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Power, Policy and Conflict: the Politics of Regional System of Innovation in  
Gyeonggi province, South Korea

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Submitted in accordance with the requirement for the degree of Doctor of Philosophy

SPRU – SCIENCE AND TECHNOLOGY POLICY RESEARCH

UNIVERSITY OF SUSSEX

Brighton, UK, 2016

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Submission for the degree of DPhil

Power, Policy and Conflict: the Politics of Regional System of Innovation in Gyeonggi  
province, South Korea

**Abstract**

Academic literature has examined how change in a regional system of innovation involves interactions between various actors that participate in regional economic development. This thesis examines similar processes, but also explores the ways in which various factors characterize change in regional systems of innovation. Without making assumptions about the political nature of the interactions among actors and the contexts surrounding them, the thesis advances the idea of a non-economic approach to the processes of regional development and industrial policy. In this thesis, a strategic relational perspective to regional systems of innovation comprises the conceptual framework that provides an in-depth explanation of the analysis of experiences. The single case study is employed for the operationalization of the strategic-relational perspective in the context of Gyeonggi province, South Korea, as a highly industrialized region in a post catching-up economy. The fieldwork is based on the collection and analysis of interviews and participant observation. The interpretation of empirical evidence through the strategic relational perspective reveals tension in the governance context, which has not met the interests of regional policy makers concerning regional development and industrial policy in Gyeonggi province. Thus, the thesis portrays the parts played by the provincial government in the innovation system affecting innovative capacity and performance, and identifies the political tensions that emerged and that seemed to be important in these processes.

## Abbreviations

ASV	Anan Science Valley
BNDP	Balanced National Development Plan
CNTP	Comprehensive National Territorial Plan
CRRPA	Capital Region Readjustment Plan Act
GAFIG	Gyeonggi Association of Foreign Invested Companies
GERD	Gross domestic expenditure on Research and Development
GRDP	Gross Regional Domestic Product
GRI	Gyeonggi Research Institute
GRRC	Gyeonggi Regional Research Centre
GSBC	Gyeonggi Small Business Centre
GSTEP	Gyeonggi Institute for Science and Technology Promotion
GTDP	Gyeonggi Technology Development Programmes
IICC	Industrial Innovation Cluster Committees
IMT	Intelligent Mechatronics
KERI	Korea Electric Research Institute
KICOX	Korea Industrial Complex Cooperation
KIPO	Korea Intellectual Property Office
KITECH	Korea Institute of Industrial Technology
KLRI	Korea Legislation Research Institute
KOTRI	Korea High Tech Textile Research Institute
KOSIS	Korean Statistical Information Service
KTL	Korea Testing Laboratory
MEST	The Ministry of Education, Science and Technology
MKE	The Ministry of Knowledge and Economy
MOLIT	The Ministry of Land, Infrastructure and Transport
MOFE	The Ministry of Finance and Economy
MOSF	The Ministry of Strategy and Finance
NSTC	The National Science and Technology Council
PACEST	The Presidential Advisory Council on Education, Science and Technology
PCBND	The Presidential Committee on Balanced National Development
PCRD	The Presidential Committee of Regional Development
RIC	Regional Innovation Centre
RRC	Regional Research Centre
SMBA	Small and Medium Business Administration
SMIPC	SMEs Industry Promotion Corporation
STBP	Science and Technology Basic Plan
STEPI	Science and Technology Policy Institute
TIC	Technology Innovation Centre

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# 1 Introduction

This study is about the relationship between the nation state and the regions in the period of development often referred to as the post catching-up period in South Korea.<sup>1</sup> The thesis highlights polycentric relationships and the emergence of regional development and industrial policies within a regional system of innovation (Cooke et al., 2004) that is undergoing change as the structure of the political economy evolves toward the devolution of centralised power to the regions within South Korea.<sup>2</sup> Applying the strategic relational perspective proposed by Hay (2002) and Jessop (2008) to political interactions, industrial and regional development policies are conceptualized to be the result of strategic actions, and the change in these policies is examined through the interaction of regional and national actors. In particular, the thesis focuses on the technology development policies that are situated in South Korea's regions. One of these regions, Gyeonggi province, is the focus of this thesis.

The topic poses two challenges. One is the new challenge that collective groups (e.g. actors inside and outside national and regional policy organizations) are facing in relation to economic development processes, in the context of the knowledge economy and the political devolution. The other challenge for policy makers concerned with regional

---

<sup>1</sup> The state, defined by Max Weber as a compulsory association claiming control over a territory and the people there in (cited in Evans, 1995: 5), is considered to be the structure of government (Wade, 1990: 8). In keeping with Wade, the term 'nation state' is used interchangeably with the term 'central government' in this study.

<sup>2</sup> There is no simple definition of a 'region' and the term is used differently in different national contexts (e.g. province and Länder). Region is often defined in terms of shared normative interest (cultural areas), economic specificity (mono-production systems) and administrative homogeneity (governance areas). This creates some difficulty in cross-national studies as participants attempt to understand the different meanings attached to the term 'region'. European Commission (2004: 1) defines a region in its *Guide to European Regional Statistics* as "a tract of land with more or less definitely marked boundaries, which often serves as an administrative unit below the level of the nation state". In this thesis, regions are understood to be located at the provincial level, i.e. between the local and national tiers of political economy.

development at national and regional levels is to incorporate actors with a wider range of interests than the traditional public sector actors, who played a central role in the catching-up period.

The analysis requires an examination of government policies at national and regional levels regarding regional development and industrial policy and the influence of these policies located within such a devolved structure. This is the place to give more substance to the interaction between national and regional actors. Both regional development and industrial policy play an important role in supporting the technological development that firms conduct.

Increasingly, provincial governments are seen to play a crucial role in the development of technology, particularly with regard to the provision of strategic services. However, there seem to be possible contradictions about the role of provincial government in industrial development processes. On the one hand, provincial government may be seen as an instrument of the centralised state charged with local implementation of policies determined at a national level. On the other hand, provincial government may represent interests that are not entirely aligned with these national policies. The mutually exclusive nature of these purposes creates a contradiction. In much of the literature on innovation and South Korea, the assumption is made that provincial government is part of the infrastructure of the national economy. Nevertheless, in practice, provincial government is seen to be difficult to coordinate as a partner in an industrial policy in a national strategy. This thesis aims to explain these contradictions by identifying the theoretical and policy assumptions made in the literature and by providing some empirical evidence highlighting the policy process unfolding in regional contexts with regard to the activities of provincial government.

This study examines the parts played by provincial government in the policies affecting innovative capacity and performance, and suggests what conflicts or tensions have emerged that seem to be important in these processes. The following chapters consider theoretical perspectives to investigate these points and highlight how provincial government reacts to this situation in relation to national government and policies.

The chapter starts by setting out the background of the issues to be dealt with in this thesis. Next, the chapter goes on to identify key issues in the existing literature, followed by the presentation of the theoretical perspectives, which are developed further in Chapter 2. Finally, the key research proposition and questions are set out. The chapter concludes by presenting the outline of the rest of the thesis.

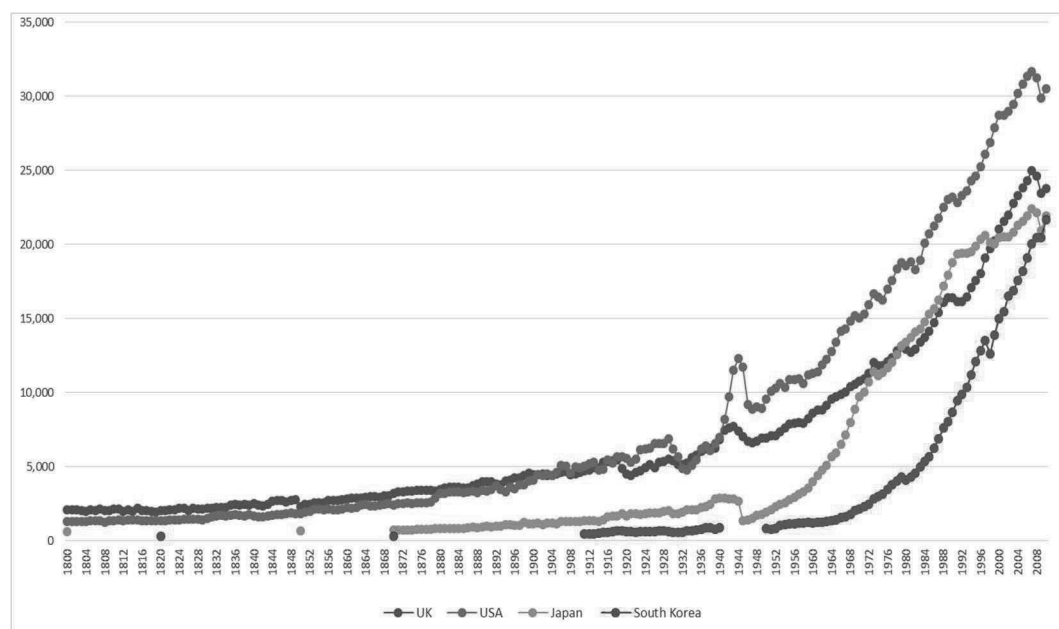
## **1.1 Background context**

South Korea has often been compared with France (Zysman, 1983) and Japan (Okimoto, 1989; Ozawa, 2001), which are seen as examples of centralized capitalism (Kohli, 2004: 101; Levy et al., 2006: 93; Hancké et al., 2008: 24). Centralisation is associated with nationalism and a tolerance of localised democratic deficits because of pride in societal accomplishment (even if the benefits from these accomplishments are unequally distributed and their direction is set by a narrow elite). This insulation and autonomy of the nation state has created a political environment for policy consistency because economic conditions will not be greatly influenced by the electoral cycle (Zysman, 1983: 298).

The curve shown in Figure 1-1 indicates the change in GDP per capita of South Korea over the past one hundred years. During the pre-World War II (WWII) period, Korea (including North Korea) was under Japanese colonial rule. Economic growth declined sharply due to

the disruption from WWII, the division of the country in 1945, and the Korean War in 1950. However, in the mid-1960s, the economy began to grow rapidly. While economic growth was curbed by the economic crisis in the late 1990s, the growth rate over the first decade of the 2000s was about 5% on average. During this period, South Korea achieved economic modernization in a more compressed way than Japan in what is a short time span relative to the process of modernization in other countries (OECD, 2012: 32).

Figure 1-1 GDP per capita in UK, US, Japan and South Korea (1800-2010)



Source: Maddison Database (<http://www.ggd.net/maddison/maddison-project/home.htm>)

Note: GDP per capita in 1990 international Geary-Khamis dollars in the left axis.

Rapid economic growth was evaluated as the result of the expansion of inputs, labour, and finance. These factors are not unrelated to each other; the input-driven policies, the investment in human capital, and the direct foreign investment were all important. In controlling the country, the central government has relied on several planned economy policy instruments, such as a series of the Five-Year Economic Development Plans (1962-

1996) (Chung Young-Lob, 2007: 368).<sup>3</sup> It has emphasized heavy industrialization, such as manufacturing and chemical production for the purpose of export; 10.7% of the government expenditure was invested in the transport infrastructure during the 1970s and 1980s. As a result of the continuous investment in roads, railways, seaports, and airports since the 1960s, the country's transport network has been densely developed.<sup>4</sup> The national industrial districts were created in 'the Comprehensive National Territorial Plan (1972-present)'. It aims to facilitate the development of the local economy and to raise local income from non-agricultural activities. In the 1970s, the national industrial districts were built, and these formed the industrial belt in the southeast coastal regions to support the heavy and chemical industries. The central government started the construction of industrial districts, focusing on export-driven industrial districts in several cities, for instance, 'the Ulsan Industrial Complex' in Ulsan, which is located in the southeast of Korea, and 'the Korea Export Industrial Park' in Guro-dong, Seoul. By the end of the first decade of the 21<sup>st</sup> century, these industrial conurbations accounted for over 70% of all manufacturing exports, about 60% of production, and over 40% of employment in South Korea (KDI, 2012: 33-35).

These plans were accompanied by large investments in education. There was a strong emphasis on vocational schools, which were supposed to meet the needs of the industrial sectors (Chung Young-lob, 2007: 72). The emphasis placed on technologically inclined human capital is another aspect of investment in education. The Ministry of Science and Technology, which was established in 1967, was responsible for research and development R&D), human resource development, and science and technology

---

<sup>3</sup> As a rule, South Korean surnames precede the first name, and I adhere to this in this thesis in order to avoid confusion.

<sup>4</sup> Although the construction of railways started from the 1900s during the colonial period of Japan, railway investment continued after the independence in 1945 and at the end of the Korean War in 1953.

improvement. During the 1970s, some specialized research institutes were established in areas such as electronics, shipbuilding, telecommunications, machinery, energy, and chemical bases, which were all well suited to rapid economic growth. Considerable capital accumulation and investment in primary education during this period allowed a gradual shift up the value-added chain toward more sophisticated commodities. Key to this shift was also the use of technologies obtained through foreign licensing and adapted for domestic production.

It has very little importance in the developmental state context unless external actors are involved. Clearly, the stable policy framework was important in this respect prior to the 1997 crisis after which, Direct Foreign Investment (DFI) surged (Kim June-Dong and Hwang Sang-In, 2000: 270; Chung Young-lob, 2007: 291). The number of foreign-invested companies in South Korea has increased over the three decades. Between 1962 and 1997, the total volume of DFI was 25 billion USD. Since then, between 1998 and 2000, the amount of DFI has been closer to 40 billion USD (Bank of Korea, Economic Statistic System)<sup>5</sup>. There were two key reasons for the increased DFI inflows after the 1997 crisis: 1) the economic policy reform, including granting permission for merger and acquisitions, new taxation incentives, and the deregulation of foreign ownership; and 2) the depreciation of the Korean currency (KRW). At the end of 1997, the value of the KRW depreciated by 40.4 % against USD and by 33.2% against the Japanese Yen (JPY) compared with its value at the end of 1996.

Although these kinds of input-driven growth policies contributed to the industrial development of South Korea, they reached their limit when the knowledge economy began to emerge. One indication of the limitations of manufacturing is the relatively low labour productivity (Guarini et al., 2006) and the total factor productivity (TFP) growth

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<sup>5</sup> [http://ecos.bok.or.kr/flex/EasySearch\\_e.jsp](http://ecos.bok.or.kr/flex/EasySearch_e.jsp)



rate having been lower than that of other developed economies. For 25 years, from 1981 to 2005, the TFP growth rate of South Korea was lower than that of other advanced countries (Table 1-1). The annual average growth rate of TFP was 0.25% in all industries compared with 0.40% of the US and 0.34% of EU-10 countries. The TFP contribution rate to the gross output growth was much lower than that of other advanced countries.

Table 1-1 Annual average growth rate of Total Factor Productivity (TFP) (1981-2005)

	TFP growth rate (%)			TFP contribution rate (%)		
	Manufacturing	Service	All industries	Manufacturing	Service	All industries
South Korea	0.74	-0.41	0.25	7.94	-5.84	3.18
US	1.13	0.22	0.40	46.89	6.71	14.49
Japan	0.38	0.10	0.17	19.59	3.24	7.33
EU-10	0.55	0.16	0.34	31.61	5.35	14.35

Note: TFP contribution rate = (TFP growth rate / Gross output growth rate) x 100

Sources: Korea Industrial Productivity Database ([http://www.kpc.or.kr/productivity/state\\_prod.asp](http://www.kpc.or.kr/productivity/state_prod.asp))

In particular, South Korea has experienced significant economic and political changes since an International Monetary Fund (IMF) loan became necessary due to the lack of foreign currency liquidity in 1997; many South Koreans call the years the IMF period or, more interestingly, the IMF economic crisis (IMF, 1999; 2002).<sup>6</sup> The GDP growth rate was 5.8% in 1997 and fell to a record low of -5.8% in 1998 (*Digital Chosun Ilbo*, December 30, 1997). The Korean won (KRW), which depreciated to 1,700 per USD in January 1998 from

<sup>6</sup> In January 1997, the Hanbo Steel Manufacturing Company collapsed under a debt of 6 billion USD. This was followed by the collapse of Sami Steel Corporation and Kia Motor's request for bankruptcy protection. On 2 July, 1997, the Bank of Thailand announced a managed float of the *baht* and called on the IMF for technical assistance. In October, the Hong Kong stock market crashed. These external shocks added to the impact on South Korean share markets for three reasons. First, South Korean financial organizations had lent a total of 173 million USD to Thailand's finance companies by the end of August 1997, and 92 million USD could not be guaranteed by the Thai Government (*Digital Chosun Ilbo*, October 1, 1997). Second, since 34% of South Korean exports went to Southeast Asian countries, a significant decline in exports was expected (*Digital Chosun Ilbo*, June 4, 1999), and investors started selling their stocks. Third, foreign investors were concerned about the fallout from the export and financial relations with Southeast Asia (*Digital Chosun Ilbo*, April 10, 1998).

the pre-crisis level of 900 KRW, stabilized to the 1,300 level by the middle of 1998 (the Bank of Korea, 1999; 2004). The unemployment rate stood at roughly 420,000 at the end of 1997. By June 1998, that number had reached 1.41 million, representing a loss of nearly one million jobs in just six months. The majority of these were considered white-collar jobs, an unthinkable phenomenon in a culture based on life-long employment (Lee Sook-Jong and Han Taejoon, 2006: 307).

In 1998, South Korea experienced not only economic change, but also for the first time, a change of politics from conservatives to moderate progressives (Minns, 2001; Kihl Young-Whan, 2005; Bae Yooil and Sellers, 2007). With the advent of democracy, the moderate progressive governments turned their attention to ironing out the inequities characteristic of the society, rather than seeking to overturn it. Thus, concepts such as 'privatization' (Park Bae-Gyoon et al., 2012: 109), 'free market economy' (Crotty and Lee Kang-Kook, 2001: 1) or 'small government' (Choi Jang Jip, 1998) became key phrases of the discourse in the late-1990s. Such public sector reforms aimed to address the perceived problems in the state: over-centralization, lack of transparency, rigidity and low competitiveness.

The administration of Kim Dae-Jung (1998-2003), that is, the first moderate progressive administration, established three goals for carrying out public sector reform: 'a small government', 'a highly competitive government', and 'a customer-oriented government' (Lim Hyun-Chin and Jang Jin-Ho, 2006: 445).<sup>7</sup> The reformers strongly urged the government to adopt measures to privatize key public corporations and to delegate

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<sup>7</sup> The Kim Dae-Jung administration (1998-2003) was inaugurated in February 1998. The new administration defined the economic situation as 'the greatest national crisis since the Korean War'. It also charted an aggressive program of management reform, privatization, and downsizing to transform government policy, which made *DJnomics* in Korea as familiar as *Reaganomics* was in the United States and *Rogernomics* in New Zealand. In practice, in its first year (1998) of operation, the Committee scrapped about 5,326 of 11,125 administrative regulations, a reduction of 48%. One of the results was that foreigners can now purchase land under the same rules as Koreans to increase DFI.

responsibilities to the regions (Im Tobin, 2003a, 2003b; Kim Pan-Suk, 2000, 2003; Brandesen and Kim Sunhyuk, 2010).<sup>8</sup> Since then, local government has been receiving increasing attention.

