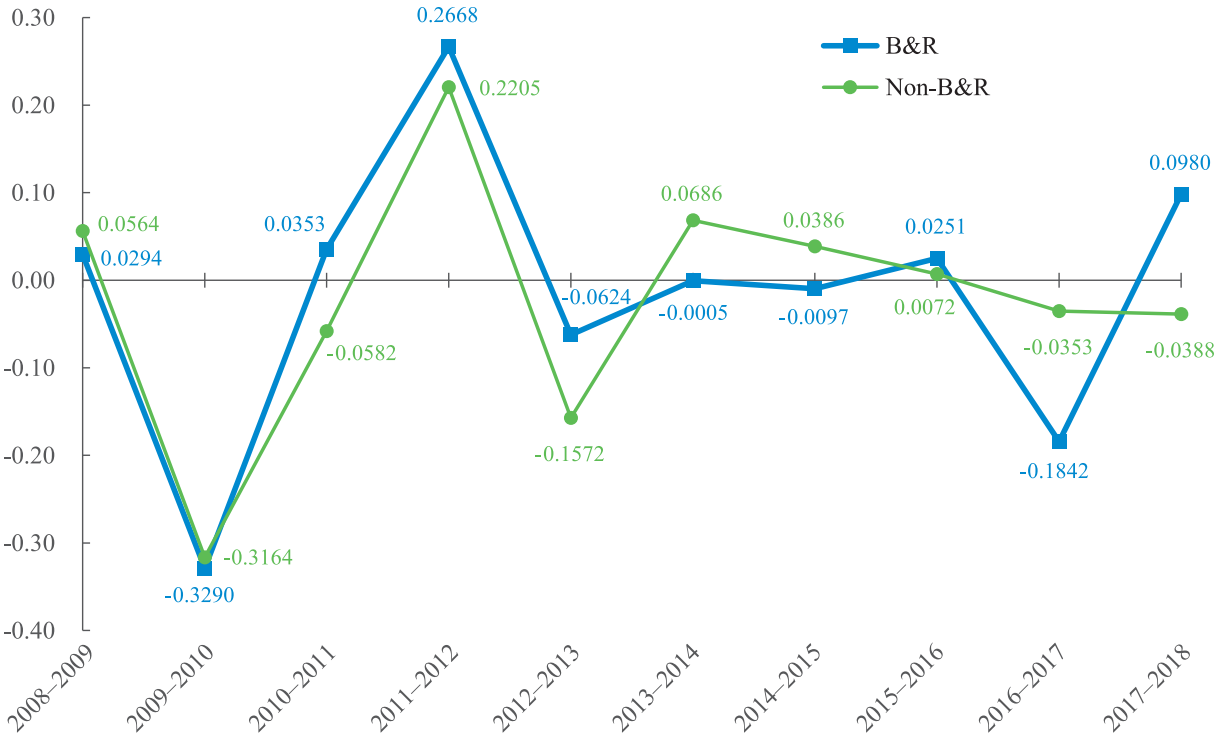


Figure 11: Yearly change in the average scores of the pillar "Macroeconomic Environment" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 4: Health and Primary Education

Pillar 4 is an assessment of health and primary education. It is believed that investment in health and basic education can increase the productivity and efficiency of individual workers.

From 2007 to 2008, the score for the B&R regions increased by 0.0108, while that for the non-B&R regions decreased by 0.0035. This difference indicates that very little change occurred in both the B&R and non-B&R regions in this pillar. From 2008 to 2011, the changes in the scores for both regions all rose quickly but also dropped quickly. After 2011 a stable increase was seen in the B&R regions, in comparison to severe fluctuations in the non-B&R regions. The change between 2016 and 2017 for the B&R regions was 0.0638, while that for the non-B&R regions was 0.0236. Clearly, the B&R regions still showed more improvement than the non-B&R regions in the most recent period (Figure 12).

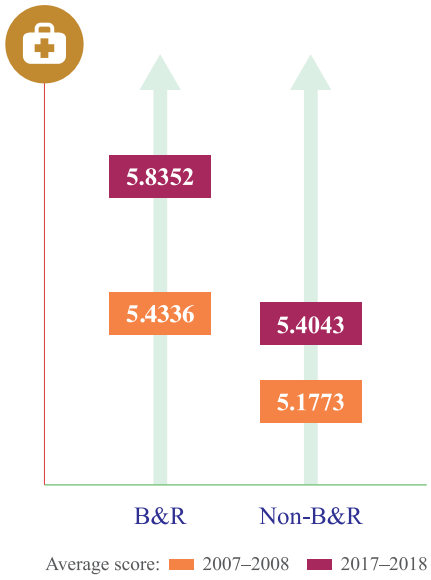
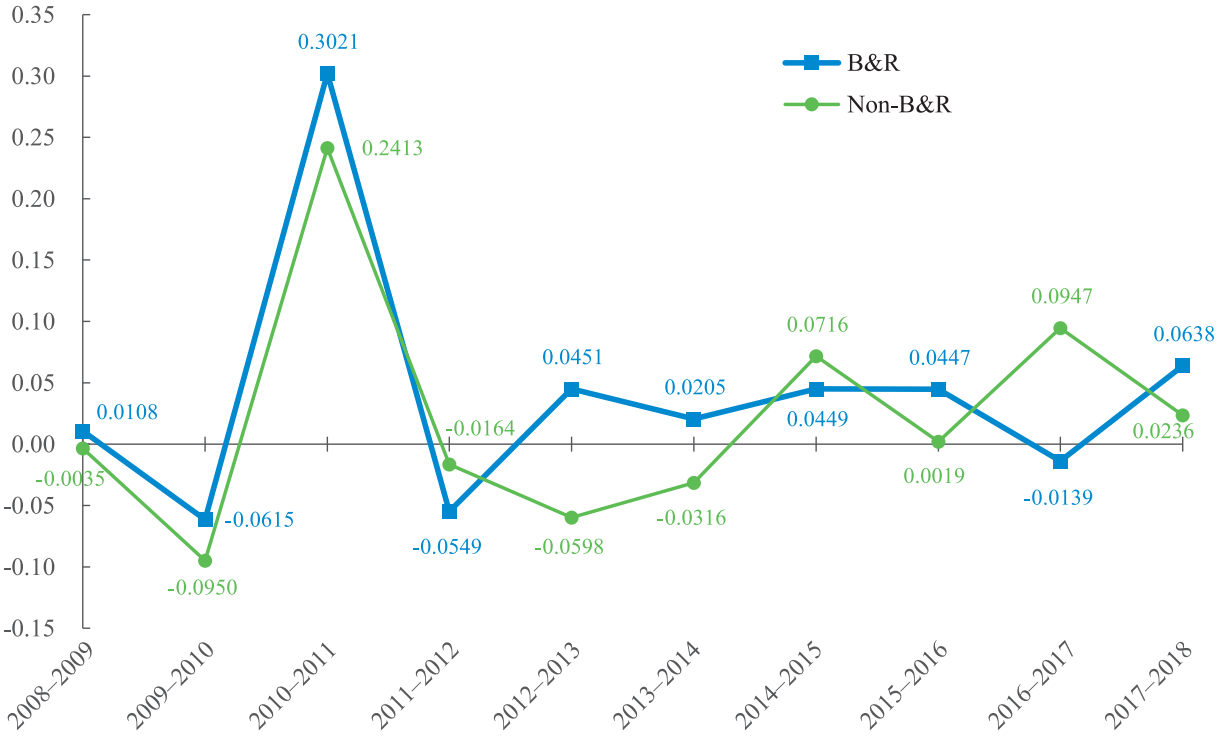


Figure 12: Yearly change in the average scores of the pillar "Health and Primary Education" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 5: Higher Education and Training

Pillar 5 is an assessment of higher education and training. It measures secondary and tertiary enrolment rates, quality of education, and staff training.

From 2007 to 2008, the score for the B&R regions increased by 0.0504, while that for the non-B&R regions increased by 0.0146. From 2008 to 2012, the changes in the scores for both regions were mainly positive, but then dropped to negative in 2013. After 2013, the largest increase in both the BRI and non-B&R regions was in 2014. Afterwards, the change in the scores for the B&R regions was a decline, while that for the non-B&R regions was characterized by severe fluctuations. However, the change between 2016 and 2017 for the B&R regions was 0.0175, while that for the non-B&R regions was -0.0032. The B&R regions were still showing an improvement over the non-B&R regions in the most recent period (Figure 13).