The extent to which South Korea is converging to or diverging from the nation state-directed economy model following the economic globalization, political change, and devolution in 1990s remains uncertain. If South Korea's political economy has undergone a fundamental transformation in its political system and economic practices, is the country still a developmental state either in the 20<sup>th</sup> century sense or in the 21<sup>st</sup> century sense suggested by Evans (2008), or has it become a different kind of nation state? A stable policy framework has also been seen as more credible to economic agents and is considered to have improved economic outcomes, given that the nation state ultimately guaranteed low costs of production and the control of economic development.

While the role of the nation state historically was unambiguous, there is little agreement on what type of state is appropriate for today's post catching-up society. Among those contributing to this discussion is Evans (2008: 13-15); he recently defined what he calls the 21st century developmental state and discussed the differences between this and the developmental states of the 20th century including a different set of prescriptions for states wishing to assume this activist role. Some studies have argued that since South Korea moved to a deregulated economy and devolved politics, the state has been transformed into a neo-liberal economy (Hundt, 2005; Pirie, 2005; 2008; Hill et al., 2012) and into a devolved state (Rozman, 2002; Bae Yooil and Sellers, 2007; Bae Yooil, 2009).

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<sup>8</sup> There are eight cases of privitisation of public firms. The Pohang Iron and Steel Company (POSCO) case is emblematic of the economic crisis. The economic crisis buffeted the central government, which ratcheted up its schedule to privatize POSCO (formerly Pohang Iron and Steel Company Ltd.). In order to raise foreign currency and help satisfy IMF-imposed criteria for the release of 57 billion USD in much needed stabilization loans, the government sold off an additional 3.14 percent stake in POSCO in 1998. The following year, the government sold an additional 13 percent stake. Privatization was fully completed in 2001, when the government divested its final shares (Nam Il Chong, 2004: 98).

Conversely, there are arguments regarding how the nation state still plays a crucial role in some of the landmark innovations (Mazzucato, 2013). For example, Mazzucato (2013) describes in detail how the central government has financed essential technological innovations.<sup>9</sup>

The result has been a complex array of policy and political experiments across major public policy fields, including economic development, social, cultural, environmental, and welfare policies (Kim Jin Wook, 2005). Although this package of policy initiatives has been proven to be ephemeral in many areas, it has had a lasting imprint on the nation state's role with respect to the regions. After political devolution was secured in 1995, conflicts became policy issues due to the growth of regional society. Recent academic literature about the political science discipline includes numerous claims that the centrality of the state is increasingly being challenged by a new form of political mobilization, conflict, and struggle (Koo, 2001; Peng and Wong, 2004; Kim Jungbu, 2013). Such conflicts have ushered in a society that has become more involved in the decision making related to regional and industrial development.

## **1.2 Theoretical context**

This thesis aims to contribute to the understanding of the linkage between nation state and regions to regional development and industrial policy. The nature and extent of the interactions in regional development and industrial policy have been questioned in the literature by both geographers and economists. Indeed, in debates about economic development, recent theories have emphasized the importance of region.

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<sup>9</sup> For example, she argues that much of the technology underlying the Apple smartphone was created in public research and development organization in US (see Mazzucato, 2013: 88).

These ideas are a revival of earlier theoretical ideas, such as those of Marshall (1920), about the relevance of locality to processes of economic development – localities are where knowledge is exchanged, labour markets are better integrated, and tight vertical production relationships can be organized. Sub-national governments can play an important role in regional economic development through the remedy of imperfections in the local market. Provincial governments can create a favourable context for local development through land use policies and the provision of infrastructural investments (in energy, transport, and communications). Furthermore, they can proactively seek to improve relationships between local business and public sector institutions, such as schools and universities. Once all these things have been achieved, it is possible that the provincial government might proactively encourage the location of domestic and foreign enterprise, thus remedying thin local markets for important inputs to a developing industry. In other words, the argument regarding remedying market imperfections is at the end rather than the beginning of the list of desirable actions. More recently, others have drawn attention to the role of local communities in policy making (Andersson and Karlsson, 2004; Pike, 2007; Foray et al., 2009). In addition, the interest in the regions is further stimulated by a general criticism of neoliberal economic views that assume the markets are ‘flat’ and ‘perfect’, and have no structure or locality (Gualini, 2004; Lajendijk, 2007).

This thesis draws upon the insights of the regional system of innovation (RSI) approach, one of the approaches that highlight the importance of locality and the localisation of innovation and learning. The RSI approach highlights the systemic aspects of economic development. Its fundamental focus is the interactions between different actors in economic activities, particularly the interaction between users and producers, but also between business and the community. The RSI approach goes beyond economics by focussing on non-market as well as market interactions.

While the RSI approach has emerged as an independent domain of theory and practice in Europe, it was introduced in South Korea around the beginning of the 1990s (Chung Sunyang, 1999; Park Sam Ock, 2000; Cooke et al., 2004; Hassink and Shin Dong-Ho, 2005; Cho Myung-Rae and Hassink, 2009; *Regional Science*, 2011). These studies introduced the idea that regional development and industrial policy have changed and have shifted away from the 'top-down' regional policies that were implemented in the 1970s (mainly large-scale heavy industrial complexes in the central and particularly south-eastern parts of South Korea) and 1980s (mainly public research establishments at Daedeok science park in Daejeon). Instead, in the late-1990s, they moved towards nation state-led decentralization policies to develop endogenous potentials (mainly SMEs) in regions.

While many of the relations dealt with in the RSI literature are concerned with local actors, there has been a growing acknowledgement that *political* relations between the nation state and the region in the economic process is of fundamental importance, and this relationship can play a critical role in shaping RSI (Pike, 2007: 1265). The political nature of this relation stems from the recognition that the distribution of powers may not match formal provisions. Neither the nation state nor the region has exclusive control over actions that may be taken in furtherance of development. Thus, actions may be taken at either the level of the nation state or that of the region, and such actions elicit responses not only from regional actors but also from different levels of constitutive power – the nation state and the region. This ensemble shapes the relations among actors and ultimately affects the flows of resources. In countries such as South Korea, which have a tradition of a strong nation state, the power relationship is asymmetric rather than symmetric in general (Pike, 2007: 1145; Castells, 2009: 10).

The recognition of overlapping authority and possibilities for action raises the question of how to manage the process to avoid duplicative or conflicting action. One approach to the management of responsibilities is a formal consideration of 'devolution.' Devolution

means a “delegation of power to a lower level, especially by central government to local or regional administration” (*the Oxford Dictionary*). Viewed in this way, devolution is a process initiated by the nation state with the ‘local or regional administration’ being the passive recipient of new powers or authority. Devolution may or may not be seen as favourable by regions. For example, it is possible for the state to delegate responsibility without providing the resources or the taxation authority necessary to raise the resources to fulfil the responsibility. Devolution may help to increase the interconnectedness between nation state and regions, with the nation state increasingly influenced by events and decisions made outside of its direct administrative control. At the same time, decisions taken by the nation state will have consequences that differ across regions or localities creating diverse responses and increasing the demand for political cooperation between nation state and regions (Hill et al., 2012: 14).

The rise of regional policy actors, regardless of whether it stems from local activism or from processes of devolution, will inevitably lead to tensions and conflicts regarding views of development (Counsell and Haughton, 2003: 231). In South Korea, political tensions between the nation state and the regions, and conflicts between a region and its neighbouring regions, have been increasing rapidly over the span of the last decades (Kim Jungbu, 2013: 121). This makes the traditional ‘planning’ approach to regional policy vulnerable, as it creates serious delays when it comes to taking united action and contests the ‘relegation’ of implementation to the level of the region. A number of conflicts, largely concerned with land–use planning and upgrading local industries, have emerged in the field of regional policies and development.

This thesis investigates the change in regional development and industrial policy resulting from the move from nation state-centric to polycentric (the nation state and multiple regions) sources and processes of implementation. It may be expected that the imbalance of power between nation state and regions will continue to be a significant source of

tension and a defining feature of the political economy in South Korea. This move toward polycentric relationships is an increasingly important issue in the recent industrial development in South Korea. In the past, such a subject would have been relatively uncontroversial. South Korea has long been seen as embodying the possibilities for nation state-led and/or nation state-business economic development. In the post-Korean war period, the country experienced rapid growth and convergence in an economy guided by state technocrats.

In this thesis, our particular focus is on how a region achieves a growing voice and capacity to initiate as well as manage regional development and industrial policies. So, it is necessary to deconstruct the state by investigating sources of power autonomous from the state and the resistance to this autonomous power. Thus, although it is evident that a nation state's role is deeply connected to its relationship with its regions, little research has considered case studies of South Korea's regional power that could verify, illustrate, and develop the theoretical possibility of an emerging polycentrism in industrial policy. This is the lacuna that the current research will address.

### **1.3 Research proposition and research questions**

To address the polycentric relationship in RSI, there is a need to consider what could explain the change processes and behaviour, which can then complement insights into the post catching-up economy in South Korea.

One crucial assumption in this thesis is that the nation state is restricted to using uniform regional economic policies in the regions. Even if the central government could simultaneously implement distinct policies, due to information limits, it may be difficult for it to monitor or appropriately evaluate the results. This stems from limitations in the



capacity of central government, which should diminish rather than increase over time with the growing wealth of the country.

We then consider two important interpretations of the change in relations between the nation state and the regions. The first interprets the change as a monocentric state 'directed' process, and the second views it as involving the emergence of a polycentric dynamic in which local regional autonomy competes with the role of the nation state with regard to initiation and implementation. The 'directed' process implies that the central government needs to choose one of the available blueprints or pathways for moving forward in development.

An emergent process might be driven by one or more of several causes: 1) it might occur because of indecision by or weakening of the central state, which impels autonomous action; 2) it might be the result of a process of deliberate 'devolution' – in this case, the initiation might be from the nation state, but the subsequent process becomes emergent as regions take up their devolved powers in different ways; or 3) it might result from the process of polycentric growth in which regions accumulate greater wealth and power and thus demand greater autonomy and use whatever autonomy they have to increase the scope of their local agency. In all of these cases, the nature of industrial policy can no longer be considered to be 'directed' by the nation state as a central actor but is emergent from a polycentric process. The underlying overall questions of this study can be expressed as follows:

*How can a major change in the regional system of innovation be identified and characterized? Is it possible to distinguish between change as an emergent process (not attributable to any specific actor) and change as being "directed" (principally controlled by a single actor or groups of actors)?*

When considering the past legacy, it would be difficult to answer the above questions in a definitive way. Therefore, the overarching question has been broken down into specific research questions; these will be referred to as the research questions throughout the thesis.

In particular, the term 'conflict' is useful in explaining the process of emergence and contestation. 'Conflict' is defined in this thesis as "the existence of tension, annoyance, and animosity between two or more separate organizations that are not necessarily involved in any collaborative activities" (Simons and Peterson, 2000: 102). Thus, conflict among actors is mainly due to diverging perceptions and preferences. Actors may disagree about the need for a regulation or intervention, argue about the causes of a political problem, or have different ideas on how best to solve a problem. If the preferences of coalitions are based on fundamentally different views, values, and problem definitions, the conflict is supposed to be more intense. If preferences differ due to material interests or technical details, conflict is lower, and the actors find it easier to reach a solution.

When the nation state and the regions have different or opposing priorities, their interaction pattern will more likely be one of conflict. Research is needed to identify the different perspectives and apply them in a different way, raising questions about the extent to which specific aspects of the context produce different relationships between regional characteristics and behaviours during a conflict situation. There may exist bottlenecks, blockages, or conflicts in the course of the change process. In addition, a region may resist or facilitate change in order to maximize individual or collective interests. In order to examine this relationship, the following empirical research questions are useful:

*First, what was the relative importance of the different factors that may cause changes in the regional system of innovation in the case study at hand?*

*Second, are the initiating actors trying to change towards a more regionally networked system in a coherent way, or are contests over purpose and method protracted?*

*Third, what conflicts has the initiating actor (either central or regional) encountered in the course of change, and why do these arise?*

*Fourth, how have these conflicts persisted or been overcome in the regional system of innovation to date?*

These are important questions, and even partial answers to them would further aid an understanding of industrial development in South Korea. A theoretical explanation of the emergence of new initiatives must be able to explain how competing actors and their philosophies are resolved to permit the initiative to go forward. Such a study requires more consideration of the processes of accommodation and compromise than a regional economy development study would usually offer. In other words, it is more oriented towards the processes by which change occurs than the specific pathway that emerges or that is planned.

Obviously, the guiding principle is not only the research questions but also the theoretical perspectives, which are discussed in the next chapter. Providing answers to these questions may lead us to a greater understanding of the change phenomenon as well as inform learning interventions related to regional change management for policy makers in the region.

## **1.4 Thesis layout**

This thesis consists of eight chapters. This chapter, Chapter 1, has explained the motivation, objectives and limitations of earlier research. It has defined the research questions and illustrated the expected contributions.

Chapter 2 provides the background to the discussion by looking at how (geographical) economists and political scientists understand the regional economic development and political economy. The first is the RSI approach. The purpose of the review is not to provide an exhaustive overview of the literature of RSI. Instead, the aim is to examine the background literature with an open-minded attitude towards the possibility of combining different studies and to implement different views in explaining the rich in-depth data collected in the context of South Korea, as one single theory cannot achieve this task. The chapter continues to explore varieties of insights of capitalism into the processes of state transformation. This leads us to discuss the main debates in the current literature on political economy and to derive some key criteria that are relevant to the South Korean context. The chapter then turns to discuss the relational perspectives as developed by Hay (2002) and Jessop (2008) as the main inspiration for the theoretical approach of this study; it aims to apply these perspectives to the case study. The result of this is illustrated in a conceptual framework.

Chapter 3 discusses the methodology and the rationale behind the case selection. While this thesis consists of a single qualitative case study, the empirical analysis is guided by the theoretically grounded constructs in this chapter and the preceding chapter.

Chapter 4 provides a more complete examination of the historical context of South Korea, complementing the previous introduction of the literature regarding the studies of South Korea considered in Chapter 1.

Chapter 5 gives a brief overview and identifies the characteristics of the case region analysed in the study. In doing so, it aims to address the question of how and why regional development plans are, or can be, changed according to the political ambitions of the new regime.

Chapter 6 is dedicated to explaining the current policy initiatives of Gyeonggi province. This chapter provides evidence of policy change in one particular provincial government in response to the introduction of recent central government reforms, and it identifies the strategic actions of the provincial government. This action is conditioned by the region's history and resources and by central government's policies, which influence the provincial government's strategic options. The main structural background provided earlier in Chapters 4 and 5 is supplemented here by a more detailed analysis of the process at the provincial level. A key aim of this chapter is to elucidate the different perceptions of the regional actors with regard to industrial policy. Thus, this chapter helps to explain the particular characteristics and articulations of the development of specific strategic actions. Since Chapter 6 is particularly concerned with changes in which politics play an important role, this chapter considers the 'blossoming' of the regional actions, and the next chapter will consider the 'direction of travel' and 'changes' in the story described in this chapter.

Chapter 7 examines the change of the RSI in Gyeonggi province. We bring together the insights on the strategic-relational perspective into RSI in a discussion of the potential, difficulties, and limits to provincial government as an agent of change and examine how it thus limits the growth of a polycentric governance of industrial policy. Initially, we highlight the main issues from the debates on change concerning a regionally networked system, where national interventions imbue the RSI with a 'planning' character. We introduce national agencies' responses to actions taken at the regional level. We then identify the sources of continuing tensions. The chapter concludes by questioning whether in a structure- and agent-based context of continuity and change, provincial

government is emerging as a new source of initiative (hence indicating the emergence of polycentrism) or whether provincial government continues to be subordinate to the initiative of central government, experiencing relegated responsibilities rather than exercising devolved or autonomous powers of initiative and implementation.

As a way of conclusion, the final chapter, Chapter 8, responds to the main research proposition and research questions. The chapter uses the outcomes of the fieldwork of this research to reflect upon and respond to the theoretical approaches and insights presented in Chapter 2 to highlight the theoretical understandings of the region's engagement in the processes of industrial policy and socio-political transformation.

## **2 Theoretical perspectives and framework to understand changes in the regional system of innovation in South Korea**

This chapter briefly outlines the theoretical perspectives on economic development at a national and regional level. Economic development represents one of the central questions for nation state actors and for actors that are situated within regions. Economic development is a field of study in which economists have brought in understandings from associated disciplines, such as geography, political science, and sociology, with the disciplinary boundaries between geographical and political science often being blurred in answering questions about regional development.

First, we consider the theoretical perspective on economic development at the regional level. This involves introducing the various schools of thought concerned with economic development and growth in general and policy making in particular. Different theories are introduced to provide a background to economic development and growth. Despite the criticisms of the system of innovation approach, the RSI approach is still a very useful approach in identifying an empirically driven set of relations and explaining the existence of continuity of interactions using systemic reasoning.

Second, we consider the literature on political economy. The emergence of a regionally networked system cannot be explained simply by the occurrence of a new structure; it also depends on the change of actors, the relationship, and the new order. The political economy perspective covers the interplay of these changes at the national and the regional level. This in turn allows us to develop a number of theoretically grounded issues regarding the change to a regionally networked system.

Third, we advance a political perspective that might be used to grasp the interaction in the process of moving to a regionally networked system. We introduce a strategic-relational approach to the interaction between a nation state and the regions. Its

strengths as well as its weaknesses are discussed, and an attempt is made to extend RSI beyond its original temporal and spatial limits.

## **2.1 Perspectives on regional economy and growth**

A fundamental aspect of regional studies is understanding the dynamic of regions as they are influenced by the rapidly changing global capitalist economy (Storper, 1997: 181). The importance of this concern has intensified since the 1980s with neo-liberalism and its emphasis on the primacy of markets, which has pervaded economic thinking and policy making (Dunford and Greco, 2006: 58-61). Despite the strong forces of the globalization of knowledge flows, empirical evidence shows that the “geographic or location-specific sources of competitive advantage will tend to become more, not less, important” (Enright, 2000: 117).

The reasons for this increasing importance of local-specific sources of competitive advantage are closely related to the recognition that knowledge and learning have a regional character and often involve ‘social’ and ‘cultural’ issues, such as the formation of a consensus and the development of institutional supports to the economy (Lundvall, 1992; Asheim and Dunford, 1997; Maskell et al., 1998). Particularly, ‘regional competitiveness’ as a determinant of economic performance has increased the importance of knowledge creation and transfer in regional economies (Storper, 1997; Camagni, 2003; Porter, 2003; Moulaert and Sekia, 2003; Malecki, 2004).

Currently, there are two sets of theories on regional economy, both of which have focused mainly on the context of developed country, though they have been applied far more widely (Amin, 1999; Boschma and Martin, 2010): the endogenous growth theory of economics and the institutional theories of economic geography.



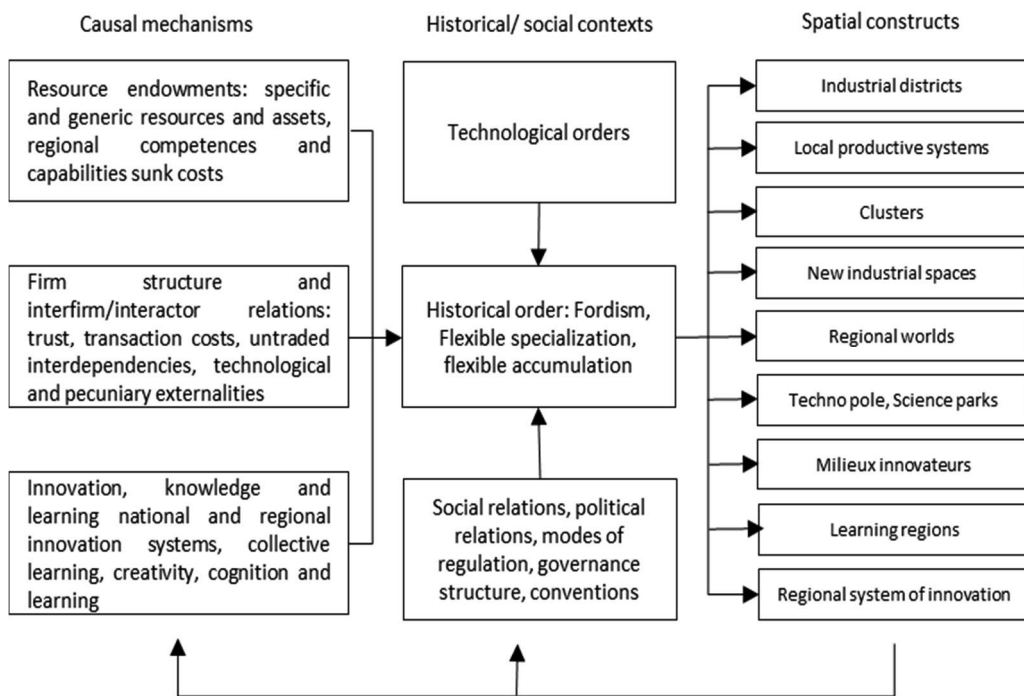
On the one hand, endogenous regional growth theory seeks to explain growth in terms of agglomeration and externalities (Cantwell and Iammarino, 2003; Dawkins, 2003; Boschma, 2005; Frenken and Boschma, 2007). On the other hand, the concept of embeddedness and path-dependency, which emphasises the role of relations in institutions, has given rise to the powerful approach of regional economic development that draws on a range of complementary literature on industrial districts (Becattini, 1989, 1992; Scott, 1988), local productive systems (Lombardi, 2003), industrial clusters (Porter, 1998; Martin and Sunley, 2003), new industrial spaces (Scott, 1988), regional worlds (Storper, 1997), technopoles or science parks (Simmie, 1994; Castells and Hall, 1994), *milieux innovateurs* (Camagni, 2002), learning regions (Grabher, 1993; Florida, 1995; Morgan, 1997)<sup>10</sup>, the triple helix theory (Etzkowitz and Leydesdorff, 2000), and regional systems of innovation (RSI) (Cooke et al., 1992).

All of the authors cited in the previous paragraph claim that the interactions of local actors create agglomeration phenomena within a territorial system (see Figure 2-1). They offer complementary insights into the forces shaping public attitudes in contemporary modern regional economies.

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<sup>10</sup> 'Learning region' is informative for understanding collective resources. The whole region is able to systemically create synergy in sharing knowledge and ideas and generating actions, which contributes to the interests of the whole. The progress is self-reinforcing, as managers objectively review their progress. Olbertz (2002) looks at the attributes of a learning region in the context of the Aachen region of Germany; the region was relatively small in size and it must be appreciated that creating a learning region is not an easy task. However, wherever it can be achieved to some degree, the literature noted suggests that there are likely to be substantial benefits.

Figure 2-1 Spatial structures and causal processes in the new economic geography



Source: Dunford and Greco (2006: 28)

The RSI approach is clearly neither an endogenous economic growth theory nor an institutional theory of economic geography (in part, because the RSI concept is employed by economists). Rooted in an evolutionary perspective of socio-economic change, the RSI approach highlights the influence of institutions on the economic development process (Hollingsworth, 2000; Malmberg and Maskell, 2010) and the importance of integration between actors, spanning the public and private sectors to the creation, diffusion, and embedding of knowledge within regions (Simmie, 2003; Malerba, 2005; Mowery and Sampat, 2005; Asheim et al., 2011: 878). Thus, it emphasizes social capital, networking, and learning as involving evolutionary processes, and it can be contrasted with previous approaches to localisation, such as the concept of the 'cluster', which emphasises the relatively static ideas of endowments and the articulation of localised industrial structures. The main critique of the 'cluster' approach is that it focuses too narrowly on the specialised activities associated with particular outputs and often ignores or bypasses

efforts to explain the complementary factors necessary for these specialised activities to succeed. The consequence is that while clusters may be identified, their identification provides little insight into how they may be created and may even lead to inappropriate policies, such as attempting to increase the number of firms engaged in the specialised activity.

We take the RSI approach as the theoretical starting point, focusing on the dynamics of the reconfiguration of RSI rather than just describing the existence of actors and their inter-connections at the regional level.

## **2.2 Regional system of innovation**

The RSI approach provides a useful way to observe regions where certain regional characteristics play an important role in the economic process. The approach has attracted increasing attention from academics and policy makers (particularly in supranational organizations such as the OECD). Despite the popularity of the RSI approach in the academic literature and in policy practice, multiple interpretations and uses of the term co-exist. This is because the theory has no way to order the relative importance of the actors and the relations; this importance is likely to vary according to the situated context, and thus it is difficult to make generalisations. Instead, the RSI approach constitutes a diagnostic heuristic, a guide to making situated analyses. In addition, there is still ambiguity in the RSI concept; we still need to define in a pragmatic way what it is considered to be an RSI in this study.

### **2.2.1 The concept**

The concept of RSI originated from the national system of innovation (NSI) (Howells, 1999: 78; Iammarino, 2005: 499). Since the concept of NSI was first used by Freeman (1982) and

Lundvall (1985), it has become a substantial field of research (Freeman, 2002: 194; Cantwell and Iammarino, 2003: 10-11).

The national systems of innovation (NSI) literature made enormous strides in defining innovation, correcting the perceived wisdom about innovation processes by 'showing them to be interactive', non-linear, and introducing the important concept of 'institutional learning' into this more systemic analysis of innovation. (Cooke et al., 2004: 17)

The NSI approach focuses on the commonalities applied at a national level, while the RSI approach focuses on the heterogeneity and distinguishing features of regions. Just as the boundaries of the NSI can be indistinct (e.g. because many industries are situated in global structures of knowledge and production), so too are the boundaries of the RSI, which draws upon national institutions as well as the national language and culture.

An important reference in the debate on technology is the work of neo-Schumpeterian economists, who were interested in the long-term dynamics of capitalist economies, including the incidence of cycles, both short and long. One of their most important contributions to the examination of economic cycles is that of techno-economic paradigms, that is, technological systems that have such deep impacts on the way the economy behaves that they alter the prevailing paradigm of economic activity (Freeman and Perez, 1988: 47). In this sense, the evolution of technological systems could be described as a process of emergence, acceleration, and deceleration of new techno-economic paradigms.

With the development of the system of innovation, economic geographers found that studies of systems of innovation at a regional level were also important. Their investigation of the regional level flowed from the idea that knowledge, skills, and capabilities are not freely available, as might be suggested by a neoliberal global market perspective. Cooke et al. (1997: 476) introduced the appropriateness of the regional level

as a starting point for the analysis.<sup>11</sup> Lundvall (2007: 99) himself, in a paper on NSI, indicates that “there is a need to study not only the national level but also networks at, for instance, the local and regional level”. Similar arguments can be found in Freeman (2002: 196-198).

Cooke et al. are seen here to form the core of the RSI debate. Although there are often subtle differences in definitions, they give an initial summary of the prevailing definitions (Cooke et al. 2004: 331) as “systems in which firms and other organizations such as research institutes, universities, innovation support agencies, chambers of commerce, banks, government department are systematically engaged in interactive learning through an institutional milieu characterised by embeddedness”.

Cooke’s definition conceptualises a region as an area that comprises “a production structure” embedded in an “institutional structure” in which firms and other actors are systemically engaged in interactive learning (Cooke, 2001: 953-954). The concept was developed in the contexts of the consolidation of high-tech areas (e.g., Silicon Valley, 1985) and the revitalization of areas with a manufacturing tradition (e.g., Emilia-Romagna (1996), Baden-Württemberg (1994) and more European regions (1992, 2000)). Case studies explained the success of those regions due to their flexible production systems, learning capacity, innovation potential, and networking ability. Thus, his concept provides a broad picture of what an RSI study might actually focus on, though generally based on Western contexts.

The apparent differences here are the consequence of a) different foci in analysis, b) different empirical grounding, and c) the flexibility of the English language, which makes it possible to use different words to describe the same basic idea. Many eminent authors

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<sup>11</sup> For a detailed review of the development of the RSI concept, see Cooke (2008), D’Allura et al. (2012), Uyarra and Flanagan (2013), and Teixeira (2013).

have highlighted the clear and precise definitions in various aspects (Table 2-1). Other concepts are relatively narrower than Cooke's concept, but on another level, are more complex, since they seek to produce a descriptive account of the multi-dimensional character of regional innovation. They do not look at all at the features of the system, or related interactions, which are relevant to regional economic performance.

Table 2-1 Different understandings of RSI

Aspect	Understanding	Authors
Spatial and Institutional element	The interaction between structure and actors is bidirectional ...	Howells (1999: 78)
	RISs and their characteristics, including the institutional set-up, evolve through time to be distinctive to that certain region ...	Cooke et al. (1997: 479)
	An open system interacting beyond its boundaries ...	Schienstock and Hämmäläinen (2001)
	a set of interacting private and public interests, formal institutions and other organizations that function according to organizational and institutional arrangements and relationships conducive to the generation, use and dissemination of knowledge.	Doloreux (2004)
Knowledge and network	two separate subsystems that constitute the main building blocks of regional systems of innovation	Autio (1998: 113)
	the innovating firms surrounded by a number of actors who are all in one way or another linked to the innovation process of a local firm and to each actor	Meeus et al. (1999: 9)
	all important economic and social diffusion, and use of innovation	Edquist (2005: 182)
	crucial arenas for localized learning and tacit know-how sharing	Vertova (2006: 8)
	Encompassing these processes a regional milieu for continuous learning may emerge, which includes an efficient and embedded culture of knowledge sharing and circulation	Kautonen (2006: 270)

Source: author's own creation

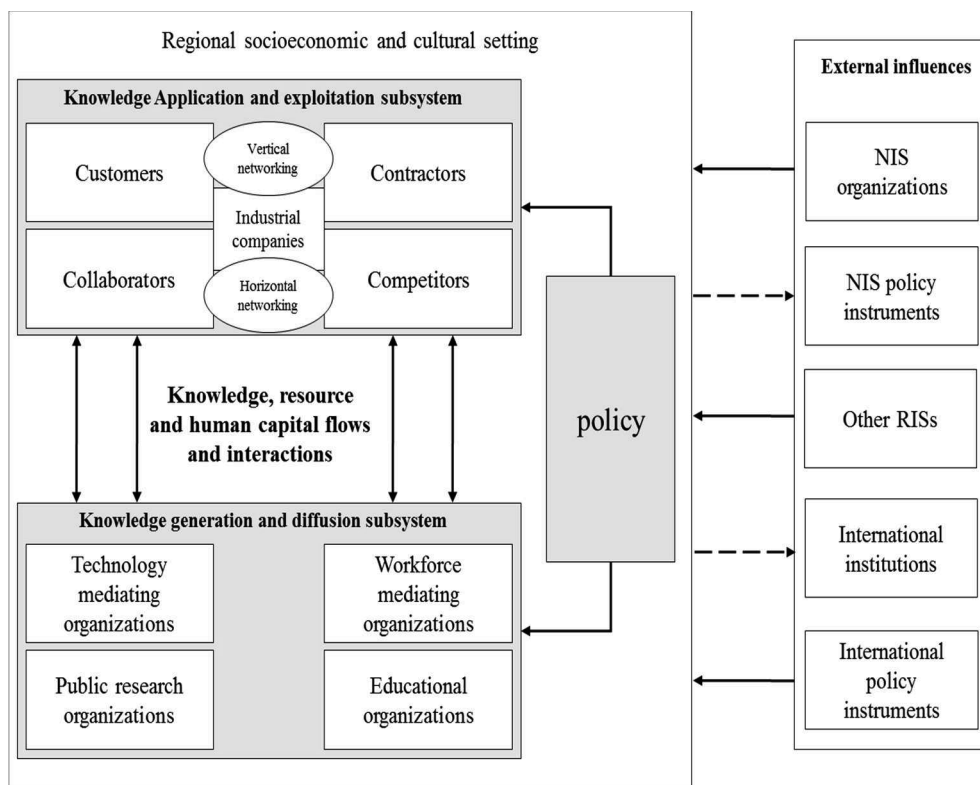
Before it is possible to analyse to what extent RSI are able to account for regions, we need to explore the specific characteristics of an RSI. According to Doloreux and Parto (2005: 134), theoretical aspects underpin the frame of the RSI approach: 1) interaction between different actors, and 2) the role of institutions. We consider each in turn.

First, implicit in the concept of the RSI is an emphasis on ensembles of related actors and on their economic interactions. These are considered to be nurtured by a "number of institutions of a private, semi-public, and public nature which act as a 'life-support' system,

especially for SMEs” (Cooke and Morgan, 1993: 555). That understanding of the approach does not lead to predictive theory but to a process of analysis, which has evaluative content and can suggest policy, but at a very micro level, that is, improving the connections and relationships.

Autio’s (1998) classical framework helps to explain what actors might be considered to interact in the RSI. He points out that an RSI is a social system comprising two interacting subsystems: *the knowledge generation and diffusion subsystem* and *the application and exploitation subsystem* (see Figure 2-2).

Figure 2-2 Overview of regional system of innovation



Source: Tödtling and Trippl (2005: 1206), originally from Autio (1998: 134).

*The knowledge application and exploitation subsystem* refers to the knowledge flows of firms and universities, whereas *the knowledge generation and diffusion subsystem* refers to the supporting actors, such as research institutions and the government. Universities,

technological laboratories, and public research organizations providing funding for technological projects would be, among others, part of the institutional infrastructure, while firms would be the main actors in the production structure. Ideally, there should be horizontal and vertical linkages among them. Most importantly, each subsystem provides support for the other subsystem. The knowledge generation and diffusion subsystem is clearly dependent on the application and exploitation subsystem to provide the resources with which to function.

Second, RSI studies are associated with an institutional aspect, whereas Asheim and Gertler (2005: 299) highlight the view of an RSI as “the institutional infrastructure supporting innovation within the production structure of a region”. Cooke et al. (1997) specify the institutional infrastructures that are crucial for an RSI. An RSI needs an effective infrastructure for learning and cooperation (productive culture), and financial sources for economic activities through which different players within the region can exchange knowledge, find collaboration partners, and obtain access to investment. In a later study (Cooke, 2001), the institutional dimension is redefined as cooperative culture, interactive learning, and associative consensus, while financial sources are discussed as a separate characteristic of RSI.

Amin and Thrift (1995: 104) observed the differences between thin and thick institutional infrastructures. Institutionally thin RSI are usually to be found in less urbanized regions and are characterized by the dominance of SMEs with limited innovative capacity, lack of support organizations, and low level of agglomeration compared to thick regions. Institutionally thick regions, in comparison, are often located in metropolitan areas. Thick RSI tend to play a more significant role globally than thin RSI. Amin and Thrift (1995) emphasized several elements that indicate the institutional thickness of a region: a strong organizational infrastructure, high levels of interaction, a culture of collective representation, and shared norms and values that serve to constitute the social identity



of a particular locality. The institutional thickness of a particular region also influences the geography of the knowledge linkages, or in other words, how different regions engage in global, domestic, or regional networks.

The institutional approach provides a wider scope for policy intervention because it is capable of establishing norms and rules that align with or coordinate the behaviour of the actors. Thus, institutional infrastructures play a key role in the RSI approach, where they are associated with historically grown professional competencies, shared cultural orientations, a prevalence of high levels of trust and collaborative practices, specific market structures, or even relatively autonomous regulatory institutions. All of these features are part of the perspective generally associated with the French 'regulation' school, which emphasises that the context in which economic structures emerge is deeply influenced by the surrounding institutions governing interactions; the market is only one of the institutions and is often the least important.

In summary, the RSI approach suggests that the interactions among firms, research institutions, and national and regional policy actors are essential for understanding innovation. During the innovation process, economic actors do not act in isolation, as they jointly contribute to the production, diffusion, and use of knowledge. Innovation represents the true engine for structural change, with a direct influence on productivity improvements, and firms play a central role in both creating and diffusing innovation. It is the specific characteristics of a region, its specific assets and networks, and not only the economies of scale or endowments allowed by geography, that influence a region's innovation performance. It needs to be stressed that the process of creation and strengthening of a 'proper' RSI does not cancel previously existing arrangements but rather empowers them with additional elements and interactions.

This poses several complex questions about how to change the reciprocal and often delicate relationships between autonomous actors. Because no actor alone can decisively influence the decision-making processes, coalitions of actors should be the main elements in an RSI. Hence, the focus is the 'polycentrism' of the regional policy process, as we discussed in the introductory chapter. Relations are not only the most important element of an RSI, but are also some of the most basic concepts in political science and public policy. A proper RSI results from the intersection of relations and illustrates the object of analysis of this thesis.

### 2.2.2 Change of RSIs

Having introduced the theoretical elements in the previous sub-section, we can see that the RSI literature provides a clear theory of heterogeneity and institutions but lacks a clear theory of change. This sub-section reviews several theories of change related to the RSI approach.

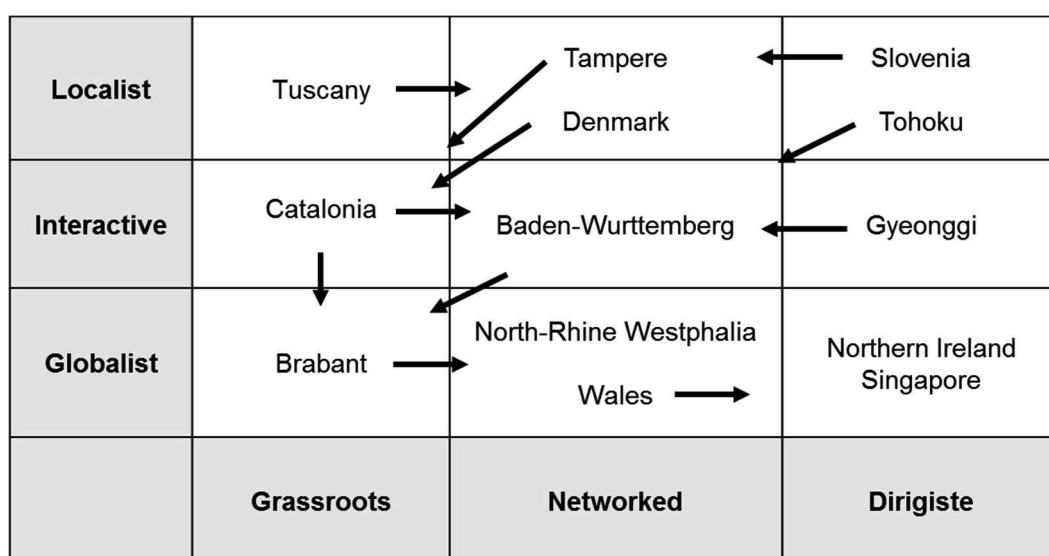
Regarding the governance dimension of RSI, Cooke et al.'s (2004: 11-13) distinction between grassroots, networked, and *dirigiste*<sup>12</sup>, underlines the fact that a region could possibly belong simultaneously in more than one of these characteristic categories (see Figure 2-3). More precisely, for instance, it has been claimed that particular regions are moving from a *dirigiste* to a network or grassroots kind of RSI. In the *dirigiste* structure, firms are mainly connected by vertical supplier-customer relationships. Hassink (2001) and Cooke et al. (2004) employ the term *dirigiste* in their research about Korea. In a country operating with a high degree of *dirigisme*, central government regulations and

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<sup>12</sup> The French word *dirigiste* comprises the tradition of central state intervention in the economy in French historical development. *Dirigiste* was first used positively to denote interventionist state policy in the French Fourth (1946-1958) and early Fifth Republics. However, it is now negatively used to indicate excessive intervention (Schmidt, 1996: 376-377).

control are a significant part of current economies. This reflects a linear innovation concept, in which basic research, applied research, development, and production can still be decoupled, and system relations can be achieved with minimal regional cooperation. In contrast, a networked RSI is “more likely to occur when the institutional support encompasses local, regional, federal and supranational levels, and funding is often guided by agreements among banks, government agencies and firms” (Cooke, 2006: 8).