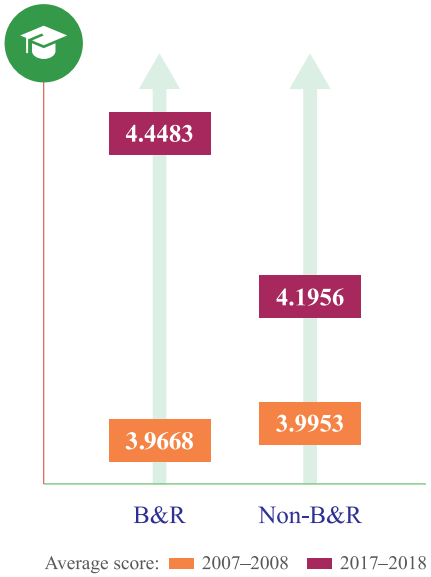
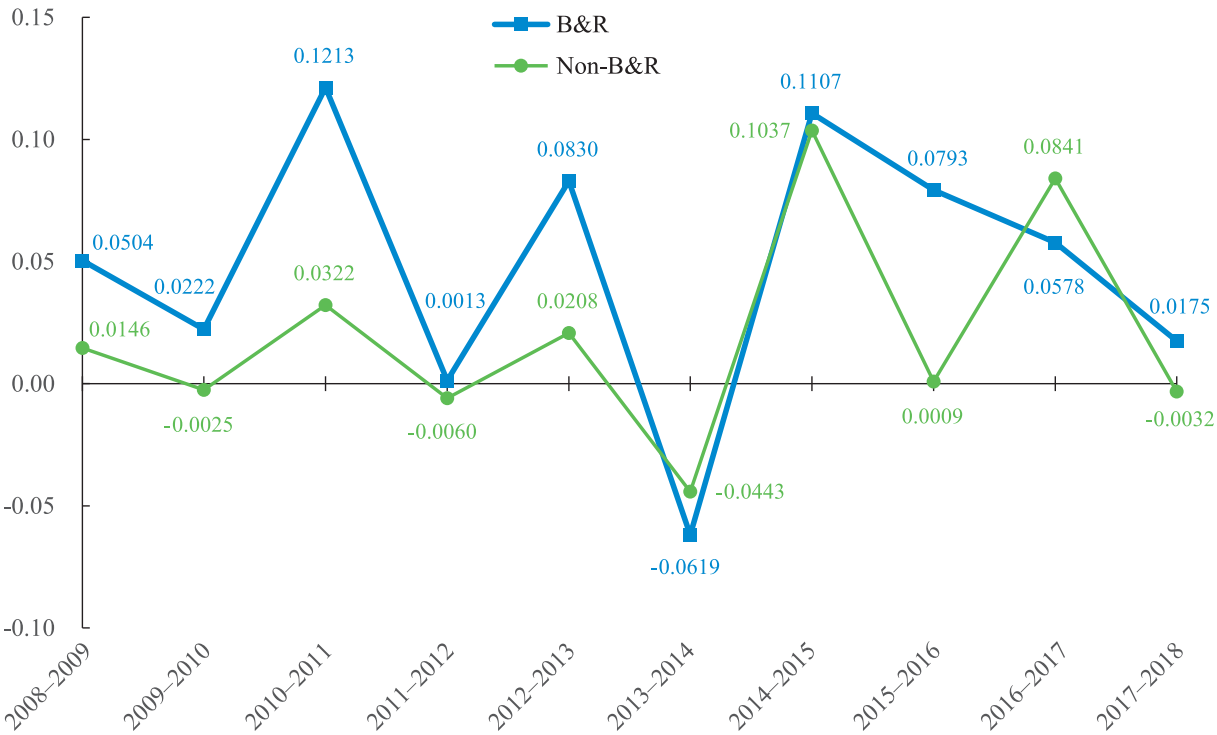


Figure 13: Yearly change in the average scores of the pillar "Higher Education and Training" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 6: Goods Market Efficiency

Pillar 6 is an assessment of the efficiency of the goods market. It measures a right mix of products and services that can be produced and traded given supply-and-demand conditions.

From 2007 to 2008, the score for the B&R regions increased by 0.0251, while that for the non-B&R regions increased by 0.0267. From 2008 to 2010, there was a downward change in the scores for both regions. Afterwards, for both regions the largest increase was in 2014. After that, the changes in the scores for the B&R and non-B&R regions were all in the direction of a decline. The change between 2016 and 2017 for the B&R regions was 0.0020, while that for the non-B&R regions was 0.0070. Although the change was still positive, both the B&R and non-B&R regions did not show much improvement in the most recent period (Figure 14).

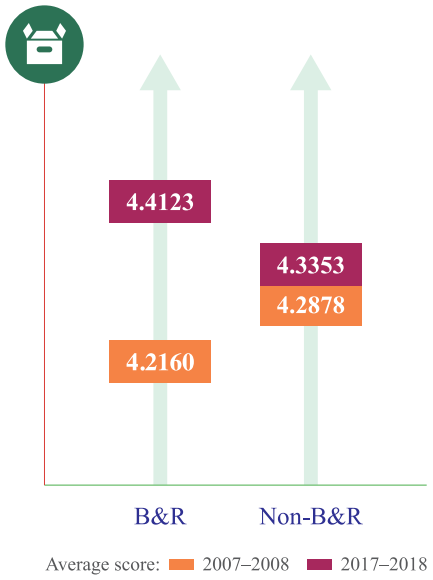
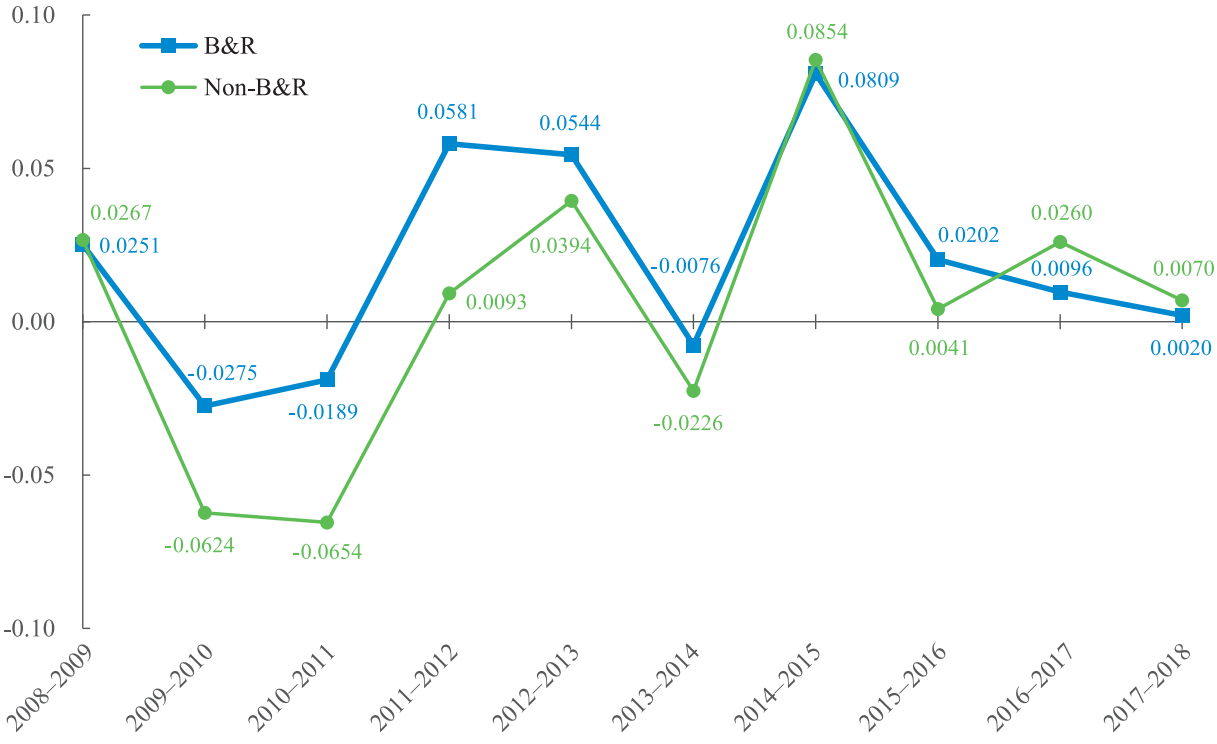


Figure 14: Yearly change in the average scores of the pillar "Goods Market Efficiency" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 7: Labour Market Efficiency

Pillar 7 is an assessment of labour market efficiency. A high score indicates that workers are allocated to the most effective use and provided with incentives to give their best efforts and high labour market flexibility to shift workers from one economic activity to another.