Figure 2-3 Regional systems of innovation: typology and evolution



Note: Arrow indicates direction of RSI movement 1995-2003.

Sources: Cooke et al. (2004: 15).

Similarly, Asheim and Gertler (2005: 300-303) developed the typology of RSI based on the links between the ‘institutional set-up’ and ‘patterns of knowledge production and production structure in regions’ using qualitative case studies. They distinguish between ‘territorially embedded RSI’, ‘regional networked innovation systems’ and ‘regionalized RSI’.<sup>13</sup> Tödtling and Trippl (2005) identify a typology based on three main barriers: lack of

<sup>13</sup> Analytical factors are a) the extent to which they are internally and externally integrated: the location of knowledge organisations (locally or outside the region), b) the knowledge flow (interactive or more linear), and c) the stimulus for cooperation (geographical, social, and cultural proximity; planned, systematic networking; and the sharing of the same education and common experience by people).

organisational thinness (lack of relevant local actors due to low clustering and a weak endowment of relevant institutions), fragmentation (lack of interaction and networks), and lock-in effect (industrial specialisation in traditional industries and outdated technologies). They describe three types of regions in accordance with problem areas and regional innovation deficiencies: 'peripheral region (organisational thinness)', 'old industrial regions (lock-in)', and 'fragmented metropolitan regions' (Tödtling and Trippl, 2005: 1209). Recently, in order to deal with this caveat and generate an RSI typology applicable to a broader number of regions, quantitative methods have also been used (Aguado et al., 2008; Muller et al., 2008; Navarro and Gibaja, 2009; Zygiaris, 2009; Ajmone Marsan and Maguire, 2011; Nauwelaers et al., 2013).

According to typology studies in both methodologies, RSI may possess different knowledge bases and technological capabilities so their influences on knowledge flows crossing regions are different. Some regions are in a vertical network, in which national actors play a dominant role for knowledge interaction, while others are in more horizontal relationships. These typological studies can be summarized in the following points: different types of RSI can be identified based on the following points: first, the degree of interaction between actors is a dependent variable for a typology, and second, such different degrees of interaction are achieved through clustering.

Furthermore, evolutionary economic geographers have the potential to explain more realistic and dynamic processes (Fuchs and Shapira, 2004; Iammarino, 2005; *Journal of Economic Geography*, 2007; Martin and Simmie 2008; Boschma and Frenken, 2009; Boschma and Martin, 2010; Cooke, 2012). Considering the economy as a dynamic, irreversible, and self-transformational system, evolutionary approaches are concerned with processes of adaptation, resilience, and changes in the system configurations. While some struggle with economic development, others are able to sustain or increase their competitiveness.

Regional and local economic development is far from a smooth and incremental process but is subject to all sorts of interruptions and disruptions: periodic economic recession, the unpredictable rise of major competitors elsewhere, unexpected plant closures, the challenges arising from technological change and the like. (Simmie and Martin, 2010: 27)

Fuchs and Shapira (2004) are not particularly interested in why regional economic activities remain stable, but rather consider why they change. According to them, actors' behaviour is guided by regional conditions, and these conditions exist because of the constant confirmation in relations. They distinguish between two levels of regional change, namely, localized change and structural change. Localized change is "shaped and constrained by its past (structural inertia may cause lock-in), it is systemic and interdependent, it involves (interactive) learning, it is of an incremental, cumulative and localized nature, and it tends to flow certain trajectories (defined in technical, economic and spatial terms)" (Fuchs and Shapira, 2004: 251); however, structural change is more radical.

Consequently, the process of transition involves dealing with structural change and complex interactions. The latter are characterized by various reinforcement mechanisms, which may be an important source of regional 'path-dependency' and lock-in.<sup>14</sup> Martin and Simmie (2008: 186) argue that "new paths do not emerge in a vacuum, but always in the context of existing structures and paths of technology, industry and institutional arrangements". Change can be seen as an evolutionary process, during which the system

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<sup>14</sup> The term 'path-dependency' is seen to either enable or constrain regional economic adaption in response to a shock and the development over time. In the presence of bounded rationality, an actor's behaviour is guided by the routines through which they create, and adapt to, novelty through learning. Routines can be understood as decision rules or as regular and predictable behavioural patterns (Nelson and Winter, 1982: 17-18). The way these evolutionary trajectories unfold would therefore be path dependent. Sub-national entities and path-dependence are therefore clearly linked. 'Path' refers to an actor or group of actors' previous behaviour and repertoire of routines and how these constrain the actor/group's future. Path-dependency, therefore, refers to the function of a region's current position, the history of the strategic decisions it has taken, and the strategic alternatives in the future.

sustains its adaptive capacity. The evolution of socioeconomic systems entails trend breaks, cycles, moments of instability and discontinuity, and qualitative change. As Boschma and Martin (2007: 545) note, "Path dependent processes have a quintessential 'place-dependent' character, so that it is not simply a case of arguing that path dependence produces places, but equally that places produce path dependence." In addition, the emergence of the new industrial activities is stimulated or enabled "by pre-existing resources, competence, skills and experiences inherited from previous regional paths and patterns of economic development" (Simmie and Martin, 2010: 6). Lock-in of a dominant technology explains why it may be very difficult to alter the structure of a system and the direction in which changes in the system are unfolding.

A limitation of previous theories to change is their analytical focus on the aggregate above the regional level of pre-existing actors and dominant interactions. At the regional level, however, there are many change processes that are worthy of further consideration. These include the entry and exit of actors, changes in the types of products and services firms in the region produce as well as changes in the type of inputs they require, and the changing supply of labour with different education profiles, skills, and competences. These intra-regional change processes may suggest that overall changes in the RSI are regional in scope. In this context, the balance of power between central and regional actors may appear rather abstract. However, it is precisely because of the importance of change within the region that the balance of power between the state and the region may matter because, at its heart, the challenge of improving the RSI may improve the capability of firms, universities, and other actors, and many decisions regarding these capabilities are taken at a local level.

It can be concluded that analysing change in RSI requires a consideration of non-economic factors. For example, as Dunford (1998) underlines, economic circumstance cannot be created simply by policy or law. The change to a new process depends on several other

parameters that are not the same among different countries or even within a state. These differences arise because of differences in the previous regime's nature; structural adjustment processes in regions and the capacities, both present and future, of institutional arrangements.

In the emergence of such a regional development regime, power relationships are involved in balancing the contradictory demands of regional learning processes (Heidenreich, 2005: 743). More specifically, concerning changes in RSI, two diverging arguments may exist on relations regarding the change process. On the one hand, low conflict or tension among actors facilitates the change process. A widespread agreement on goals and the way a policy output should be designed facilitates the common elaboration of important changes in the respective policy. Converging preferences alone might not be sufficient, but on a basic level, they allow change to occur. If, on the other hand, actors are in conflict about the problem definition or the best policy output for the solution of a problem, it is probable that the policy output will be the lowest common denominator solution and one that is close to the status quo. Conflict over policy goals and design stimulates the search for new solutions and therefore may support more fundamental change. Hence, conflictual relations have the potential to lead to rapid shifts in policy outputs or sustained deadlock, whereas consensual networks foster the status quo. The reasoning behind this argument is that a low level of conflict means that most actors agree with the existing policy. Therefore, there is a high chance that the actors will simply renew the existing path.

Before proceeding to articulate the conceptual framework employed in this thesis for examining RSI change, it is useful to look at the literature on the political economy of South Korea with a particular focus on the articulation of the nation state and regional relations (Rhodes, 1981). Regional development and industrial policies cannot be linked solely with national factors and nor can they be separated from the global context (Hettne,

1999: 2). It is evident from the political economy literature that the political dimension plays an important role, particularly in the context of capitalism in South Korea, as is illustrated in the next section.

### **2.3 Political perspective of economic development in South Korea**

There are two broad views of South Korea's economic development for the purposes of this thesis. The first is that South Korea was able to develop successfully because it pursued market-oriented policies, such as free trade, with interventions by the government being largely irrelevant to the sources of success, which are attributed to firms. According to this explanation, South Korea encountered a crisis because of the immature state of capitalism in the country, including collusion between politicians and the business sector. The second explanation is that active state intervention was the cause of economic growth but that crises were precipitated by the liberalization of the market and the relaxation of regulations. This is referred to as a theoretical debate about East Asian development.

#### **2.3.1 The East Asia development**

As was mentioned in the introductory chapter, South Korea was initially discussed in terms of a centrally planned economy. It is closely tied to a larger consideration of the politics as an object of research, which emerged within the work of a number of influential economists and political scientists (Johnson, 1982; Zysman, 1983; Cumings, 1987; Amsden, 1989; Wade, 1990; Woo-Cumings, 1999; Kong, 2000; Pirie, 2008; Hundt, 2009).

A defining characteristic of the economy in South Korea is the high degree of state intervention in the economy, exemplified through terms such as "governed markets"



(Wade, 1990), “governed interdependence” (Weiss and Hobson, 1995), “embedded autonomy” (Evans, 1995), “newly industrial countries (NICs)” (Pack and Westphal, 1986; Balassa and Williamson, 1987), “bureaucratic authoritarian industrializing regimes” (Cumings, 1987:81), “crony capitalism” (Kang, 2001), “catching-up”<sup>15</sup> (Hobday, 1995; Kim Linsu, 1997; Kim Linsu and Nelson, 2000; Fagerberg and Godinho, 2005), “neo-Schumpeterian contribution” (Freeman and Perez, 1988; Malerba and Nelson, 2007), and “Korea Inc.” (Shin Jang-Sup and Chang Ha-Joon, 2003; Lee Sook-Jong and Han Taejoon, 2006).

Although employing different terminologies, the above authors portray development as a process in which in East Asia, the state had been an important actor during the post-WWII period (Skocpol, 1979; Evans et al., 1985).<sup>16</sup> The state is portrayed as ubiquitous in both the economy and society, and as being penetrating, comprehensive, highly articulated, and autonomous of particular groups and classes. According to Johnson, rapid growth in South Korea has been due mainly to the adoption of a degree of government authoritarianism based on the example of Japan (Johnson, 1987: 143). Johnson’s central contention is that much of South Korea’s industrial development between the 1960s and 1980s was achieved due to the role of the state’s leadership in the process. South Korea has adopted the interventionist style of the Japanese state in 1930s and 1950s, but it takes a more direct role in the market. The role for central government is facilitated by a strong

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<sup>15</sup> The point technology-oriented views make is that South Korea had further established and upgraded capabilities before moving toward more marketization since the mid-1980s. Scholars argue that technology developments in Korea seem to follow a “reverse order” of the A-U model (Utterback and Abernathy, 1975), a model of acquisition, assimilation, and improvement (Kim Linsu, 1997), as it started by obtaining mature technology from developed countries. Hobday (1995) confirms this general reversal process at firm-level as follows: assembly skills, incremental process changes for quality and speed, full production skills, R&D for products and processes, and competitive R&D capabilities. This process is analysed in terms of interacting technology and market transition from OEM, to ODM and OBM.

<sup>16</sup> Some studies (Chang Ha-Joon, 2002, 2006) emphasise that the government’s role in East Asia need not suggest that it was unimportant elsewhere.

public-private agreement on what is beneficial for the country and by a widespread nationalist brand of team spirit (Johnson, 1987: 144). The core argument is that a late-industrializing economy should be a developmental state with the government intervening in economic activities to resolve various problems at the nascent stage of development (Johnson, 1987: 145). Johnson's interpretation has been widely accepted, and many of the studies that have employed the mainstream economic standpoint define South Korea as a state-led economy, although regime categorization has been used at times.

Evans's (1995) analysis of late development in South Korea is a notable articulation of the state-led development thesis, as he considers that "embedded autonomy" is accompanied by the development of close relationships between central government and major firms (Evans, 1995: 49). He argues that the state could be embedded in societal interests but in such a way as to also secure them a guaranteed high degree of autonomy. The close relationship between bureaucrats and the private sector has been an aspect of the state's ability to control and co-ordinate the private sector with the aim of achieving growth (Evans, 1995: 12). One of the key elements of the relationship has been the capital (often as credit) that the state had available and that it could use to invest selectively and strategically in sectors in a capital-scarce environment (Evans, 1995: 53). Central government picked specific sectors, such as semi-conductors, automobiles, and telecommunications, and specific private players, such as Samsung, Hyundai, LG, and SK (so-called *Chaebol*<sup>17</sup>), that is, multi-national corporations, were appointed as South Korea's engines in the global economy. The government constructed *Chaebol* through a

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<sup>17</sup> Etymologically, the term *Chaebol* comes from the roots *chae*, meaning wealth, and *bol*, meaning clan or faction. The four largest *chaebols* (Samsung, Hyundai, LG, and SK) are strong in a wide range of activities, including automobiles, shipping, banking, tourism, and life insurance. For example, SK is composed of 92 subsidiary and affiliate companies (e.g., SK Global, SK Chemical, SKC and SK Hynix) that share the SK brand and culture (Jang Sea-Jin, 2003: 168).

series of government-forced mergers.<sup>18</sup> When *Chaebol* lacked capital, the government financed them through guaranteed domestic market. When *Chaebol* were deficient in technology capability, public research institutions helped them (Jang Sae-Jin, 2003). In a similar vein, Cumings (1987: 71) describes the “bureaucratic authoritarian industrializing regimes” of South Korea and Taiwan. The state is ubiquitous in both the economy and society, penetrating, comprehensive, highly articulated, and autonomous of particular groups and classes.

In contrast, Chang Ha-Joon (2002: 1-6) argues that the state-led economy is not a particular response that happened in specific historical contexts in East Asia, but instead is a universal feature common to all successful economies at an early stage of their industrialisation, including western countries, currently hailed by liberal market advocates as a paragon of success.

While the political economy in South Korea historically is thus relatively unambiguous, there is little agreement on what type of capitalism it should be classified as having today. There were important reforms in the 1990s, which were aimed at devolution as well as a neo-liberal economy (Hill et al., 2012: 4). The reform objective became to simplify the public administration. In addition, hierarchical governance lost some of its attraction in the 2000s when the market governance movement and new public management (NPM) became the focus of reform.

While recent debate has discussed the phenomena associated with the withdrawal of the state as a ‘director’ of products, this decline in direct state intervention has been matched by an increase in the state’s indirect influence via growth in the regulatory apparatus. The

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<sup>18</sup> For instance, Hyundai Mipo Dockyard (HMD) is now one of the biggest shipbuilders in the world. The government was much involved in Hyeonai’s shipbuilding industry in 1975 (for further details, see Jones and Sakong, 1980). See also ‘The *Chaebol* conundrum’ (*The Economist*, 31 March 2010) or ‘Heavy metal: life at the world’s largest shipyard (BBC news, 30 May, 2015).

nature of these transitions nevertheless has conformed to existing institutional traditions that have tended to preserve power for the status quo. What are these existing traditions, and how have existing directors implemented rules that enhance, rather than hinder, competitiveness?

### **2.3.2 Varieties of Capitalism perspective**

The above questions have emerged among political scientists working on the transition of political economies. Scholars have started to ask whether transition has led to multiple varieties of capitalism (Amable, 2003; Boyer, 2004; Coates, 2005; Schneider and Paunescu, 2012).<sup>19</sup> Particularly, this debate is mostly inspired by the seminal volume on varieties of capitalism edited by Hall and Soskice (2009). Their perspective argues that there is a deep web of intertwined government institutions that have been shaped over decades and centuries by each individual country's culture.

The perspective goes beyond developmental state studies in examining the several domains underlying the variation between types of capitalism. The perspective of the varieties of capitalism can be characterized as a firm-centric and institutional approach to capitalism (Hancké, 2009). It views firms as the main actors of a capitalist system, and the main goal is to understand how institutions shape their operations (Hall and Soskice, 2001: 6). It focuses on firms' activities in four domains, namely, 1) industrial relations, 2) corporate governance, 3) education and training, and 4) inter-firm relations as crucial to understand the competitiveness of a particular economy. A great strength of the varieties

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<sup>19</sup> For example, Boyer (2004) proposes four types of capitalism by highlighting how countries use a variety of regulatory institutions to deal with the instability of capitalism: state capitalism, meso-corporatist capitalism, social-partner capitalism, and market capitalism. In addition, Amable (2003), who performed a strictly quantitative and open outcome analysis with a wide range of statistical indicators, offers five regime types: Liberal, Social democratic, Asian, Mediterranean, and Continental European.

of capitalism literature is that it specifies the institutional components of economic systems and their interdependencies.

This perspective suggests that activities can be managed in two ways: market coordination or strategic coordination. Market coordination means that key relationships are managed by means of market transactions and formal contracts. In contrast, strategic coordination implies that firms rely more heavily on long-term negotiated relationships and implicit contracts with workers, creditors, and suppliers. As a result of synergies between activities or “institutional complementarities”, a particular mode of coordination tends to be predominant in any given economy. Firms rely on market coordination in liberal market economies and on strategic coordination in coordinated market economies (Hall and Soskice, 2001: 27).

In specific, in liberal market economies (LMEs), industrial relations are decentralized and individualized. Both employers’ associations and trade unions tend to be relatively weak. If there is any collective bargaining, it typically occurs at the firm level. Corporate governance is based primarily on the discipline imposed by stock markets, which means that firms seek to maximize shareholder value in order to maintain the confidence of footloose investors. Institutions are associated with a comparative advantage in rapid innovation, including new medical and information technologies. The key examples of liberal market economies in the OECD include the US, the UK, Canada, Australia, and New Zealand.

In contrast, in coordinated market economies (CMEs), where strategic coordination predominates, corporatist collective bargaining or negotiated agreements tend to play an important role. Corporate governance is based on long-term relationships between firms

and creditors, who provide “patient capital”,<sup>20</sup> that is, credit on a long-term basis, which also enables them to exercise a voice rather than just exist, as many portfolio investors holding shares might do in times of crisis. Given the emphasis on long-termism, workers are also more willing to invest in firm- or industry-specific skills, which are insured by a generous welfare state in the case of redundancies or the obsolescence of these skills. Such long-termism is also viewed as being associated with a comparative institutional advantage in skill-intensive manufacturing and sectors characterized by incremental innovation, such as the car industry. Examples of coordinated economies include Germany, Austria, the Netherlands, and the Nordic countries. In Central and Eastern Europe, Slovenia has been classified as a coordinated market economy as well (Crowley and Stanojevic, 2001; Feldmann, 2006).