Comparing 2007 to 2008, the score for the B&R regions increased by 0.0458, while that for the non-B&R regions increased by 0.0197. From 2008 to 2014, the change in the scores for both regions was downwards, while that for the B&R regions remained negative. The largest increase in both the B&R and non-B&R regions was in 2015. Afterwards, the change in the scores for both regions was again in the direction of a decline. However, the change between 2016 and 2017 for the B&R regions was -0.0275, while that for the non-B&R regions was -0.0014. No improvements were seen in both the B&R and non-B&R regions in the most recent period (Figure 15).

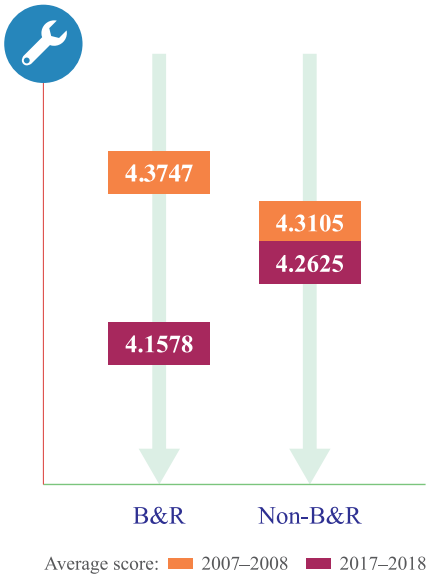
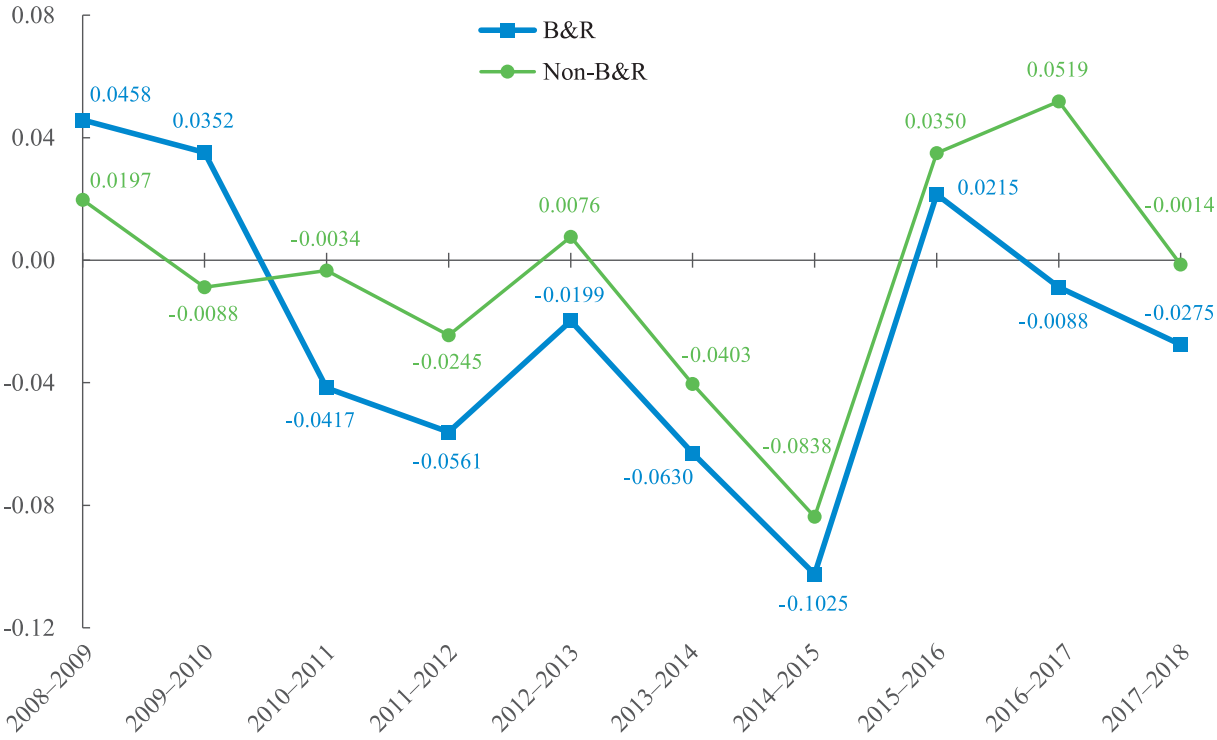


Figure 15: Yearly change in the average scores of the pillar "Labour Market Efficiency" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 8: Financial Market Development

Pillar 8 is an assessment of the development of the financial markets, including sophisticated financial markets, to make capital available for private-sector investment from a sound banking sector, well-regulated securities exchanges, venture capital, and other financial products.

From 2007 to 2008, the score for the B&R regions decreased by 0.0025, while that for the non-B&R regions decreased by 0.0845. This decline in change was larger in the non-B&R regions than in the B&R regions. From 2008 to 2012, the changes in the scores for both regions were all in a downward direction at first, but climbed up later. After 2012, the largest increase in both regions was in 2016. The change between 2016 and 2017 for the B&R regions was 0.0480, while that for the non-B&R regions was -0.0212. Here again, in terms of the change in this pillar, the change in the the B&R regions was more positive than that in the non-B&R regions in the most recent period (Figure 16).

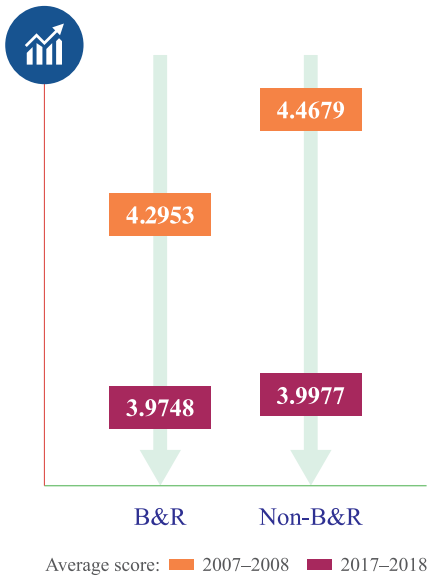
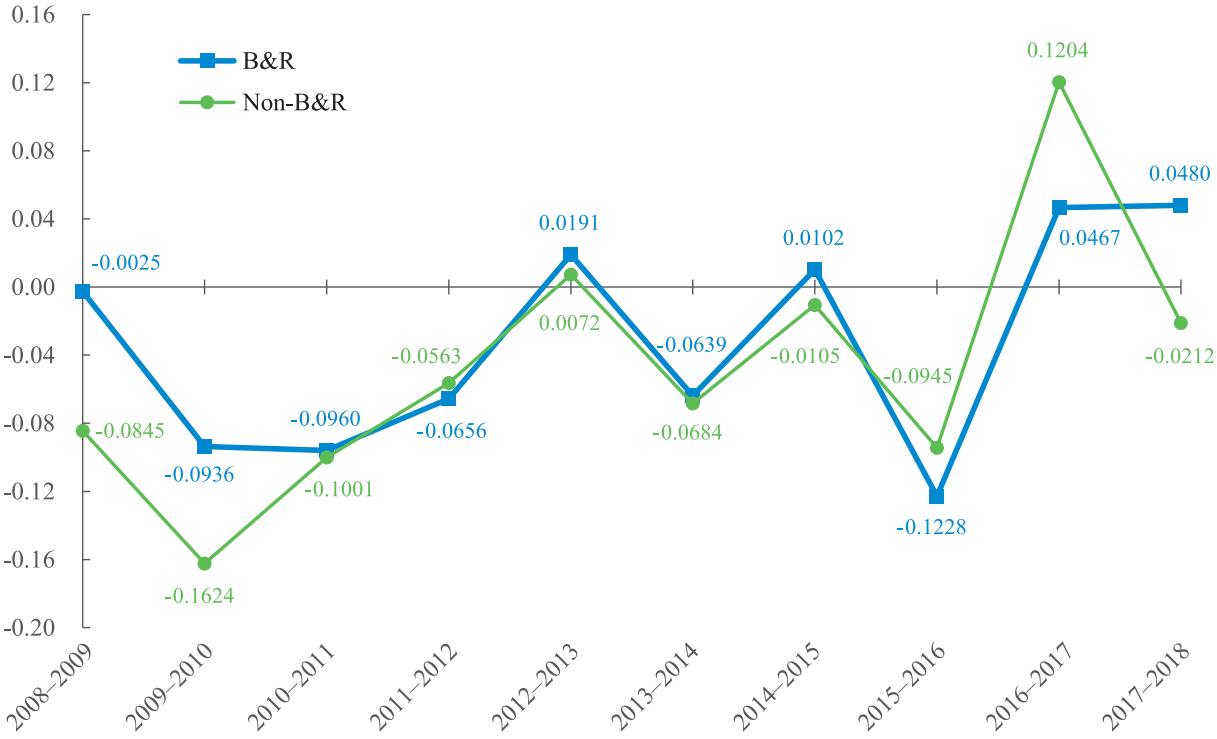


Figure 16: Yearly change in the average scores of the pillar "Financial Market Development" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 9: Technological Readiness

Pillar 9 is an assessment of technological readiness. It measures the ability to adopt existing technologies to enhance the productivity of industries. There is a special emphasis on the capacity to leverage information and communication technologies to enhance innovation and competitiveness.

From 2007 to 2008, the score for the B&R regions increased by 0.1946, while that for the non-B&R regions increased by 0.1009. From 2008 to 2011, the changes in the scores for both regions were all in a downward direction, before reversing course later. After 2011, a large decline in both regions occurred in 2013. Afterwards, the change in the scores for both regions again became positive. The change between 2016 and 2017 for the B&R regions was 0.1925, while that for the non-B&R regions was 0.0411. In terms of the change in this pillar, the B&R regions improved more than the non-B&R regions in the most recent period (Figure 17).

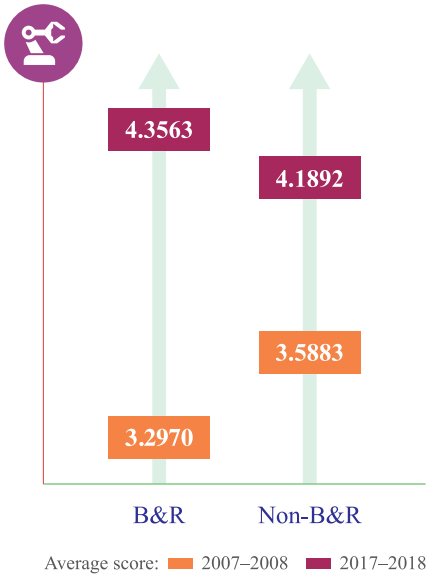
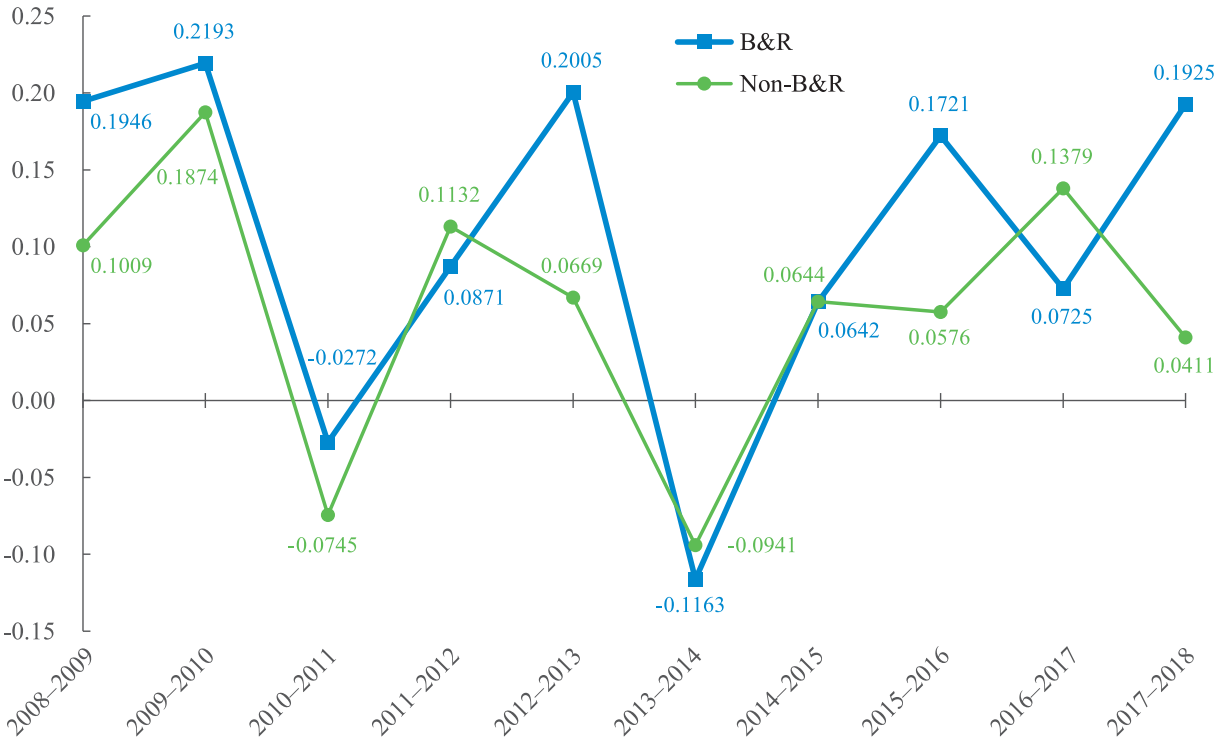


Figure 17: Yearly change in the average scores of the pillar "Technological Readiness" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 10: Market Size

Pillar 10 is an assessment of market size, including both domestic and foreign markets, both of which allow for economies of scale.

From 2007 to 2008, the score for the B&R regions increased by 0.0849, while that for the non-B&R regions increased by 0.0198. From 2008 to 2012, the change in the scores for both regions was downwards and remained low. After 2012, the largest increase in the B&R regions was in 2015. There was very little change in the scores for the non-B&R regions. The change between 2016 and 2017 for the B&R regions was 0.1050, while that for the non-B&R regions was 0.0366. In terms of change, the B&R regions improved more than the non-B&R regions in the most recent period (Figure 18).