Moreover South Korea specifically, the crucial point is that even though each of these varieties of modern capitalism has analysed capitalist diversity from a distinct angle and has identified a different number of regime types, there is no consensus in the literature about whether the case of South Korea should be classified as a LME or as a CME (Lee Soo Hee and Yoo Taeyoung, 2007; Carney et al., 2009; Steier, 2009; Terjesen and Hessels, 2009; Carney, 2015).

Increasing numbers of scholars have in recent years highlighted the existence of a third variety of capitalism as one in which the state plays a crucial role. While Witt (2012) and Witt and Redding (2013) sees South Korea as “plutocratic state-led capitalism” rather than as a CME, Thibergien (2007) calls it an “entrepreneurial state” along with France and Japan. Schneider and Paunescu (2012) identifies a “hybrid economies” of capitalism associated with Japan and Norway.

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<sup>20</sup> The classic example of such creditors who provide patient capital and exercise influence on firm governance are the traditional “Hausbanken” of German and the “main bank” of Japan (Smith and Walter, 1993: 44).

Kang (2001, 2002) proposes the term “crony capitalism” to indicate that South Korea had neither a more autonomous or coherent state and nor was it subject to any less corruption but that corruption had different effects on development. While cronyism can be viewed as a species of “rent seeking”, not all rent seeking is based on cronyism. In Kang’s view, the term ‘cronyism’ is rarely defined formally, but it is understood as referring to a pattern of business-government relations in which select business people who are very close to key policymakers receive highly preferential treatment that enables them to capture spectacular profits – even to the point that they dominate the corporate landscape. Kil Soong-Hoom and Moon Chung-In’s (2001) description of South Korea’s growth as “mercantilist” signifies that the state model is now being reviewed in relation to the regime model. They observe that the South Korean industrialization pattern was determined by a reformist leadership of a strong neo-mercantilist state. In other words, a powerful government was imperative to promote the preconditions of economic growth, such as trade liberalization, land reform, and the efficient distribution of limited resources, and South Korea’s peculiar presence in East Asia and being under a neo-liberal hegemony helped to meet these requirements. As such crony capitalism, or mercantilist does not feature in the literature as a varieties of capitalism.

At another nation-state level of analysis, Park Hun Joo (2002, 2004) provides a competing explanation that better captures why South Korea has gone through different types of capitalism that have led the country to maintain widely different industrial structures. He characterises South Korea as ‘diseased *dirigisme*’ and points out that a different form of deficient government intervention continued after democratisation. Taking a political perspective, he emphasises that *dirigisme* as a way of policy making and implementation is not, in and of itself, a problem, but the nature of *dirigisme* that the Korean authorities chose to practise (lopsided power structure and *dirigiste* institutional context) was a problem.

South Korean economy traverses the boundaries of Varieties of Capitalism's dichotomy of liberal and coordinated economies. While the coordinated form is also characterized by intensive ex-market interaction between corporation and state, the normative egalitarian orientation and extensive institutionalized mechanisms for inter-constituent bargaining found within the German system bear but little resemblance to the admixtures of meritocratic principles, and bureaucratic controls and economic incentives that characterize South Korea's political economy.

Some approaches may help to understand emergence and transition of South Korea. Schmidt (2009), for instance, argues that France cannot and should not be considered as CMEs because of a number of political characteristics they retain. Culpepper et al. (2006) and their contributors tackle the difficult task of highlighting and explaining the multiple changes that have taken place in France in the past two decade. They have the long term understanding the profound changes that have taken place in the French political economy in the quarter century since the election of Mitterrand and the arrival of the Left in government.

Thus, South Korea's political economy is at the stages of emergence and transition and does not easily fit into binary approach because the bureaucratic capacity essential to the operation of a CME is not easily developed. Nationalist leaders have articulated an ambitious developmental rhetoric that has often exceeded their bureaucratic capacity, consequently hampering industrialization due to an administrative capacity constraint.

## **2.4 The strategic relational perspective and a conceptual scheme**

Arguably, a problem in the RSI approach is that it does not address the fundamental cause of such political relations. It is necessary to understand the political dimension, which



reveals not only the inherent potential for conflict that exists in RSI, but also how power is embedded in the relationships. In the analytical framework employed in this thesis, we will consider how political relations are involved in the practice and analysis of change of RSI.

Increasingly, the relationship between state and regions (or between state and firms) is a communicative process based on dialogue, argument, negotiation, and persuasion, rather than a technocratic or information-driven process. Thus, it is to questions of discourse and power that we turn as part of further consideration of how studies in the literature have conceptualized power to date. This has been of key interest to political scientists, who have invested substantial effort in showing how power and conflict affect decision making. This section argues for the relevance of power as a relational concept and for the utility of the strategic relational perspective formulated by Hay and Jessop as an analytical tool in RSI.

#### **2.4.1 Relational concept of power**

What are power and relation analytically and conceptually? This question has long been debated in social science, especially in the fields of politics (Riker, 1964; Schott, 1984) and sociology (Lukes, 1974; Clegg, 1989; Haugaard, 2002). However, conceptions of power based on relations are a relatively recent trend in political analysis.

This thesis examines power as a relational attribute and a relational effect of social interaction. This aspect of power is heavily influenced by the work of Poulantzas, Foucault, and Gramsci, each of whom points to the ways in which power is not always something that can be held and deployed in a hierarchical sense. Rather, power emerges through social and economic activities, which construct power where it might not already exist.

Recently, the political literature on state and governance has tended to draw more heavily on the relational state theory developed in the work of Jessop.

Jessop (1990: 160) comments that power is “a form-determined social relation”. This means that we must consider not only the distinctive institutional form of the politics but also how the balance of political forces is determined by factors located beyond political relationships. Power is the site of strategies insofar as “a given state form, a given form of regime, will be more accessible to some forces than others according to the strategies they adopt to gain state power” and the nation state operates as “the site, generator and the product of strategies” (Jessop, 1990: 260). The state is the generator of strategies because it may play an essential role in enabling societal forces to mobilize particular accumulation strategies and hegemonic projects. The state is the product of strategies because its own organizational structures and modes of socio-economic intervention are inherited from earlier political strategies (Jessop, 1990: 261).

Hay (1995) outlines a more analytical conception of power while unfolding the dialectical interplay of actors. Power is not concentrated in and possessed by solely one actor or organization over another; rather, it is experienced through the capacity of actors to “have an effect upon the structures which set contexts and define the range of possibilities of others” (Hay, 1995: 191). Hay assumes that power is about achieving policy goals on the basis of organizational resources and perceptions about outcomes.

Thus, power can be understood not as being subsumed exclusively into zero-sum games but as involving the achievement of collective targets. Relations, then, among actors who possess resources and develop actions, are seen through the lenses of strategic orientations, institutional properties, and policy discourses.

### 2.4.2 Strategic relational perspective in RSI

Power deals within RSI indicate a growing acknowledgement that central government's leadership in process of policy development is not uncommon, and such politics can play an important role in shaping such policy process. Our study examines RSI from the political perspective formulated by Hay and Jessop.<sup>21</sup> Both scholars developed a political approach that helps decompose the processes of policy making, in which structural contexts, actors' interests and strategic choices, and various forms of interaction between those actors are embedded.

They define their approach as a strategic-relational perspective, whereby "the complex form of the state as an institutional ensemble shapes and conditions the whole political process. But it also directs attention to the differential condition of the various forces engaged in struggle within, as well as outside the state and to the diverse structural and conjunctural factors that determine their relative weight" (Jessop, 1990: 49). This perspective is based on a dialectical interpretation of the relations. It outlines the conception of power relations while unfolding the dialectical interplay of strategic actors (Hay, 2002: 126).

The framework of the strategic-relational approach builds on both the critical realism and the structuration theory of the interconnectedness of structure and agency, and aims to go beyond a more dualist perception of structure and agency (Jessop, 2008: 42). By reformulating Giddens' (1984) structuration theory and Bhaskar's (1989) critical realism, and the related concepts of structure and agency, the strategic-relational approach tries to understand the relationship between "structures" and "agency" (or conduct), and sees this as a dialectical relationship (Hay, 2002: 127).

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<sup>21</sup> Hay (1995; 2002), Jessop (1990, 2008) and Hay and Jessop (1995).

“Structure” refers to context and to the fact that institutions, practices, and routines appear to show some regularity or structure over time. “Agency” implies not only political action or conduct, but also a sense of free will, linked to concepts such as reflexivity, rationality, and motivation. Jessop and Hay aim to bring agency into structure – producing a “structured context” – and to bring structure into agency – producing a “contextualised actor” or “situated agent” (Hay, 2002: 94-96). This “structured context” is also explained as being a “strategically selective environment”, which favours certain strategies over others. Moreover, “strategy”, in the sense of “intentional conduct oriented towards the environment in which it is to occur [...] the intention to realize certain outcomes and objectives which motivate action” (Hay, 2002: 129), is thus a central concept to the approach.

With the outcome of this interaction being considered recursively contingent from the perspectives of both structure and agency, the concept of strategy makes possible the identification of power in different behavioural patterns (Hay, 2002: 131). It can be either the crude display of direct coercive power, where certain actors get other actors to behave in a particular manner, or to provide a more positive exercise of power. In the latter case, actors assess both the potential effects of various strategies and the capacities of other actors to outline a more effective course of action.

Change arises out of the dialectical interaction between strategic conduct and strategic context (Hay, 2002: 127). It is about the capacity of actors to shape their environment and about the ability of actors to make a difference. Both contextual and agential factors are central to explanations about social and political change, which is reflected in the design of this study. Actors face an uneven distribution of opportunities and constraints in their contexts; thus the different forms of access to strategic resources (e.g. human and financial capital) may be a significant determinant of the capacity of actors to realise opportunities. Agents acting in a routine manner are more likely to reproduce existing

structures of social and political relations over time, while actors that resist norms and conventions will most probably transform existing institutions and practices (Hay, 2002: 166; Jessop, 2008: 133). Particularly, during moments of political economic change, “new initiatives” are important and interesting to analyse because of their potential political impact.

When applying the strategic relational approach to our study, we should see regional policy actors as strategic actors that act according to their reflexivity, rationality, and motivations, and that are embedded in a strategically selective context that creates both opportunities for and constraints to a region’s level of agency. The strategic-relational approach offers a useful lens through which to analyse the political process of policy making. This approach, reflecting the dialectic of structure and strategy, theorizes the regional development as form-determined social relations or the materialized cohesion of power relations, rather than reducing it to an apparatus of class domination or a neutral mediator.

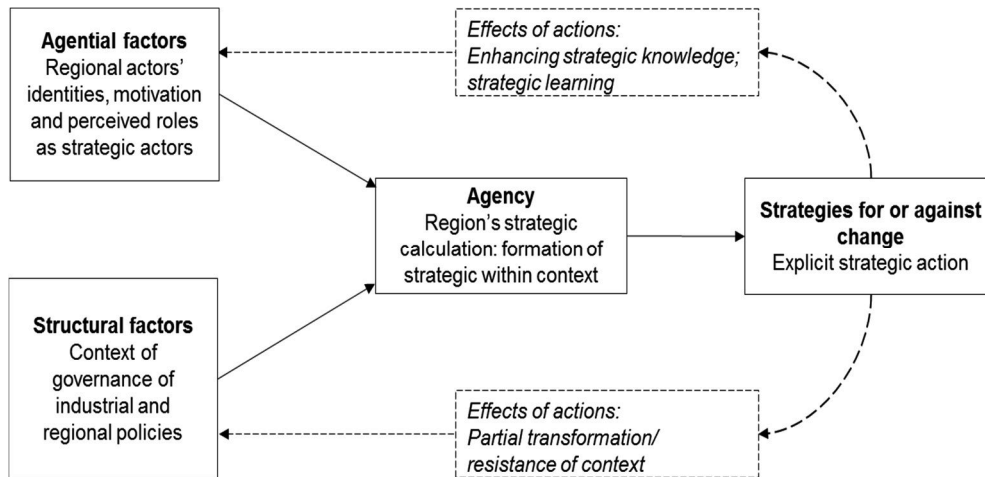
The scope of regional policy has evolved from taking a delegated role in national industrial policy, that is, the setting of an institutional framework, to a very ambitious list of possible contributions for devolved provincial government. In terms of political expectations, the decentralisation of power has variously been seen as having the potential to increase political participation (Maki, 2006), improve accountability (Seabright, 1996), offer policy innovation (Galle and Leahy, 2009), improve democratic stability and address democratic deficits (Faguet, 2011), and reduce the incidence of human rights abuse (Thede, 2011). Specifically in line with these expectations, provincial government has been given increased RSI-related responsibilities for the implementation of regional industrial support programmes, research grants, training, and a variety of industrial development funding.

From a strategic relational perspective, we can view provincial governments as active subjects who have a choice and can develop their own strategies. Using the strategic-relational approach's terminology, regional actors are knowledgeable and reflexive individuals who monitor the outcomes of their actions. These outcomes can be effects producing either a transformation of what Jessop calls the structured context or strategic learning on the part of regional actors, thus raising awareness of the opportunities and obstacles of the structured context and informing possible future strategic actions. These relationships and effects are illustrated in the adapted version of Hay's framework, which is presented in the next sub-section.

### **2.4.3 A conceptual scheme**

The literature reviewed in the previous sections regarding the relational constitution of power and the role of such relational power in RSI suggests an analytical framework that is adapted from the strategic-relational approach developed by Hay (2002) and Jessop (2008). As shown at the lower left of Figure 2-4, understanding and explaining structural factors or the context of the governance of regional development and industrial policy is the core aim of Chapters 4 and 5, while understanding agential factors or regional actors as strategic actors is taken up in Chapter 6. Two arrows show the influence of both the structural and agential factors on a region's agency. Chapters 6 and 7 then combine all of these insights and examine the formulation of strategies as well as the strategic action for or against change that, in turn, will contribute to processes of RSI change, as is shown on the right-hand side of the figure. Considering the developing nature of current RSI in the context of new industrial policies, it is perhaps too early to make any definitive statement about the effect of these strategic actions, which is why these boxes and arrows have dotted lines.

Figure 2-4 A conceptual scheme



Sources: adapted from Hay (2002: 131)

The conceptual scheme utilizes a political economy approach based on the concepts of structures, actors, and dynamics, and on how they interact to produce tension and conflict. The analysis of the structures emphasizes the long-term factors underlying conflicts, while the analysis of actors focuses on the shorter-term incentives and interests among key players that may produce violent conflict. Finally, 'dynamics' refers to institutions, processes, and the interplay between long-term trends and short-term triggers that may lead to escalation of the conflict.

Regional development and industrial policy are produced in an interaction between the actor's own strategy and context. Because actors are understood to be goal oriented, they must take the goals of others into account, too. The only way to really understand actors and their interactions is to analyse them in relation to their proper context. Context always exists in relation to something, which suggests that both internal preferences and external constraints are at play most of the time. Therefore, we need to focus on the interaction between constraints and preferences.

## **2.5 Summary**

This chapter has discussed the theoretical perspectives that would explain regional economic development and political relations. The literature regarding the notions of RSI and of political economy provides several considerations about the key concept of regional economic development. The strategic-relational perspective has offered useful insights into the process of creating collective resources and has highlighted areas for further research to contribute to the RSI literature. Despite the numerous different approaches that emphasise particular aspects of the concept, the understanding of the regional level can be summarised in two points.

First, an RSI is an active process that enables the various actors to negotiate power and have a conversation. Politics frames the region as another active actor that takes part in the negotiation of industrial development policies. Such a view of the region has two major implications. One is that the political stances, beliefs, and prejudices of the regional actors are inescapably woven into the RSI; such an acknowledgement helps us to put a critical distance between regional actors and the RSI. Another implication is that the regional actors are viewed as another actor in the power mesh and not as a teleological creator of the RSI. This implication is crucial because it does not pin the onus of responsibility for the RSI solely onto one set of actors, and it acknowledges the influence of other actors as active and volitional players.

Second, the power perspective would help to view the mundane activities of interactions as an active negotiation of power rather than as just another step in a task sequence. From the strategic-relational perspective, regions are active agents rather than passive external parts of an RSI. This shift in attitude helps us to reconceptualise not only the regions but also the role that the regions play in power relations. Viewing the actor not just as oppressed entities but also as political agents who constantly negotiate for power, helps us to gain a nuanced perspective, which might otherwise be lost. While a traditional



view of power as just constraining and repressing would have discarded emergent behaviours as anomalous and errant, the relational approach helps us to account for emergent relationships and behaviours as a constant performance and contestation of power relations in the RSI amongst the various actors.

Having already presented the conceptualization of RSI as well as politics in western countries, that is, mainly Europe, the main theoretical challenge concerning the study of the policies of regional industrial development in South Korea is whether this theorising of regional changes is actually related to the East Asian experiences.

Interdisciplinary theoretical perspectives can contribute both to an understanding of the actors play in the dynamic change and to an analysis of the conditions that determine both their participation and the strategic choices they face to further their objectives. The empirical chapters will demonstrate that these perspectives help us to gain a better understanding of the mechanisms through which spatially concentrated demands for regional autonomy influence the shape of the industrial policy.

### **3 Research design and selection of case**

It is important that we are able to establish an appropriate fit between the research questions asked in Chapter 1 and the research method proposed in this chapter. It is suggested in this chapter that a qualitative case study allows rich findings to emerge from the data and to combine relevant literature without being limited to a certain 'school', and hence it can more completely reveal the processes that are unfolding in the central and regional interactions about development processes and goals and that are expected to uncover the 'gap' between the existing literature and the practices revealed by the studied case.

Several research strategies were considered initially regarding reliability to ascertain how their strengths and weakness might best help to address the stated research questions. The need to follow processes more closely meant that a research strategy involving close proximity to these processes was desirable. Since few of the processes considered are codified in minutes, transcripts, or other documentary material, direct interaction with the participants was found to be necessary.

In order to gain appropriate access to these participants, the only practical approach was for the researcher to actively participate, and becoming a participant provided an appropriate status from which to observe the processes under study and to interact with the actors in these processes for the purpose for this research. Thus, a participant observer-based research design was selected; this was to be complemented by interviews in order to construct a case study. The following sections elaborate upon the logic of this research design and explain its implementation.

### **3.1 Methodological approach**

The most basic and formal distinction in any research design is between extensive (e.g. questionnaires, surveys, and statistical analysis) and intensive approaches (e.g. case study and ethnography) (Sayer, 1992: 243; Clifford and Valentine, 2003: 10-12). On the one hand, the distinctive characteristic of an extensive approach is the different concerns about the relationship between observations and the ability to produce generalisations based on these observations. On the other hand, in an intensive research design, the causes are elucidated through in-depth examination and interpretation, whilst in extensive research, repeated studies or large samples produce representative generalisations. The two approaches can be separated to a certain degree according to their philosophical underpinnings and their practical requirements.

This study follows an intensive approach, as it provides a full understanding of the ways that industrial policy, regional development policy, and political relations have been articulated within particular socio-political circumstances. The use of the extensive approach (quantitative method and statistical data) can capture changes in production processes and various inputs and outputs, but researchers should not rely on such approaches to tell them the whole story because significant changes may be taking place that are not readily observable and that would certainly elude a quantitative method of research. These are changes in actors' behaviours and the rich interactions of others' responses. The dynamics of change are created by activity, as feedback amplifies and reverberates across the web of the actors. A single-loop process may be easily identified, but a double-loop process is not so readily detected, especially if quantitative methods are employed. We need to examine flows of initiatives, responses, tensions, and conflicts, to look for flows of new initiatives and for flows of ideas practice. All these flows indicate the presence of deep and significant processes.

This thesis seeks to contribute to understanding and explanation of change of RSI, focusing on power relations in South Korea and historically conditioned context. By investigating power relations, this study can still conclude whether there are indeed important change dynamics in the case study.

A single case study method was chosen to scrutinize the region with regard to the propositions concerning the innovation activities of dynamics. The strength of the single case study is the systematic exploration of one case through identifying patterns and reoccurrences. According to George and Bennett (2005: 8), “interest in theory-oriented case studies has increased substantially in recent years”. George and Bannett (2005: 17) defines a case study as “the detailed examination of an aspect of a historical episode to develop or test historical explanations that may be generalizable to other events.” George and Bannett (2005: 32-33) argue that “several kinds of no-variance research designs can be quite useful in theory development and tesing using multifle observation from a single case”.

Yin and Flyvbjerg, particularly, considered single case study. In Yin’s point of view, the single case study is suitable when dealing with a critical, common, revelatory, extreme, or longitudinal case (Yin, 2003: 51-53). Single case study specialises in researching deeply and intensively into one or a small group of subjects, exploring and understanding as much as possible about the specific subject. The strength of the single case study is its almost microscopic attention to detail of the case which allows for greater understanding of relations. Flyvbjerg (2011: 311) argues that it should not be essential and worthwhile for scholars to aim towards a summary and generalization of their studies, because a narrative case can also be meaningful for scientific disciplines and practitioners.

As a research design, one of the main advantage of the case study approach is that it offers the opportunity to study a single unit in great depth and simultaneously explore

generalizable inferences that apply to a largest set of units. Gerring (2004: 348) argues that well-established case studies can identify causal mechanisms that “allow one to peer into the box of causality to the intermediate causes lying between some cause and its purported effect”. Thus, a ‘thick’ single case study has been conducted in order to contribute empirical findings to the theory (Yin, 2003: 47) and theory development (Eisenhardt, 1989: 534).

Another important channel of information gathering was through events such as conferences, workshops, seminars, and other related events. These provided opportunities to meet delegates and to observe tensions or conflicts from a position approximating as closely as possible to the subjects of this study (Kawulich, 2005). The method combines “participation in the lives of the people being studied with maintenance of a professional distance that allows adequate observation and recording of data” (Fetterman, 1998:34-35). The method needed to be intensive to help probe deeply rather than superficially into how actors interact; it also needed to be flexible to allow a varied use of methods for data collection, and so it helps to explain how key actors interact from a study of a specific innovation process. These objectives led to the suitability and choice of participant observation as the primary research method (Gray, 2004:241-243; Burnham et al., 2004:221).

Although participant observation is a unique and underused technique for gathering data in research, it does pose problems for the researcher. The role to adopt during fieldwork and the extent to which participants are fully informed are somewhat intertwined. Social scientists have created a classical typology of the researcher’s role (Gold, 1958; Gill and Johnson, 2002): complete participant, participant observer, observer as participant, and complete observer. As an observer, we have only minimal involvement in the activities of the regional actor being studied. There is a small connection to the actions, but an

observer is not naturally and normally part of the activities (see '*Observer as participant*' or 'non-participant observer as shown in Figure 3-1) (Burnham et al., 2004: 231-232).<sup>22</sup>

Figure 3-1 Types of participant observation

Researcher takes part in activity		
Researcher's identity is revealed	<i>Participant as observer:</i> Who undertakes prolonged observation and involved in all the central activities and whose role is known.	<i>Complete participant:</i> Who interacts within the social situation, but whose role is concealed.
	<b><i>Observer as participant:</i></b> Who undertakes intermittent observation alongside interviewing, but whose role is known.	<i>Complete observer:</i> Who maintains some distance, does not interact and whose role is concealed.
	Researcher observes activity	
Researcher's identity is concealed		

Source: Saunders et al. (2009: 293), originally from Gill and Johnson (2002: 149).

The appropriateness of participant observation was also justified by matching the research questions: the ways in which regional actors behave and interact with each other in a region are important to the research, and researching the change and what happens during the process is of interest. These circumstances matched the research questions. As such, fieldwork is probably most related to the method of participant observation. Participant observation was important in opening up particular areas of investigation, while the sources of evidence for the case study include primary documents, secondary documents, and in-depth interviewing through participant observation.

Lastly, the document analysis enabled to us to obtain fundamental data on the work tasks and the amount of collaborative working between actors. These data were backed up by personal observations and by interviews. Qualitative evidence plays a central role in the

<sup>22</sup> Although participatory observation gave the researcher some insights, it was decided that the this study should not to take the form of ethnographic research presentation. Instead, the presentation of the study follows the conceptual scheme as depicted above.

research design; some part of this evidence (better than data) was from the participant observer process and another part of the evidence was from in-depth interviews. Each of these sources of evidence was used to help draw conclusions about the actions of regional actors and their perceptions of and attitudes to these actions.

### **3.2 The selection of case**

Coming nearly two decades after the political devolution and economic crisis in South Korea, the study of change on the regional policy in South Korea is well timed. Although it is obviously too early to test the effectiveness of the regional politics, it is considered an appropriate time to examine their impact on regional policy. Moreover, because of the incorporation of an evolutionary approach to the theoretical perspectives, this thesis may put the emphasis on the post catching-up period, but it simultaneously conducts a retrospective analysis of the nature, the type, and the form of the political economy by exploring the legacies of the change.

Our understanding of the change was based on observations of the political interactions in 'Gyeonggi province' in South Korea.<sup>23</sup> The selection of Gyeonggi province was based on a comparison of South Korea's provinces subject to the processes of the change outline (see Figure 3.2).

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<sup>23</sup> Province can be translated as *do* in Korean. The term *do* means the region has an administrative legitimacy to develop policies to support the region.

Figure 3-2 Geographical location of Gyeonggi Province



At the outset, it seemed likely that this region would represent rich practices and dynamic changes of regional innovation process experiences than other provinces. Gyeonggi province has already been cited in the academic literature as an example of an RSI (Hassink, 2001, 2002; Cooke *et al.*, 2004). In the book *Regional innovation systems: The role of governances in a globalized world*, Cooke *et al.* (2004: 384-385) praise Gyeonggi province for embarking on a regionalization of innovation activities, and attempting to transform itself into a learning region. In this respect, he states the following:



The example of the South Korean region of Gyeonggi additionally demonstrates the strengths of regional variety in the context of a *dirigiste* innovation system. Also this region was strongly hit by the Asian crisis in 1998. However, according to Hassink in Chapter 12, 'the Gyeonggi economy has quickly recovered ... firms in Gyeonggi are increasingly internationally active, foreign direct investment has been strongly increasing after the economic crisis at the end of the 1990s and even if their customers relocate to other regions, they tend to stay in Gyeonggi due to agglomeration advantages.

Cooke *et al.* (2004: 386) also note that the movement of the economic structure was captured using network-type systems. In Cooke *et al.*'s account, the region's industrial policy process has been changed from a top-down process to a bottom-up dynamic and strategic process based on a perceived need to enhance the research and development infrastructure. In particular, this transformation is linked to core policy initiatives.

Given Gyeonggi province's unique contexts described earlier, this single case study is holistic, incorporating an examination of the complexities of the issue, and intrinsic, seeking to provide insight into and refine theoretical frameworks. Gyeonggi province was also chosen because the researcher knows the region well.<sup>24</sup>

Organising and completing a field trip in Gyeonggi province constituted an additional challenge for this thesis. The fact that much of this study has been conducted in a familiar country in the researcher's native language and with personal contacts, adds a specific additional interest to this study. On the one hand, there were existing expectations, but on the other hand, several practical concerns and considerations emerged.

The methodology strategy described in the previous section included conducting interviews with a broad range of participants who represented local interests and expectations. The involvement of Gyeonggi Institute for Science and Technology Promotion (GSTEP) was due to the invaluable contribution of Lee Won-Young

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<sup>24</sup> Provincial governments generally refer to sub-national governments. In this thesis, lower-level sub-national governments are called city governments while upper-level ones are called provincial governments.

(Interviewee 1 and Appendix 3), chairman of the GSTEP and responsible for the region's science and technology policies, and Yim Deok-Soon (Interviewee 2), a senior researcher in the Science and Technology Policy Institute (STEPI). The former introduced me to several participants of the industrial policy process, whilst the latter managed to put me in contact with staff members of the Gyeonggi Technopark, especially of the Strategy and Planning Division.

After several contacts had been established at the regional level, an initial schedule of interviews was formulated and a pilot visit to the field was organized for January 2010. The initial visit to the GSTEP and Gyeonggi Research Institute (GRI) and the consequent familiarisation with the environment made possible the application of sampling and snowballing techniques from the first contact.

Table 3-1 Fieldworks

Fieldwork	Preliminary investigation	Participant observation and interview
Period	1 to 22 January 2010 (three weeks)	1 September 2010 to 6 February 2011 (five months)
Activities	The preliminary investigation mainly involved the use of unstructured interviews and documentary analysis. Generally, in research, the literature review provides a basic scheme of things to look for, but in this research, the main purpose of the approach to interviewing was to allow the respondents themselves to focus on what they felt was important in relation to regional innovation. Thus, the use of open-ended interview questions was meant to allow the regional actors to discuss issues from their own point of view over the three-week period. The national level was also looked at to give contextualization of the idiosyncrasies of the overall regional policies.	The researcher was employed by the GSTEP of Gyeonggi Province for the duration of the key activities and worked with them, in order to observe the interaction with other actors. During this time, the researcher directly observed and assisted the regional authority in their work. The researcher collected both formal and informal types of data.

Source: author's own creation.

The review of the relevant literature and the insights gleaned from the pilot study led to identification of the institutions that actually have been or theoretically should have been

engaged in these policies, which in turn, led to a careful selection of the people who would best be interviewed. The main objective was to interview high-ranking individuals from each organization who would have a sound knowledge base and were in a position of responsibility. Fortunately, the researcher was appointed as a part-time researcher for the GSTEP from 1 September 2010 to the end of December 2010.

We followed the development of the GSTEP and the Gyeonggi provincial government over a six-month period. During this time, we conducted several formal interviews with key persons to discuss and refine the research findings. We conducted interviews with 42 interviewees including the chief officers and experts in provincial government, agencies, policy makers, members of firms, and academics. Hence, the interviewees' corresponding organizations included regional authorities as regional technology support units, and SMEs provided a business dimension. A limited number of additional interviewees were added from the interviewees that represented the academics. The following table gives an overview of the interviewees; a list of interviewees can be found in Appendix 1 while Appendix 4 provides the list of the events attended as part of the research. These regional events provided opportunities for participatory observation to understand the regional agenda and regional issues and the way strategic action is promoted.

Table 3-2 The number of interviewees

Actor	Number	Actor	Number
Gyeonggi Technopark	3	Provincial government	4
GSTEP	7	GRI	4
IICC members (firms, universities)	7	Public research Institutions	5
Firms in Gyeonggi Technopark	4	Academic, policy experts	7
Provincial council	1	Total	42

Source: author's own creation

It is important to maintain confidentiality when interviewees are asked about their personal opinions and perceptions as well as conflictive or uncooperative inter-actors' behaviours. In order to gain personal opinions, the purpose of the research was explained at the start of interview, and the sensitive questions regarding conflictive relationships were asked at the end of the interview. The interviews were not recorded due to the sensitive nature of the research topic. Nor did we take field notes while acting as a participant observer. Instead, we wrote up notes each day after leaving the field. In line with the exploratory character of this thesis, an "interview topic guide" was followed (Appendix 2). Interview topic guide was designed to engage subjects in substantive discussions around the policy process, and to obtain information that would help explain how and why policy initiative emerged as a prominent issue. Specifically, it contained questions corresponding to the dimensions of the study's theoretical framework, focusing on: 1) the political, economic conditions that contributed to the emergence of regional and industrial development policy; 2) regional development governance and the characteristics of the RSI; 3) the identification of the main policy actors (new initiative actors and pre-existing actors) and their perceived motivations, principles and objectives; and 4) political and policy dynamics attending the issue's advancement on the regional policy. Interviewees were asked the same questions, often in different wording and usually in different sequencing.

### **3.3 Operationalization of the main concepts of the conceptual scheme**

To recap, the strategic relational perspective allows an evolutionary approach to be implemented; this provides a broader context to analyse the relationship between central government and regional policy makers in an RSI. Strategic actions influence both the structures and the actors in the dialectical processes of change. The dialectical relationship between the structural context and the actor in the context yields a new

inter-related conceptual pairing: a strategic actor within a strategically selective context.

There is always interaction between structural and agency factors. Whilst the conceptual analysis starts by distinguishing core elements in both categories, the analysis immediately seeks to reveal the relational aspects that link structure and agency.

In the context of this thesis, the structural factors include actors, an account of the recent history of the region, and information about the political economy and efforts to build industrial policies. There are also more agency factors to consider, such as the roles played by particular regional actors and the awareness of the opportunities perceived by agents to form and develop industrial policy.

To recap, “structure” basically means context and refers to the setting within which political and economic events occur and acquire meaning with some regularity or structure over time. “Agency” refers to action, in particular, actor conduct; it can be defined as “the ability or capacity of an actor to act consciously and, in so doing, to attempt to realise his or her intentions” (Hay, 2002: 94). The link between structural and agency factors through strategic contexts and strategic actions is also clarified where necessary. In the light of the strategic-relational perspective, the provincial government can be seen as one of the key strategic actors within the region, which is a strategically selective context for the strategic actors, whereby they form networks and partnerships defined as strategic alliances. The strategic actions within the regional policy context comprise a new strategic organisational field.

### **3.4 Limitation of the single case study approach**

The qualitative single case study design of this study, coupled with researcher’s role as “observer-as-participant”, had many benefits, including the ability to understand more

clearly the complex relationships and the differing perceptions of regional development. This case study was explanatory, showing how the feelings and perceptions of staff at the GSTEP had an effect on their involvement with the RSI and the building of their knowledge networks and collaborative processes.

However, at times, it was difficult to represent simply the complexity examined, and the data did not lend themselves to numerical representations, which might otherwise have provided clarity. This study is based on one six-month period of observation and data collection. During this time, the initial actors were emerging to start the process. The contextual nature of this case study research means it could have benefited from more long-term participation and observation on our part, which would have led to deeper insight into RSI as a political interaction. Additional time spent with the study may have elucidated deeper results showing how such an RSI changes.

In addition, this single case study is limited by the simple fact that one regional phenomenon, in this case Gyeonggi province, is observed, albeit in depth. For these reasons, this case does not lead to generalizable results. The case of Gyeonggi province cannot be considered representative of other RSI. However, the results of this study still add to the body of knowledge regarding these types of RSI, and it was possible to offer some suggestions that may apply to other RSI with similar goals or structures.

The primary aim of this study was to develop a theoretically grounded approach to regional development and regionalist accommodation that could be applied to a variety of contexts. Therefore, the logical extension of this work would be to demonstrate that this approach can also help us to make sense of contemporary developments in other regions and democratic countries.

### **3.5 Concluding reflections**

The adaptation of a qualitative approach that is based on a mixed set of methodologies is in complete agreement with the central aim of this study. It was decided that the intention of this thesis would be better served by intensive research, which was achieved with the help of an in-depth case study of Gyeonggi province.

The core element of the applied methodology is the participant observation element of this thesis. The theoretical grounds were presented in the previous chapter, where the analysis of issues regarding regional economic development and transition on the one hand and politics on the other are discussed more thoroughly.

Although the scope of this research is limited in the sense that it cannot present a generalizable picture of the whole of South Korea's regional system of innovation, as it only includes one region in South Korea, it does aspire to contribute to a better understanding of this under-researched field.

The following chapters examine the impact on South Korea's regional politics of a broader range of socio-political and economic factors. Thus, Chapter 4 analyses how the transition from a central planning to free market system and the devolution process has exercised various powers that have influenced the way local and regional politics have been formulated and managed in South Korea. In this way, we investigate the ways that historical legacies have affected regional autonomy in South Korea.

#### **4 Regional politics in South Korea: historical antecedents of contemporary process**

The previous two chapters outlined the theoretical perspectives and methodology that underpin this study. This chapter investigates the national legacies of South Korea as a set of structural factors that shape the current form of regional politics in South Korea. The current form of relationships is related to regional autonomy. While many countries have several different forms of regional autonomy, currently, South Korea has a form referred to as “the mayor-council” form, which is similar to that of the US. The mayor-council form consists of the governor (province), the mayor (city), and the council members. When was this form introduced and how has it developed in the South Korean context? Where does commitment come from, and under what circumstances?

Historical legacies can be decisive for the forms and relations of recent policy initiatives. Thus, history matters, and in the case of South Korea, a brief historical review regarding the regional autonomy formation procedures is considered necessary, as it can offer useful insights regarding the understanding of the development patterns of nation and regional relations (Livingstone, 1992: 7). The incorporation of historic legacies into the analysis of the changing political relations of regional policy in South Korea is directly related to the theoretical perspectives followed in this research.

As a basic aim is to explore how state building processes have affected regional development, this chapter begins by considering the historical development of the creation of modern regional politics in South Korea. Thus, a brief historical overview of state formation in South Korea is provided to demonstrate how it came to be so centralized in terms of how it is perceived and of its actual reach. This chapter then describes the changes that devolution policy brought.



## 4.1 Earlier history

Interestingly, South Korea has a long history of local cooperative communities for the purpose of increasing mutual help among people. *Gye*, *Du-rae* and *Hyang-Yak* were traditional activities of self-government among rural communities, and they helped economic growth at the local level (Goh Kun, 2010: 6; KDI, 2013: 358).<sup>25</sup> These three activities have prevailed in the local community since the *Korae* (935-1392) and *Choseon* dynasties (1392-1910) (KDI, 2013: 362-363).