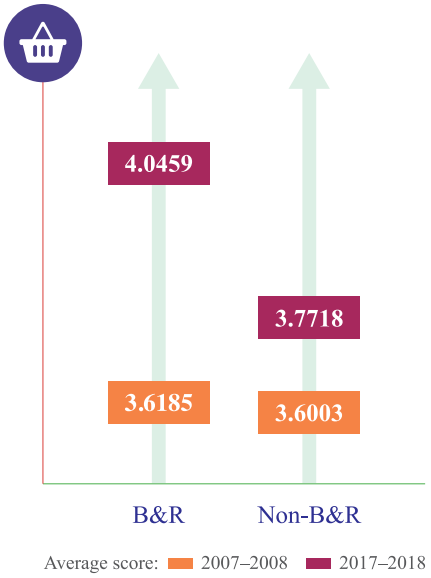
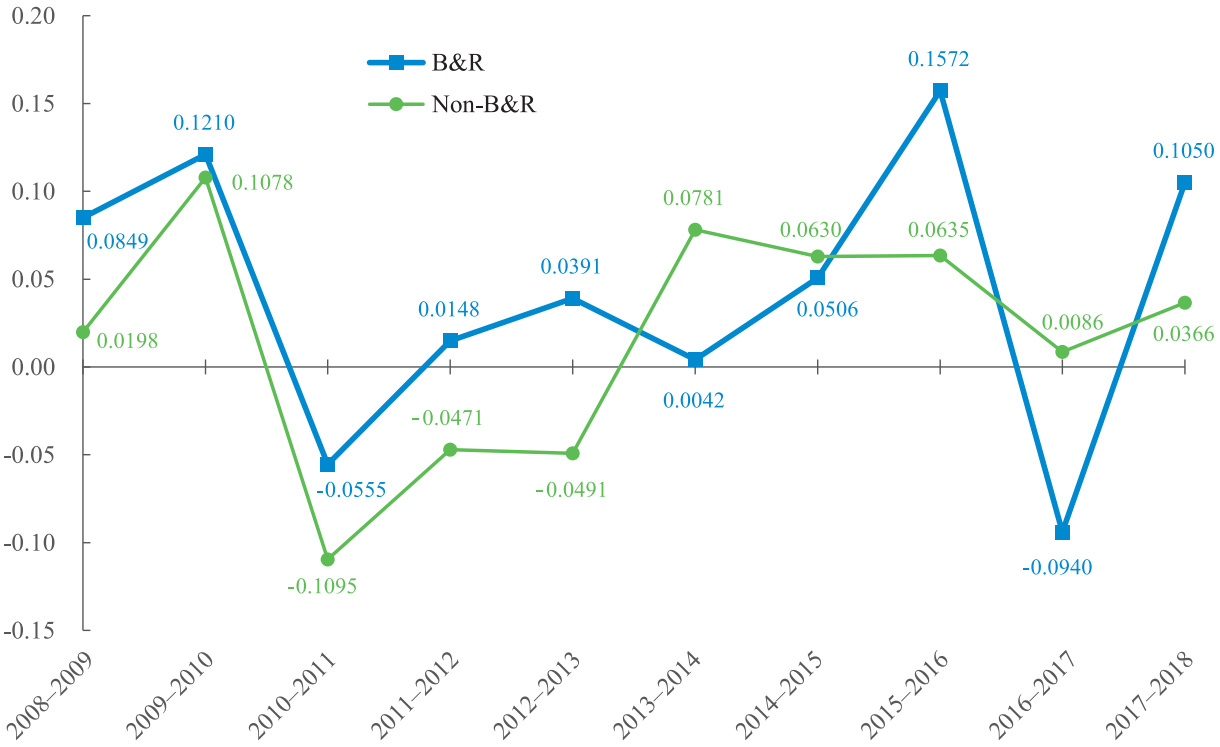


Figure 18: Yearly change in the average scores of the pillar "Market Size" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Pillar 11: Business Sophistication

Pillar 11 is an assessment of business sophistication. It measures the quality of an economy's overall business networks and the quality of the operations and strategies of individual firms.

From 2007 to 2008, the score for the B&R regions increased by 0.0173, while that for the non-B&R regions increased by 0.0261. Although the difference in the change of score between the B&R regions and non-B&R regions was small in this pillar, the B&R regions in general have a lower starting point than the non-B&R regions. From 2008 to 2011, the changes in the scores for both regions all declined, but then climbed up. After 2012, there was very little increase for both regions. However, the change between 2016 and 2017 for the B&R regions was 0.0725, while that for the non-B&R regions was 0.0540. The change in the score for the B&R regions was slightly higher than for the non-B&R regions in the most recent period (Figure 19).

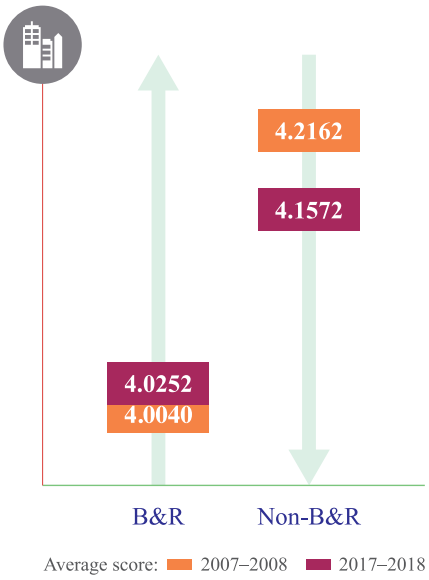
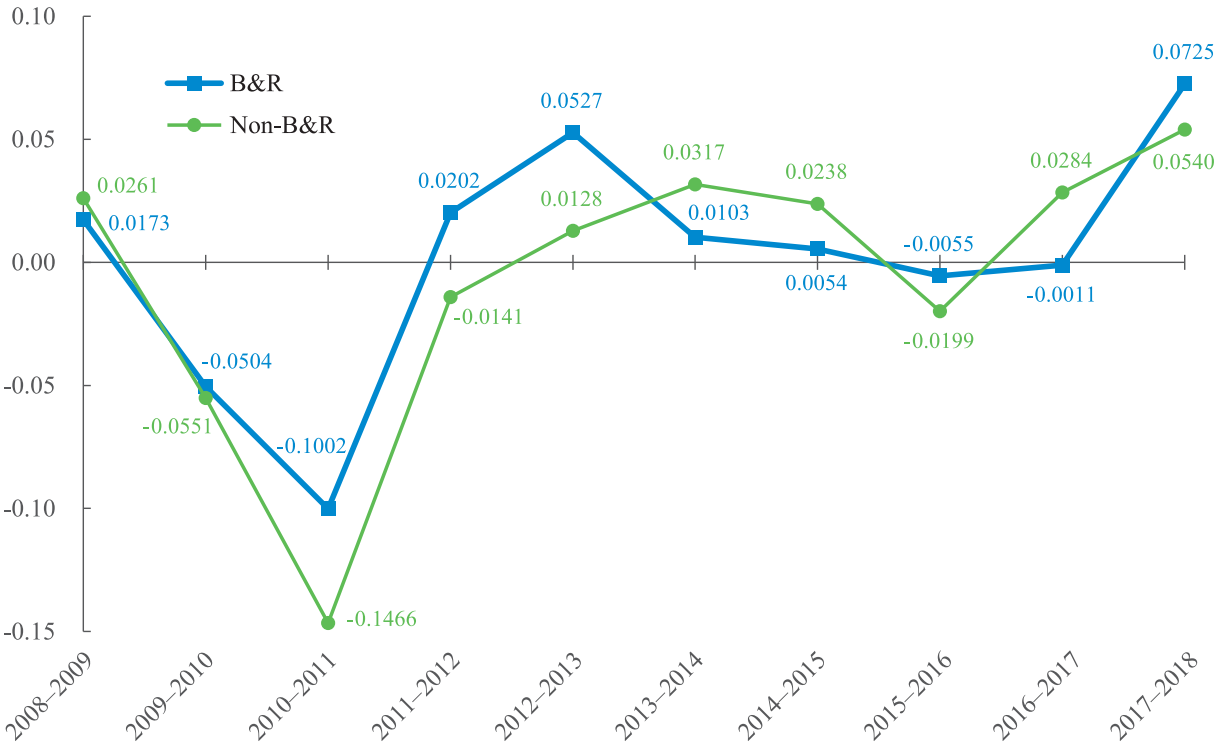


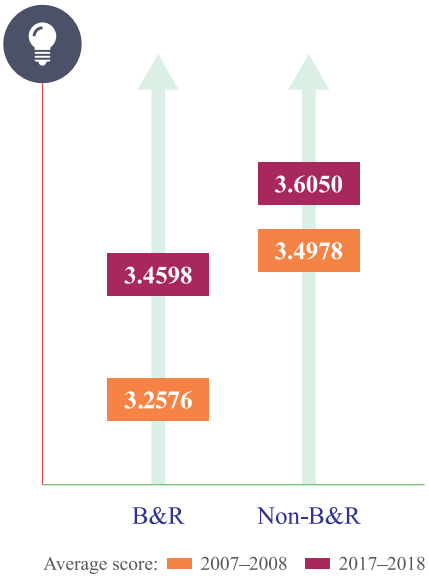
Figure 19: Yearly change in the average scores of the pillar "Business Sophistication" in the B&R and non-B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

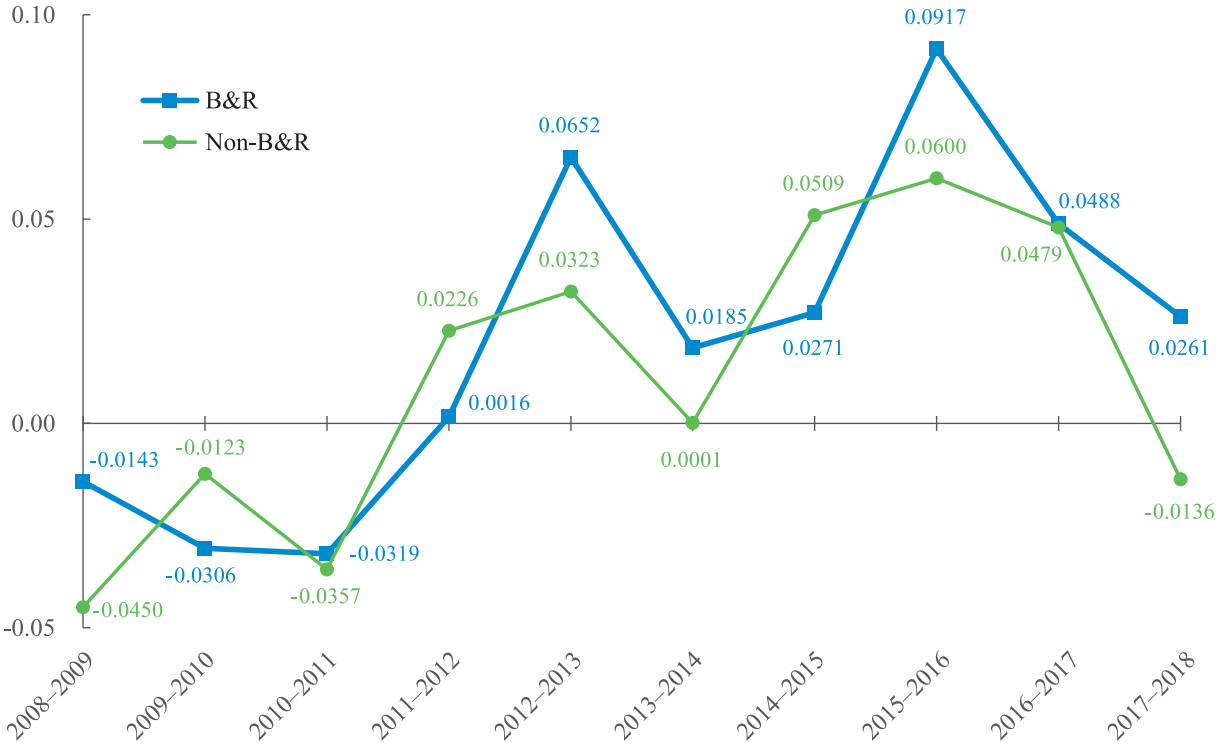
Pillar 12: Innovation

Pillar 12 is an assessment of innovation. It measures sufficient investment in research and development, especially in the private sector, the presence of high-quality scientific research institutions, extensive collaboration in research and technological development between universities and industry, and the protection of intellectual property.



Comparing 2007 to 2008, the score for the B&R regions decreased by 0.0143, while that for the non-B&R regions decreased by 0.0450. The difference in the change of score between the B&R regions and non-B&R regions was small in this pillar. From 2008 to 2011, the change in the scores for the BRI and non-B&R regions was very small. After 2011, the change was obviously larger for the B&R regions than for the non-B&R regions. The change between 2016 and 2017 for the B&R regions was 0.0261, while that for the non-B&R regions was -0.0136. The change in the score for the B&R regions was more positive than that for the non-B&R regions in the most recent period (Figure 20).

Figure 20: Yearly change in the average scores of the pillar "Innovation" in the B&R and non-B&R regions, 2007–2017

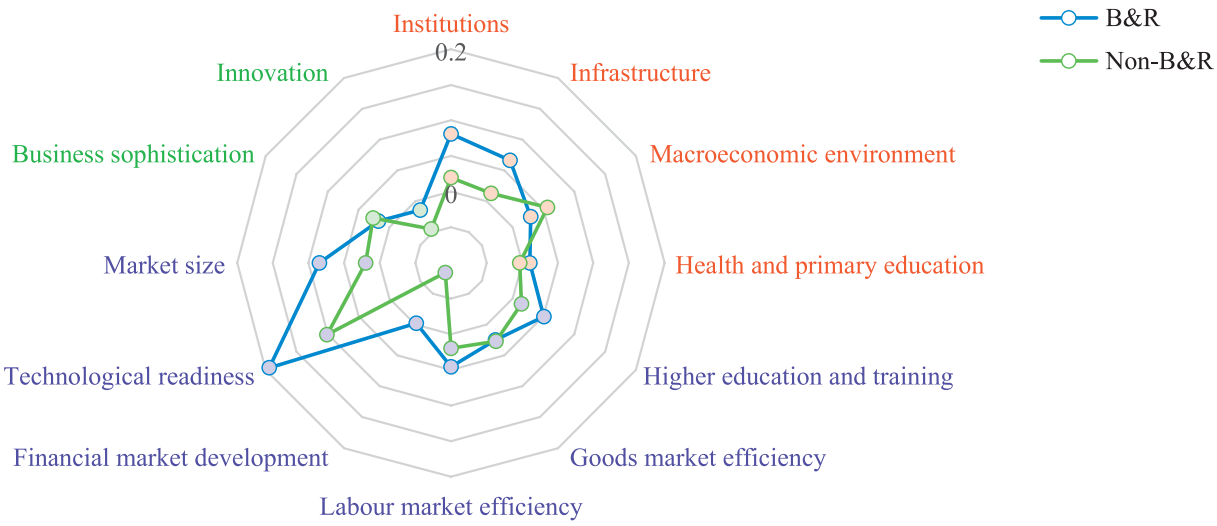


Sources: *The Global Competitiveness Report* (various years).

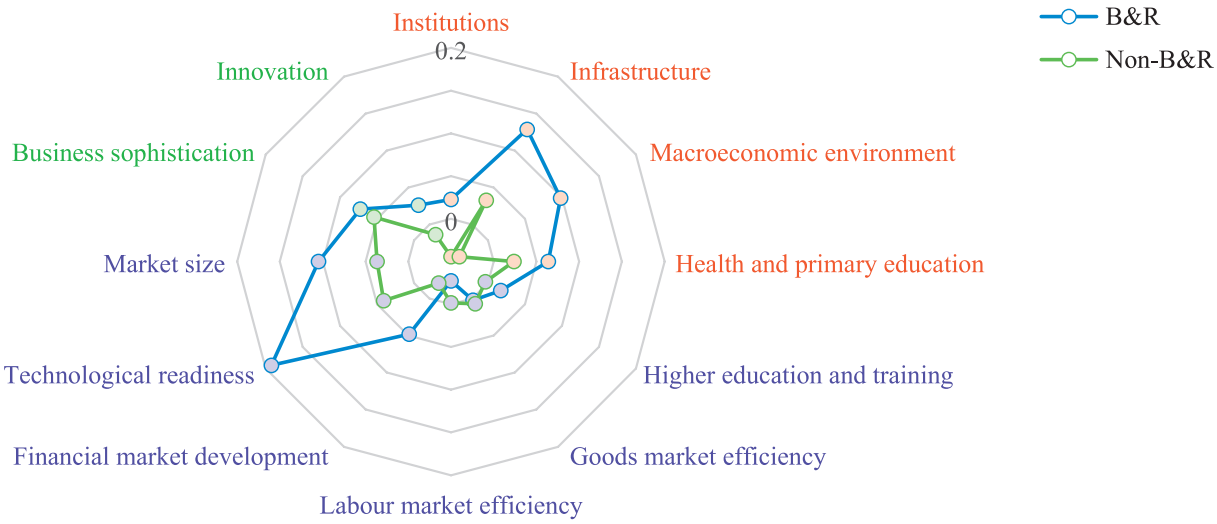
To summarize, the B&R regions are mostly developing economies. They have a larger potential for growth in individual pillars. Similar to the non-B&R regions, they made efforts to stimulate their economies after the financial crisis of 2008. The effect usually did not last for too long. However, the BRI provided a boost and increased the competitiveness of the B&R regions. With the exception of pillar 6 (goods market efficiency) and pillar 7 (labour market efficiency), the B&R regions demonstrated a better performance in all of the ten other pillars than did the non-B&R regions in the most recent period or after the implementation of the BRI in 2013 (Figure 21). This suggests that the BRI could stimulate or boost the competitiveness of economies on many fronts, but that the growth in competitiveness is still internally driven. The external effect of the BRI should not be overestimated.

Figure 21: Change in the average scores of the pillars in the B&R and non-B&R regions

2008–2009



2017–2018



Sources: *The Global Competitiveness Report* (various years).