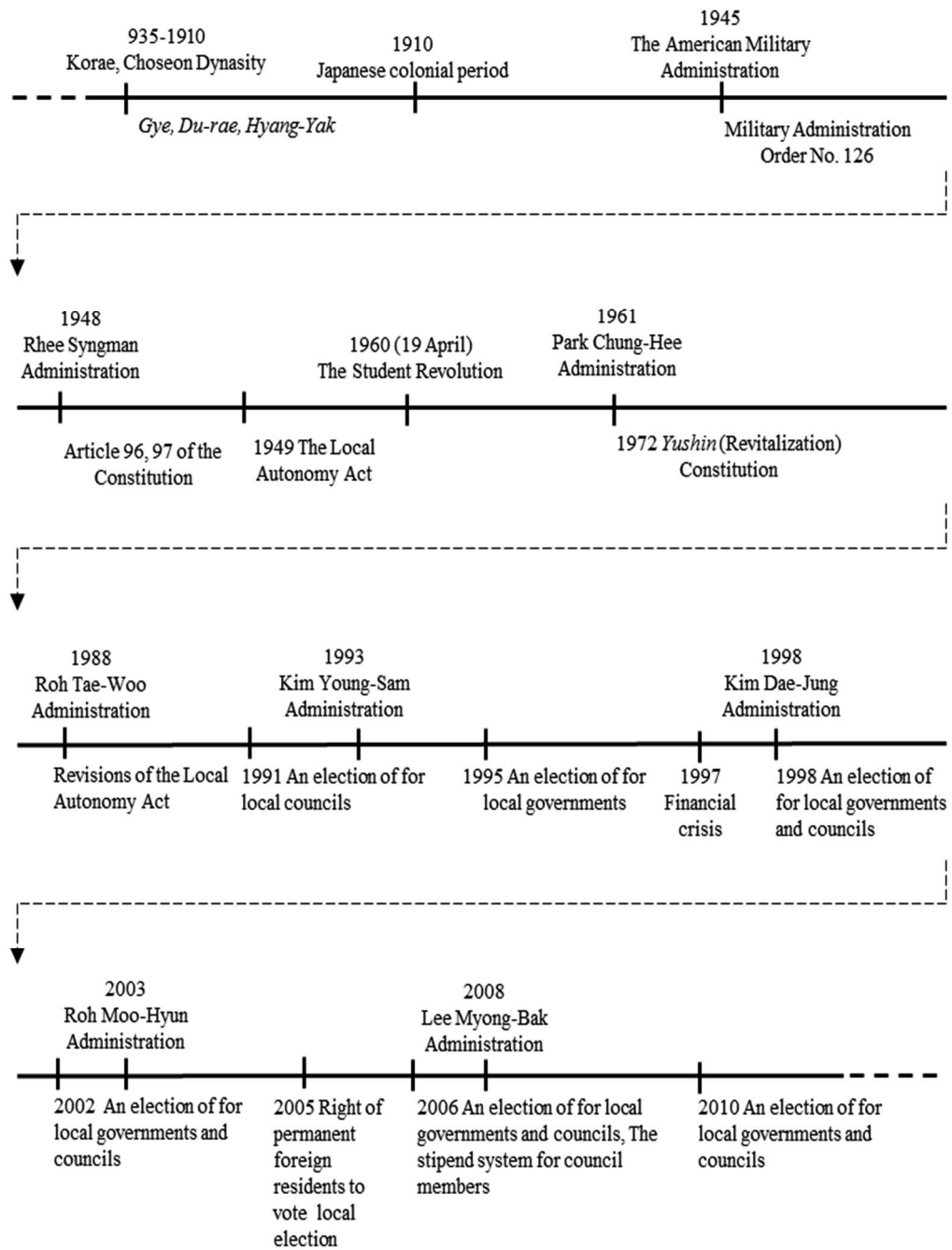
Despite the existence of such local communities, the country has been highly centralized since late 19 century. For the 36 years of the Japanese colonial period (1910-1945), the central government exercised absolute power over the country and its communities. All the important local communities were directly or indirectly appointed by the central government. Traditional *Du-rae*, *Hyang-Yak* and *Gye* remained, but they were restricted to the form of agricultural communities. It was not until the restoration of independence that a modern concept of regional autonomy was introduced in South Korea.

Immediately following the end of World War II (WWII), the American Military administration (1945-1948) made an effort to create a political, economic, social, and administrative order that would establish democracy in South Korea. South Korea was regarded as one of the showcases for the adoption of western market economies and democratic practices. Regional autonomy, as an institutional concept underpinning democracy, aroused great interest among the people. In November 1946, *Military Administration Order No. 126* stated that governors and council members of the provinces and cities were to be directly elected by residents.

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<sup>25</sup> *Gye* is a mutual aid association by which local residents help each other. Usually in a *Gye*, people will collect money or other goods for a certain objective and then give it to a member in need. *Du-rae* is a traditional cooperative agricultural group. *Hyang-Yak* is an agreement in local communities that residents voluntarily set up to encourage good and punish evil and also to help and support each other (*The Observer*, December 6, 2012).

Figure 4-1 Main political events related to regional autonomy in South Korea



Source: author's own creation

## **4.2 Nation rebuilding between 1948 and 1995**

### **4.2.1 Building the regional autonomy**

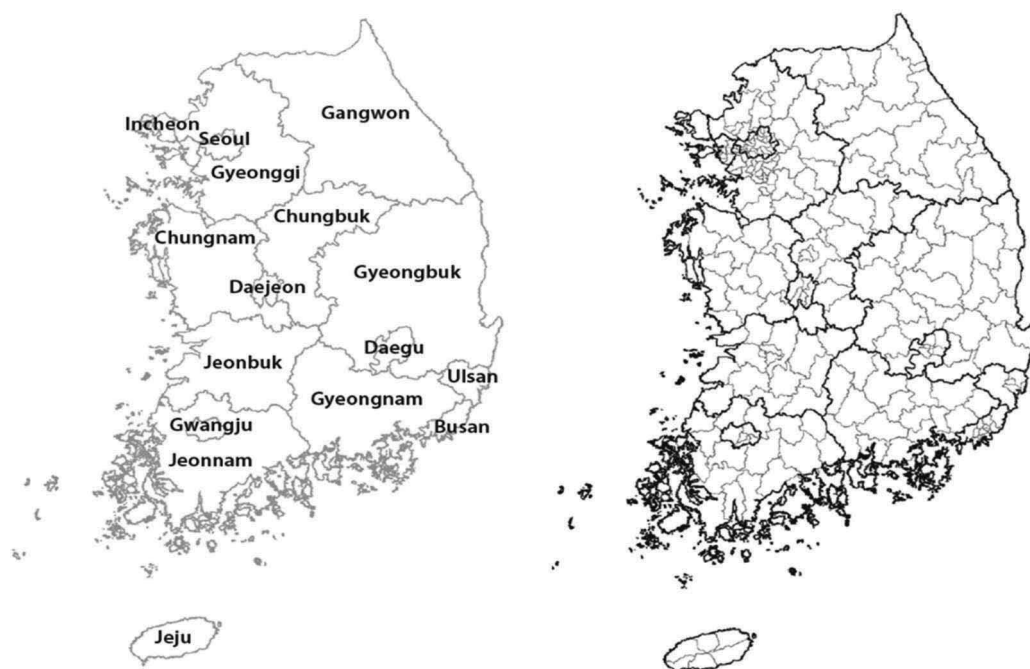
Regional autonomy as an institutional underpinning for democracy aroused great interest among the political leaders in the immediate post-war and post-occupation period. The Rhee Syngman administration of the First Republic (1948-1960) promoted a constitutional mandate for the establishment of regional autonomy. Indeed, regional autonomy was guaranteed as a basic tenet of democracy under the Republic's first Constitution in 1948 (Moon Chang-Soo, 1999: 29-33).

The Constitution devotes an entire chapter to regional autonomy; it contains two articles, namely, *Articles 96 and 97* (KLRI, 2012). *Article 96* states that "local autonomous entities shall, within law and ordinance, deal with matters pertaining to local autonomy and matters delegated by the central government, and manage their own properties." This article is considered as not only vesting sub-national entities with rights of autonomy, but also as giving them a basic constitutional guarantee of local autonomy. Thus, the constitution apparently allows the provincial governments to have a degree of political power. However, *Article 96* limits the nature of regional autonomy power by stating that "local autonomous entities shall, within law and ordinance". The "law and ordinance" phrase implies that the power of the expected regional autonomy should follow and comply with executive ordinances as well as national laws (Constitutional Court of Korea, 1948, 1988; KRILA, 2012).

Thus, according to the Constitution, provincial governments deal with matters pertaining to the welfare of residents and property issues, and they establish, within the limit of national laws, rules and regulations regarding regional autonomy. Regions are also required to have a council. Meanwhile, laws at the national level determine the

organisation and powers of the council. The governor/mayors and council members are elected by direct vote for four-year terms.

Figure 4-2 Two-tier public administrative structure in South Korea



Source: OECD (2012: 100)

Note: As a result of rural-urban mergers and consolidation among cities, total number comprises 17 provincial governments and 227 municipal governments in 2014. All of the regional and local governments are classified as autonomous bodies with elected councils and governments. Sejong special autonomous city is not included in this map. Roh Moo-Hyun administration created a special administrative district from parts of Chungnam and Chungbuk provinces, near Daejeon, to relocate nine ministries and four national agencies from Seoul. The city opened on July 2012.

Based upon the constitutional mandate, the Rhee Syngman administration enacted the Local Autonomy Act in 1949. Regional politics in South Korea in the modern sense have been derived from the provisions of this Act. As shown in Figure 4-2, the Local Autonomy Act designed a formal central-provincial relation composed of a two-tier political and administrative structure<sup>26</sup>: the upper-level (Kwang-Yuk-Ja-Chi-Dan-Chye, i.e. provinces) is

<sup>26</sup> The two-tier structure represents a legacy of Japanese colonialism. During this period, Japan imposed this administrative structure for the purpose of resource-management and military control. Against this historical background, debate continues today over how to simplify structure (Hermanns, 2004: 11).

the autonomous region, with a relatively broad territorial jurisdiction<sup>27</sup>, and the lower-level (Ki-Cho-Ja-Chi-Dan-Che, i.e. cities, towns, and townships) is the basic level of local authorities.<sup>28</sup>

However, the Local Autonomy Act was damaged by the Rhee Syngman administration and the Korean War (1950-1953) (Kim Byung-Joon, 2009). Rhee Syngman took advantage of several amendments to the Local Autonomy Act and of initial local elections during his administration to expand and extend his political power. In the fourth amendment of the Act, he changed the direct election of mayor of lower-level governments into an appointment by the central government.

The Student Revolution on April 19, 1960 was a pivotal event for the politics of the country. It provided a cornerstone for the construction of a democratic society (Kil Soong-Hoom and Moon Chung-In, 2001: 38). The Democratic Party, which grasped political power through the Revolution, passed a fifth amendment to the Local Autonomy Act on November 1, 1960. This amendment allowed local residents to participate in the direct election of council members as well as of the governor/mayors. It aimed to establish a grassroots democracy and realize some degree of regional autonomy. Under this reform, local elections took place in December in 1960 when council members and governors of both the upper and the lower level were voted into office.

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<sup>27</sup> The upper-level includes Seoul Metropolitan City, Sejong City, six metropolitan cities (Busan, Incheon, Daegu, Gwangju, Daejeon, Ulsan), eight provinces (Gyeonggi, Gangwon, Chungnam, Chungbuk, Jeonnam, Jeonbuk, Gyeongnam, Gyeongbuk), and Jeju Province.

<sup>28</sup> The lower level consists of city (*si*), county (*kun*) and district (*ku*) governments. The units are further divided into *eup*, *myon*, and *dong* for purely administrative purposes. At the lower-level local governments, there are 80 counties, 73 cities, and 69 autonomous districts. Among them, all of the autonomous districts and cities belong to metropolitan cities and provinces respectively. Cities have a population of 50,000 or more, and counties, 50,000 or less. Self-districts are municipalities under big cities. Seoul and metropolitan self-district are autonomous and their heads are elected. Other cities whose populations are over 500,000 can have a non-autonomous district as the administrative arm.

#### 4.2.2 The authoritarian regime

However, regional autonomy in South Korea was delayed again by the authoritarian regime of the Park Chung-Hee administration (1963-1979) and the Chun Doo-Hwan administration (1980-1987) (Hermanns, 2004: 11; Choi Yoo-Sung and Wright, 2004: 6).

As Cotton (1992) says, the authoritarian regime of the Park Chung-Hee administration practised a dictatorship and a military-based government.<sup>29</sup> Regional autonomy was suspended again by the Military Revolution on May 16, 1961. The authoritarian regime maintained an autocratic stable political system and focused on economic growth. The Military Revolutionary Committee, led by Park Chung-Hee, suspended regional autonomy. According to *Decree No.4*, the Military Commission dissolved all provincial councils. Internal political strife at the highest levels of government prevailed at the time and effectively negated all progress toward regional autonomy. The functions of provincial government were assigned to the central governments.<sup>30</sup>

In 1963, the political situation returned to partial normalcy with the formation of the Third republic. However, although the Constitution in 1962 provided an appropriate time for the restoration of the local elections, the military government had no intention of initiating the necessary process for their enactment. This policy was followed during the fourth republic (1972-1979) as well. The suspension was formalized by the *Yushin* (revitalization) Constitution (1972), which stated that regional autonomy was suspended

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<sup>29</sup> In his research, Cotton (1992: 512) identified four phases of the authoritarian regime in South Korea: military regime (1961-1963), quasi-competitive political system (1963-1972), dictatorial system (1972-1979), and disputed quasi-dictatorial system (1980-1987).

<sup>30</sup> More specifically, military measures concentrated on fortifying national political power. They modified the structure of local administration, changing *Eup* (towns) and *Myun* (townships) from autonomous entities to *Kun* (counties). In practice, this reversed local autonomy by depriving the basic units of regions of any discretionary power. Additionally, instead of elections, governors/mayors were appointed by central government. The Minister of Home Affairs was authorized to approve all resolutions of upper-level councils. Furthermore, the resolutions of lower-level local councils needed the executive approval of upper-level local governments. Seoul was put under the direct control of the Prime Minister.

until the country was reunified and that administrative efficiency in state affairs took first priority (Cotton, 1992: 517; Oh Kie-Chiang, 1999: 103; Berman et al., 2010: 380).

In the days of the dictatorship in the 1970s, in order to ensure the legitimacy of the authoritarian regime, a policy of rapid industrialization was necessary. Autocracies obviously avoid immense expense by avoiding local autonomy. The Park Chung-Hee administration<sup>31</sup> and the later Chun Doo-Hwan administration (1980-1987) were swift in abolishing local autonomy and suppressing its development.<sup>32</sup> In particular, the Constitution specified in an additional clause that “the appropriate timing for restoring the local councils based on this Constitution will be specified separately by another law.” Since a separate law was not enacted until 1988, the local autonomy was never operational. As a result, regional politics was virtually shelved during a quarter-century of military rule.

In 1987, South Korea made progress in procedural social democratization (Oh Kie-Chiang, 1999:91-93; Steinberg and Shin Myung, 2005:11-12). Considerable attention has been paid to the resurgence of the political economic landscapes. During the authoritarian regime, there had been increasing demands for social democratization.<sup>33</sup> In response to

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<sup>31</sup> Park Chung-Hee controlled the country from 1961 until his assassination in October 1979. The Prime Minister Choi Kyu-Ha had to automatically assume the presidency. Choi Kyu-Ha kept the presidential position until May 1981. During his short presidency, he did not have much influence on the political economy, acting merely as a care-taker during a transitional period. General Chun Doo-Hwan held the reins of power during President Choi’s presidency.

<sup>32</sup> The Chun Doo-Hwan administration took a slightly different attitude toward regional autonomy; it declared that it would soon reinstate the local councils. The new Constitution instituted in 1980 stated that local councils should be restored step by step, based on the degree of financial self-sufficiency. It also indicated that the timetable for the restoration of local councils would be decided by the enactment of law. The Chun Doo-Hwan administration nevertheless further postponed the introduction of local councils. The rationale was the need to take local financial self-support into consideration and harmonize the efficiency of local administration with the requirements of democracy. Once again, action was deferred until a later and more appropriate date.

<sup>33</sup> During two decades, South Korea was ruled by three different military generals turned politicians. It was against this political and economic backdrop that South Korea’s democracy movement emerged. Accepting the democratization protest on June for the direct election of the president, the next administrations limited the presidency to a single five-year term and a four-year term for the National Assembly (Steinberg, 1998).

public and popular pressures, the government attempted reform, not only at the national level, but also at the local level. Throughout the presidential elections in 1987, the restoration of the local autonomy was one of the biggest campaign pledges of the ruling party (i.e. Democratic Justice Party).<sup>34</sup>

As domestic demands for democracy grew stronger, the government felt the need to introduce further amendments to the Local Autonomy Act, as the demands of the pro-democracy movement included greater regional autonomy. In April 1988, the Roh Tae-Woo administration (1988-1992) made sweeping revisions to the Local Autonomy Act for the revival of regional politics (Berman *et al.*, 2010: 381). Indeed, the Roh Tae-Woo administration made a public commitment to grant regional power. The pledge of the Roh Tae-Woo administration and the election was a contributing factor to the progress toward local autonomy and democratization in South Korea.

In addition, the repeal of the conditional (unification) article on regional autonomy facilitated this progress. This was an indicator of the sentiment that had produced a revival of interest in regional politics. An amendment to the Constitution that restricted the timing for creating local councils was also removed. The removal of this provision led to the creation of elected local councils across the nation in 1991 (Kim Pan-Suk, 1993; Lee Jong Soo, 1996).

#### **4.2.3 Revisiting the Local Autonomy Act**

The *Local Autonomy Act* was further amended in 1990 to arrange for the election of provincial council members during the first half of 1991 (see Appendix 5). For the first

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<sup>34</sup> This does mean that the pro-democracy movement was the important determinant of South Korea's political democratization with other variables, such as political leadership and international factors, also playing important roles.



time since the Military Revolution in 1960, council elections were held in 1991. In the elections, 866 council members for the upper-level governments and 4,303 council members for lower-level governments were elected (Oh Kie-Chiang, 1999: 130-162). This replanted the elected local legislative tree almost 30 years after the suspension of regional autonomy by the military regime (Choi Yoo-Sung and Wright, 2004: 7).

However, local elections were again postponed until 1995. The rhetoric and rationale for the delay was to ensure a more stable and gradual installation of regional autonomy. To prepare for, discuss, and promote local autonomy, a formal national commission was established in 1991. The Ministry of Government Administration (now the Ministry of Administration and Home Security) created the joint committee for devolution. This committee had a life span of seven years and was a further favourable indicator of evolving devolution. The committee was composed of civilian scholars, other experts, and both national and local officials. The committee also deliberated on matters regarding the devolution of functions and authority to local governments.<sup>35</sup> Since 1991, the committee has devolved 908 functions, which corresponds to 7.9% of functions of the central government.

In accordance with the revision of the Local Autonomy Act, the Kim Young-Sam administration (1993-1998) held elections for both local council members and the governors/mayors in June 1995 (Bae Yooil and Kim Sunhyuk, 2012: 268). This progress resulted in two important developments that were favourable to stronger and more advanced devolution reform in the 2000s. The full-scale elections selected 245 governors and mayors of local government. There were 15 upper-level (provincial level) governors

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<sup>35</sup> However, this committee had no legal authority to compel the adoption of the recommendations to the relevant agencies in the central government.

and 230 lower-level mayors elected. Also elected were 972 upper-level council members and 4,541 lower-level local council members.

Governors/mayors and local council members are normally elected for a four-year term of office. However, terms of the first set of governors/mayors and local council members commenced on 1 July 1995, and expired on 30 June 1998. This exception was made for staggered terms to avoid clashes with the National Assembly election cycle (in 1996, 2000, and 2004). As a result, subsequent local elections were held in 1998, 2002, 2006, 2010, and 2014.

This established the potential for an operational decentralized and modern nation state-province structure in South Korea. The local elections since 1995 have created a regional political arena, which in effect have opened up the public sphere to civil society and regions. Regional authorities have gradually strengthened their power to manage public policies dealing with locality, and the financial discretion of regions has increased steadily (OECD, 2001: 42).

### **4.3 Rising conflicts on uneven development since 1995**

Although the Kim Young-Sam administration heralded a new era of interaction between central and provincial government after the long authoritarian regime, relations remained confined to a procedural process of providing a free and fair election and the constitutional guarantee of local participation. The fundamental tenets of the political economy of the Kim Young-Sam administration remained similar to those of the preceding authoritarian regimes (i.e., they were committed to a “growth-first” strategy without

undertaking meaningful economic redistribution).<sup>36</sup> This may refer to the central government's role in "directing" the economy despite all of the central government's initiatives in shaping decisions and setting priorities.