Geographical Differences and Evaluation

The geography in the B&R regions varies tremendously. Some countries or territories are very rich in valuable natural resources, whereas others are not. Some are landlocked, and some are in coastal regions and may have deep-sea harbours. Even the latitude and altitude of these countries or territories vary greatly. Some are well developed and have a stable socio-political system. Others are not and are frequently plagued by wars or serious armed conflicts. One can see that the variation presents both huge challenges and opportunities for building infrastructure and promoting international trade to link the haves and the have-nots (Bloom and Sachs, 1998; Gallup et al., 2003).

The B&R regions cover three continents (Asia, Africa, and Europe) and include over 60 countries and territories, so not only are there huge geographical variations but also socio-political and religious ones. Therefore, the pace of development in each of these countries and territories must also be very different. In order to obtain a better picture for further analysis, we have divided them into five groups according to their geographical locations: Southeast Asia, South Asia, Central and West Asia, the Middle East and North Africa, and Central and Eastern Europe.

The average GCI score in Central and West Asia was the lowest in 2007, but it rose from 3.7287 to 4.0260 in 2012 and then to 4.2139 in 2017, showing the greatest percentage improvement of 13.01%. Conversely, the average GCI score in the Middle East and North Africa was the highest among the B&R regions in 2007, but in the following year, there was almost no change in the score; from 2007 to 2017, the GCI score dropped by 0.0088, or -0.20%. In other words, the Middle East and North African regions improved the least in the past decade. The BRI had little effect on these regions (Figure 22).

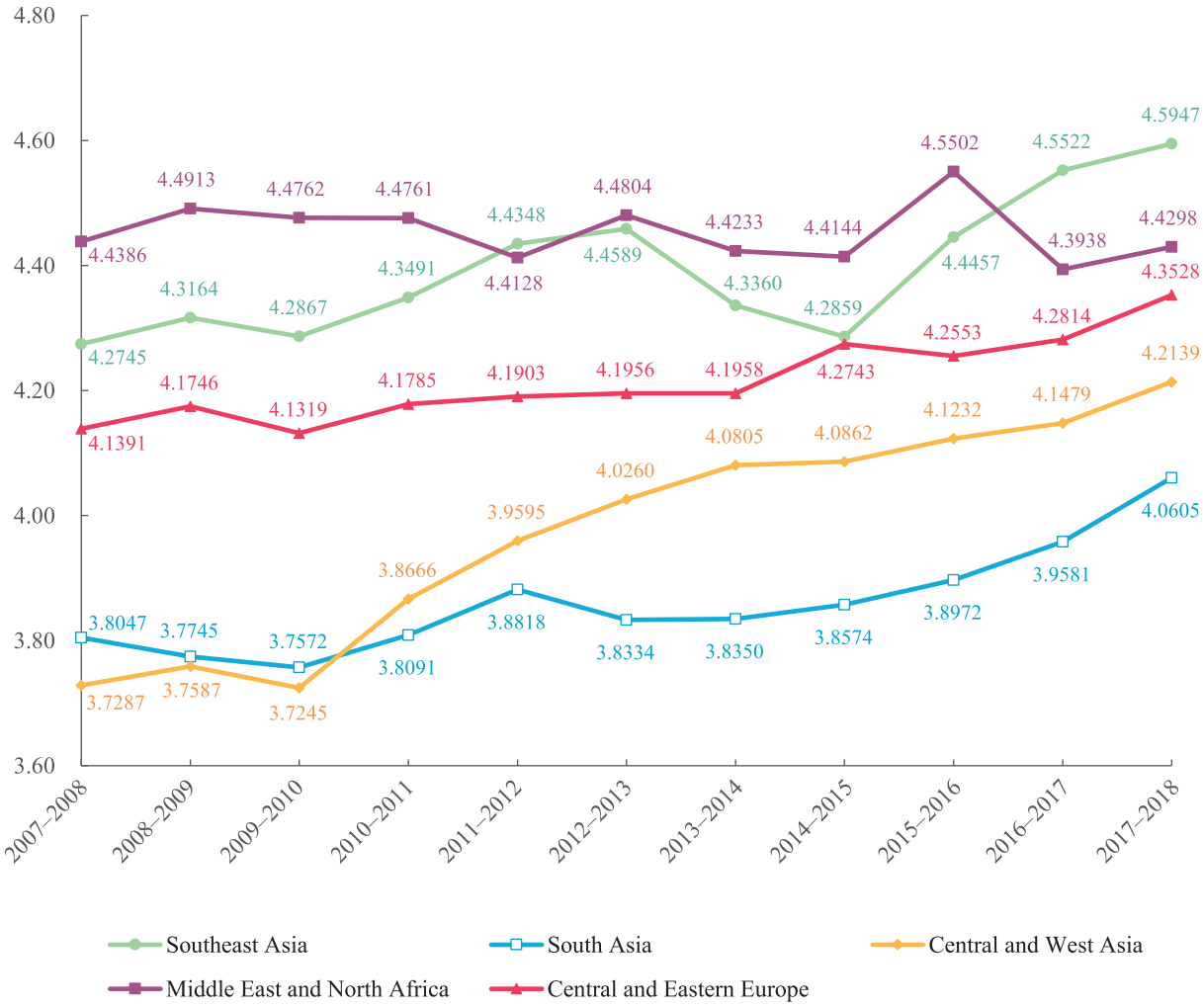
By average GCI score, South Asia also ranked at the bottom of the B&R regions. In 2007, the average score was 3.8047. In 2008 and 2009, the average score dropped. From 2010 onwards, it rose slowly but steadily to 4.0605. In the past decade, the average score in South Asia rose by 0.2558, or 6.72%. As the score rose from 2013 onwards, positive effects generated by the BRI could have been the cause of the rise (Figure 22).

Southeast Asia and Central and Eastern Europe are in the middle range in terms of average scores. Although a gradual increase in their average scores was also seen, the speed of improvement was slower than in Central and West Asia. In 2007, the average score for Southeast Asia was 4.2745; in Central and Eastern Europe it was 4.1391. In subsequent years, the score for Central and Eastern Europe rose steadily to 4.3528 in 2017. In Southeast Asia, although the overall score was rising, it fluctuated. In 2017, the score went up to 4.5947 to become the highest in the B&R regions. If measured by percentage in the past decade, Southeast Asia has made a 7.49% improvement, and Central and Eastern Europe a 5.16% improvement (Figure 22).

The continuous improvement in the

average GCI scores in the B&R regions (except for the Middle East and North Africa) further implies that the regions show economic dynamism, which may also be the case in the years to come. Central and West Asia and Southeast Asia in particular have made far more progress than the other regions in the past decade.

Figure 22: Average GCI scores by geographical region in the B&R regions, 2007–2017



Sources: *The Global Competitiveness Report* (various years).

Conclusions and Limitations

Based on the above findings, we can generally conclude that since the start of the BRI in 2013, the economies in the B&R regions have experienced significant positive changes when compared to the non-B&R regions. The continuous economic growth of the Chinese economy since the 1980s seems to have been the most important force driving the neighbouring economies (the B&R regions) to grow even after the outbreak of the financial tsunami. In contrast, the financial tsunami had a serious negative impact on the non-B&R regions, especially developed economies.

Looking at the possible effect of the BRI, one can see that since the five key areas of cooperation could directly strengthen some of the pillars of an economy, e.g., infrastructure, taking part in the BRI is clearly beneficial (Zheng and Luk, 2019). Since most economies in the B&R regions are emerging, their infrastructure, macroeconomic environment, and financial markets are by no means sound and well established. Through the building of big infrastructure projects such as hydroelectric power plants, high-speed railways, and port and container terminals, not only can transportation capability and natural resources usage be largely improved, but productivity and efficiency can also be greatly increased. Although it is necessary to be cautious when attributing all changes in the competitiveness of the B&R regions to the initiative, it is also impossible to deny the influence of China on the world economy, especially on the B&R regions after the 2008 financial tsunami. This point could also be supported by a similar finding that in comparison with other economies in the world, the regions have demonstrated dynamism in recent years (PricewaterhouseCoopers, 2017).

However, some shortcomings should be noted. First, not all countries or territories in the B&R regions are included in the GCI, so the picture that was sketched here is by no means a complete one. Second, GCI only focuses on economic and financial aspects, so non-economic aspects such as policy coordination and people-to-people bond are not available for closer evaluation, and the impact may be underestimated. Third, the standard or criteria for calculating GCI stem from the Western Christian culture or values, but many countries or territories in the B&R regions are under Islamic, Buddhist, or Confucian influence; hence, the index may be biased.

Policy Recommendations

Based on the research findings, we come to the following policy recommendations:

1. Policy Inclusiveness

In the last five years, the BRI has greatly reduced the cost of trade through the construction of infrastructure along the B&R regions, as suggested by the comparison. In general, the BRI has increased the strength of those economies. However, the improvement was very small in individual pillars like the goods market efficiency and labour market efficiency of the B&R regions in comparison with the non-B&R regions. This may suggest that the benefits brought about by the BRI has had an unequal influence, and that the effects have been slow to be felt in some sectors within those economies. For example, the labour market may be slow to adjust to the changes brought about by the BRI. An increase in the efficiency of trade may also bring more economies into direct competition with goods manufactured in China.

As suggested by the World Bank (2019:94), the BRI may generate "trade-induced adjustment costs", including labour displacements and import competition. More complementary regional policies may be required to address this problem. Social security, housing, labour protections, training, and mobility could be improved through policy coordination between China and the B&R economies. The intention is to make it possible for more social groups in those economies to benefit from the BRI rather than to be excluded. Coordination on the policy level could direct investment to better uses and serve the welfare of the general public in those economies.

2. Sustainability

The focus of the BRI is to promote trade efficiency through the construction of infrastructure and extraction of natural resources. If poorly managed, these projects could generate huge environmental and social risks. Some hydroelectric power, road, and rail projects in ASEAN countries have raised concerns about biodiversity,

pollution, landslides, flooding, soil erosion, deforestation, and so on. Many B&R economies are located in environmentally vulnerable regions where infrastructure projects may impose high risks for sustainability. As suggested in the BRI, green development is a principle that could reduce environmental costs. However, reports suggest that this principle is still not well supported in many projects (Tsinghua PBCSF, 2019; World Bank, 2019:114–122). This problem had led to many doubts and suspicions about the BRI. To follow the principle of green development, the BRI could require the integration of an environmental and social cost-benefit assessment into the design and auditing of a project before and after the implementation, avoid ecologically vulnerable locations, make better arrangements for restoration or mitigation, and stipulate that compensation be given to citizens for the impacts of a project. Policy coordination among the B&R economies may also be necessary, to follow current international standards and frameworks for best practices. From her long history of trading with Southeast Asian countries, Hong Kong has people with deep knowledge and experience in managing environmental, social, and governmental (ESG) risks. Hong Kong successfully raised one billion US dollars in its first green bond in 2019. Hong Kong could offer a full package of solutions from project design, finance, and management to assessments of the sustainability of BRI-related projects.

3. Public Engagement

One of the doubts raised about the BRI is the possible burden of debt on their economies, most of which rest on weak fiscal foundations. Besides fiscal risks, some B&R economies also have problems in controlling government corruption. The current implementation of the BRI has seen more involvement from state-owned enterprises and state-level engagement. Opaque arrangements in the dissemination of information may exacerbate doubts about the fiscal and governance risks of B&R projects. Public engagement in the whole initiative, especially in specific projects, should be encouraged. The first step could be increased information transparency as to the terms of financing of specific projects and open bids for more public-private partnerships both locally and internationally. Moreover, international standards of best practice should be followed in BRI-related projects from the initial stage, to avoid corruption and fraud. Public engagement through assessments and audits by a third party could be a low-cost solution to these problems. Professional management skills are also required to avoid construction cost overruns. If successfully implemented in this way, the BRI could help to improve the competitiveness of institutions along with that of infrastructure in the B&R economies in the long run. As a financial centre, Hong Kong could provide financial support as well as professional management services to BRI projects according to international best practices.

4. Mechanism for Resolving Disputes

In the last five years, a few infrastructure projects, such as the Malaysia's East Coast Rail Link and the Jakarta-Bandung High-Speed Rail projects, faced suspension under various controversies. Some of these were due to transitions of power and some to mismanagement. These happenings raised concerns about disputes arising from issues ranging from geopolitics to the management of BRI-related projects. The current arrangement for resolving disputes is through state-level political negotiations, which are time-consuming and costly. As the BRI expands, it can be anticipated that more disputes will arise at various levels and that it may not be possible to resolve all of them through top-level negotiations. To promote policy coordination, the BRI should encourage more resolutions of disputes through established means or through the innovation of institutions. Together with the B&R economies, China could help to establish multilateral mechanisms to resolve disputes by setting up specialized centres or organizations. Through these centres or organizations, some principles of dispute resolution could be established and implemented, which could also contribute to international governance in the long run. Hong Kong is a leading centre for dispute settlement in the Asia-Pacific region. Hong Kong's strong legal infrastructure, abundance of professional expertise, and advantageous geographic location could facilitate the BRI to establish mechanisms for resolving disputes.

To conclude, although the B&R regions seem to have performed better than the non-B&R regions in most factors of competitiveness in the last decade, this does not suggest the existence of a zero-sum competition between the groups. The non-B&R regions also recovered from the financial tsunami and made progress. As was suggested in the World Bank (2019) report, the BRI has benefitted the participating economies as well as other economies because improvements in infrastructure have connected more places and made them more accessible. A Deloitte report compared the BRI to a journey in which one is closer to the start than to the end, and suggested that investors take a longer view of the projects. "[W]hile we do not downplay the risks, we believe they are less severe than many assume" (Deloitte, 2018:2).

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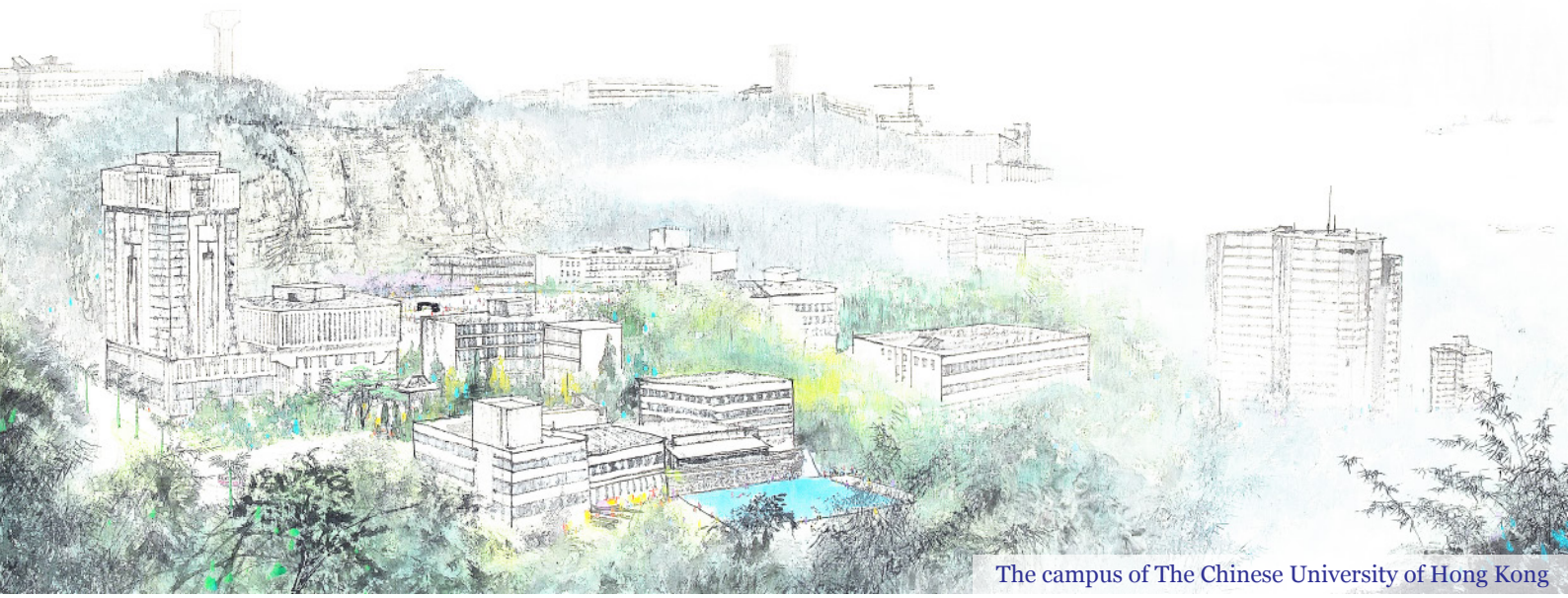

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