However, the Kim Young-Sam administration failed to undertake further institutional reforms other than introducing the real name deposit system, and it ended in financial crisis. The presidential election in 1997 was an important event in the path toward democratic consolidation, as it was the first peaceful transfer of political power to the opposition party (from the conservative party to the democratic party) in fifty years (Choi Yoo-Sung and Wright, 2004: 8). For South Korea, it represents the first civilian transfer of power democratically by election.

The controversy over the authenticity of South Korea's democracy virtually disappeared during the Kim Dae-Jung administration (1998-2003) and the Roh Moo-Hyun administration (2003-2008), that is, the so-called *Minju Jeongkwon* (Democratic Administration).<sup>37</sup> However, these two left-wing administrations, which together lasted 10 years, were relatively more progressive than the other administrations, but were also confronted by other controversies.<sup>38</sup>

To relieve the country from the humiliating IMF bailout in 1997, the Kim Dae-Jung administration endeavoured to remove barriers to liberalization of the economy.

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<sup>36</sup> For example, the Kim Young-Sam administration announced "the New Economy 100 Day Plan" to quickly boost the Korean economy. The Plan emphasized globalization, industrialization, technological advancement, and social overhead capital (Kong, 2000: 146).

<sup>37</sup> The Kim Dae-Jung administration included life-long opposition leaders with strong support from specific regions. Kim Dae-Jung also offered democracy activities. The administration began with high expectations as a "Government of the People". The Roh Moo-Hyun administration was unexpectedly elected and thereby provided a different kind of president. Roh Moo-Hyun was long portrayed as a maverick politician who struggled against corruption, social polarization, and institutions characterised by regional antagonism (Hahm Sung Deuk and Lee Dong Seong, 2007: 7-10). The Roh Moo-Hyun administration is also known as a "Participatory government".

<sup>38</sup> The imprecise use of various terms, such as "left-wing", "reformist", and "progressive" to describe the moderate, non-communist left of the political spectrum no doubt causes concerns among those who wish for greater precision in delineation.

Although the IMF did not directly pinpoint the devolution issue, the bailout and the wave of “reinventing government” movement prompted intellectuals and policy makers to ponder the cost of a highly centralized system and to devise a strategic plan for devolution (*BBC news*, August 18, 2009).

This changed circumstance also provided a political opportunity for making progress regarding regional autonomy. The Kim Dae-Jung administration vigorously pursued an institutional restructuring (Haggard et al., 2003; Lim Hyun-Chin and Jang Jin-Ho, 2006). To make the government smaller and more competitive, neo-liberal reformers strongly urged the government to adopt measures to privatize key public corporations and to delegate responsibilities to the regions (Im Tobin, 2003a, 2003b; Kim Pan-Seok, 2000). The ideology of neo-liberalism holds that “open, competitive, and unregulated markets, liberated from all forms of state interference, represent the optimal mechanism for economic development” (Brenner and Theodore, 2002: 2). South Korea positioned itself in accordance with the neo-liberal principle of limited central government intervention in labour markets and related infrastructure arrangements, preferring instead that market forces be considered the fundamental drivers of regional development (Bae Yooil, 2009: 466).

Delegating responsibilities to the regions has highlighted that devolved regions might affect not only the substance and intensity of the nation state’s interests, but also the region’s style of interaction with the nation state. There are two distinct possible styles: first, a devolution of power that increases cooperative interaction, and second, a devolution of power that increases conflicting interaction. It is not easy to decide whether it is the process that leads to the divergence of relations, or if it is the other way around, namely, that issue differences boost the devolution process. Rather, we might expect that such a public policy would be more complicated and contentious when state and regions are led by different interests. Under such conditions, regional policy is not part of a state-

wide policy, and consequently, policies may not be more readily shared across territorial boundaries.

This was found to be especially so in South Korea, where central government maintained a regional policy. Before 1995, the regional policy had a centralised process, so state-region conflicts did not occur as they do today. Even if conflicts occurred, central government could play a powerful role in their solution. When regions were granted autonomy, many complicated and contentious issues emerged in terms of policy conflicts. Indeed, after the introduction of local autonomy in 1995, more than two hundred conflicts related to regional development were identified, which was four times the number identified in 1994. In particular, large-scale development policies, such as the location of the knowledge infrastructure, and high-technology clusters, were delayed or changed because of conflict (Park Bae-Gyoon, 2003; 2008).

The selection of the country's nuclear waste disposal site was an example of such conflict. Ten years passed in attempts to select a nuclear waste disposal site before Gyeong-ju city was selected as the location in 2005. The government's choice of various sites had been opposed by the regional authorities of the target areas. Finally, in 2005, a special act providing for a residents' poll in Gyeong-ju city completed the site selection process with an approval rate of 89.5% of the residents' votes. Another popular example is the Saemangeum Reclamation project, which involved the building of a 33km tide embankment between Gunsan and Buan cities; there had been severe conflicts between central government, environmental NGOs, and regional politicians since the 1990s. Even though this policy had been suspended twice by 2005, it was resumed in 2006 following a decision of the Supreme Court. These conflicts increased and, indeed, they continue to delay the implementation of important national development projects. Nonetheless, despite these cases, an appropriate method for conflict resolution in decision making

about the implementation of large-scale policy has yet to be provided (Park Bae-Gyoon, 2008: 50).

Regional autonomy, in addition, has triggered one particular debate: uneven development. This concerns the issue of expanding devolution to make it an asymmetrical process, particularly the Seoul Metropolitan Area and the other regions. The region became frustrated with the central government's development policies and blamed state centralism as a main cause of the gap between the capital region and the rest of the country. Local politicians and governments began to criticize the government over the centralized regulation.

As a result, the conflicts and tensions on uneven development intensified, and devolution became one of the most important political issues during the presidential electoral campaign in 2002. Then, in the 2002 presidential election, the Millennium Democratic Party's candidate Roh Moo-Hyun won with 48.9 % of the vote.

#### **4.4 The politics of devolution in the 2000s**

##### **4.4.1 The asymmetric devolution of the left-wing administrations**

On June 12, 2003, four months after his inauguration in February of that year, President Roh Moo-hyun made public the so-called "Daegu initiative", which said that the central government would pursue a comprehensive approach to territorial development policy, innovation-driven economic strategy, and management of the region first, and the capital region later. It is no exaggeration to say that all specific policies stemmed from these three principles of the BNDP (Jeon Kyoung-Gu, 2012: 9-10).

The Roh Moo-Hyun administration (2003-2008) employed an unprecedented devolution policy as one of the top priorities of its political agenda (OECD, 2001:12; Choi Yoo-Sung and Wright, 2004: 9). In its policy of devolution, the administration had to decide whether to adopt a symmetric devolution policy, which would confer an equal degree of devolution on the regions, or to implement an asymmetric devolution policy, which would grant differing degrees of autonomy between regions. It opted for the asymmetric devolution policies in an attempt to respond to claims about uneven development and to react to balanced development between regions. Thus, “balanced development” became the most important political mantra in the 2000s (MOGAHA, 2005: 17-18).<sup>39</sup>

The Roh Moo-Hyun administration claimed that the problem with South Korea’s economy was a result of the inefficient distribution of resources between the Seoul metropolitan area (*Sudogwon*)<sup>40</sup> and the other regions (Seong Kyong Ryung, 1995: 48-49).<sup>41</sup> Under the administration, which was more favourable to devolution, local authorities and civil

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<sup>39</sup> Each administration sets the rhetoric of its own under the name of a policy target. The target of the Park Chung-Hee administration was “modernization of fatherland”; the Chun Doo-Hwan administration advocated “social justice”; the Kim Young-Sam administration pursued “globalization”; the Kim Dae-Jung administration was geared for “parallel development of democracy and the market economy”; the Roh Moo-Hyun administration sought “balanced national development”; the Lee Myung-Bak administration places top policy priority on “green growth”; and currently, the target of the Park Geun-Hye administration is “creative economy”.

<sup>40</sup> Seoul Metropolitan Area is the economic boundary of the urban form rather than the administrative boundary. Seoul, Gyeonggi province, and Incheon are the regions making up the Seoul metropolitan area. It represents the labour markets (the area from which people commute to the urban area) and thus includes both the urban area and the surrounding economically attached rural and exurban areas (OECD, 2000: 25).

<sup>41</sup> Roh Moo-Hyun’s administration’s recognition of the input-driven economy being linked with unbalanced development was implied in the above remark. President Roh Moo-Hyun’s separate public address at the 17<sup>th</sup> National Assembly Opening Celebration showed his views on the problem of the Korean economy being trapped in an income of 10,000 USD and the alternative way to resolve the issue: “The input-driven economy of concentrated capital and labour disclosed its limit by the IMF financial crisis. We should transform it into an innovation-driven economy, which uses technology and human resources as the power for growth.” (Office of the President, 2005: 194)

society became important negotiating partners for the reform (*The Korea Times*, May 24, 2005).<sup>42</sup>

Regional development in South Korea has benefited the Seoul metropolitan area, which has been in the ascendancy. This ascendant status of the area has been reinforced by the nation's industrial policy of promoting knowledge-based industries to bolster national competitiveness. To improve national competitiveness in the global economy, the central government has gradually relaxed some of the regulations restricting industrial activities in the Seoul metropolitan area.

Table 4-1 Comparison between Metropolitan areas

	Area (km <sup>2</sup> )	Inhabitants (1000s)		Population change	
		1995 (A)	2000 (B)	B-A	A/B
Seoul	11,754 (11.8)	20,189 (45.3)	22,767 (48.2)	2,582	1.13
Tokyo	13,282 ( 3.5)	32,577 (25.9)	34,472 (27.0)	1,895	1.06
Paris	12,001 ( 2.2)	11,072 (18.9)	11,130 (18.1)	103	1.01
London	20,590 ( 8.5)	14,854 (25.5)	15,490 (25.6)	636	1.04

Note: Seoul, Tokyo, Paris (Il de France) and London (Greater London) include metropolitan region. Bracket ( ) includes national ratio. Source: Kim, Yong-Woong *et al.* (2009: 417).

Compared to other advanced economies, as seen in Table 4-1, it is argued that the concentration of power in the Seoul metropolitan area is excessively high and unprecedented than other areas. When Gravier (1947) wrote the book *Paris and the French Desert*, the concentration of population and industries in Paris was far less than that of Seoul. No metropolitan region in the UK, Japan, or France has as many of the political, social, and economic resources and opportunities as the metropolitan area of South Korea has. Indeed, the rest of the country is dependent upon the important decision making and resources of the metropolitan area. They have been deprived of

<sup>42</sup> President Roh Moo-Hyun, since the early 1990s, had expressed his great interest in decentralization, de-concentration, and balanced development policies, and had even established a private research institute by himself, namely, the Centre for Local Autonomy in 1993.



central decision-making functions as represented by the main offices of the government, leading businesses, public organizations, and private agencies. Therefore, regional inequality has attracted considerable policy interest from central government.

From 1962 to 2002, South Korea established five-year economic development plans as an upper level plan for national development. Replacing this, the Roh Moo-Hyun administration (2003-2008) established the *Special Act for Balanced National Development (SABND)* and formulated the Balanced National Development Plan (BNDP) for five years (2004-2008).<sup>43</sup> President Roh Moo-Hyun's inaugural speech on 25 February 2003 explicitly symbolised the ideology and line of the BNDP:

For the future of the country, the centralisation and concentration in the Seoul metropolitan area can no longer be left unattended. Devolution of power to the provinces and balanced national development have become tasks that cannot be put off any longer. The central and the provincial parts of the country should be developed in a harmonious and balanced manner. (16<sup>th</sup> Presidential Transition Team, 2003: 441)

The BNDP is distinguished from the past development paradigm in many respects. Past regional-development policies were usually planned and executed by the central government without proper coordination, which led to a lack of consistency and inefficiency due to overlapping investment. To resolve these problems, the Roh Moo-Hyun administration changed the execution system completely so that each regional policy could be planned and enforced for each province. That is, each province became a unit for the planning and execution of regional policy (Kim Dong-Ju, 2004; Kim Dong-Ju and Moon Jeong Ho, 2012).

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<sup>43</sup> President Roh, and the Participation Government established the Government Innovation and Decentralization Committee to promote fiscal decentralization under the presidential committee.

In addition, “the Presidential Committee on Balanced National Development (PCBND)<sup>44</sup> was founded as a control tower, and Special Accounting for Balanced National Development was established to manage balanced development policy independently and systematically” (Lee Yong-Sook, 2009: 358). The aim was

to create a balanced society where all the people in the nation can enjoy a high-quality of life, maintaining their characteristics by promoting independent localisation where each region can develop based on innovation-oriented growth strategies, while still maintaining its own characteristics. (PCBND, 2005: 20)<sup>45</sup>

The Roh Moo-Hyun administration that followed similarly pursued strategies that were intended to boost the global competitiveness of South Korea’s regions and the country’s effective adaptation to neo-liberal globalization. The dilemma between growth and spatial equity constitutes the core decision about the character of regional development policies throughout different times and places. As far as the process of regional development policies and institutions is concerned, there are certain policy changes at the state level (Hermanns, 2009a; 2009b).

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<sup>44</sup> The PCBND was established in 2003. Its model was France’s DIACT (the Interministerial Agency for Spatial Planning and Competitiveness) (PCPP, 2008: 33). The council is organized under the direct authority of the President, involving twelve related ministries and fewer than 30 experts from the private sector. For the institutional settings, the Participatory Government enacted the Special Act for Balanced National Development in January, 2004. The committee finalized the first BNDP in August, 2004. In order to mobilize financial resources for the implementation of the BNDP, the central government established Special Accounting for Balanced National Development. The special accounting is for funding development projects that agree with the guidelines for several types of policies announced by the committee. This first BNDP covers a broad sphere of action beyond physical spatial policy. It has an innovation policy, industrial policy, balance policy, spatial policy, and quality policy. These five policies are implemented by multi-sector annual programs.

<sup>45</sup> Seong Gyeong Ryung, the leader of the BNDP and the first chairman of the PCBND had previously argued that “regional hegemony and centralism are two obstacles against historic transformation in Korea” (Seong Kyong Ryung, 1995: 48-9). He continued his critical view on a regional problem, especially concentration on the capital region, by commenting that interlinked imbalances “formulated the structure of privilege, discrimination and exclusion” (Seong Kyong Ryung, 2003: 6).

Table 4-2 Devolution plans since 1998

Administration	Plans	Key contents
The Kim Dae-Jung administration (1998-2003)	Law for the Promotion of Transfer of Central Authorities (1999)	Delegation of Central Affairs to Local Governments Delegation of the Authority of Public Security (Police) and Creation of Local Police Delegation of the Authority of Public Education to Local Governments (Educational Autonomy)
The Roh Moo-Hyun administration (2004-2008)	Decentralization Roadmaps (2003); Special Law on Decentralization Promotion (2004)	Abolition of Special Administrative Agencies (SAA – Local offices of central ministries) Rationalization of National and Local Tax System (Raising the Rate of Local Allocation Tax) Enhancement of Authority of Local Councils (Strengthening the Authority of Local Legislation)

Source: Ministry of Government Administration and Home Affairs (MOGAHA, 2005: 45)

In 2003, the central government announced that the BNDP sought to classify 234 districts (including locals in Gyeonggi Province) into four categories (underdeveloped, stagnant, developing, and developed) and to impose varying levels of corporate tax incentives and health insurance fees depending on their status (KRILA, 2012: 52-53). For example, underdeveloped regions would get a 70% discount in corporate taxes, stagnant districts 50%, and developing districts 30%. Developed districts would have to pay the full tax. If a large firm based in a developed districts were to move to an underdeveloped one, it would get a 70% discount in corporate income tax for the first 10 years and a 35% cut over the next five years.

This was based on a regional system of innovation practices and cluster theory, which advocated a shift from state-driven development policies to multiple actor-centred development policies (Seong Kyong Ryung, 2003: 9-10). Their models were the Cambridge Science Park in the UK, Silicon Valley in the USA, and the Third Italy in Italy, where the region's industry, government, research institute, and university created value-added when together (Seong Kyong Ryung, 2008: 17).

#### 4.4.2 The Capital relocation

In 2003, balanced development had been on the national agenda for the previous four decades, as the excessive concentration of political economy in the Seoul metropolitan area continued to exacerbate stagnation in the rest of the country. While the area occupies only 11.8% of the country's territory, its population had increased from 20.8% of the nation's total in 1960 to nearly half in 2013. In 2005, the capital area accounted for more than two-thirds of the central management functions in the public and private sector.<sup>46</sup>

Based on the legal grounds provided by the SABND, which took effect in 2004, the government decided to promote relocation policies: building of the New Multifunctional Administrative City, relocation of public institutions, and the creation of what they called "innovation cities" (Kim Kwang-Ho, 2010: 75-76).

At first, the Roh Moo-Hyun administration planned to initiate, before his term expired, the movement of the new administrative City from Seoul to Choongchung province near Yeongi-Kongju, about 120 km south of Seoul, although it would take much longer than this to accomplish (*BBC News*, 11 August, 2004).<sup>47</sup>

Although in the 1980s, a part of the administration of the executive branch had already moved south to Gwachon, about 30 km south of Seoul, the aim of the latest move was to balance national development and mitigate the excessive concentration of wealth in the capital and the surrounding Gyeonggi province. The aim of this attempt may have been

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<sup>46</sup> A total of 410 public agencies including the central administrative organizations that exist at present, and 85% (346) out of 410 total, are concentrated in the Seoul metropolitan area. For details, see <http://innocity.mltm.go.kr/eng/public/public03.jsp>.

<sup>47</sup> President Roh Moo-Hyun declared himself a decentralist. He showed strong intent to carry out decentralization, de-concentration, and balanced development policies during his presidency. Surprisingly, even when he was a maverick politician and National Assemblyman, he expressed his great interests in decentralization and de-concentration, had a connection with prominent scholars, and established a private research institute by himself, namely, the Center for Local Autonomy in 1993.

to not only decentralize the national administration and increase provincial wealth, but also to affect income distribution more generally. The capital relocation plan has been widely discussed in the media and in the National Assembly, and some have called for a national plebiscite on this issue. This clearly is motivated by an attempt to break up the intellectual elite that has dominated South Korea for several decades.

Figure 4-3 New capital site



Source: <http://en.starafrica.com/news/s-korea-to-open-controversial-new-mini-240406.html>

The new administrative city (named Sejong) has been designated as a special autonomous city in which nine central government ministries, related government agencies, and government research institutes are slated to be relocated. This is similar to Washington, D.C., in the US (*The Washington Post*, 17 August, 2012). Seoul is like New York as centre

of finance and business and the new administrative city (SeJong) is similar to Washington D.C. as centre of administrations and politics in the US.<sup>48</sup>

Second, the Roh Moo-Hyun administration planned to move 176 public institutions and state-run organizations from the Seoul metropolitan area to other areas and to encourage the private sector to seek new homes outside the Seoul metropolitan area (*Article 18, SABND*). For example, by 2012, Korea Electric Power Corporation and Korea Land Corporation had moved to Gwangju, 330 km southeast of Seoul, and to Jeonbuk province respectively. Similarly, Gyeongnam province is the new home of the Korea National Housing Corporation. Furthermore, there has been some serious discussion about moving Seoul National University, the premier university in the country, south to the Yeongi-Kongju area. Along with the relocation plans, the government has selected six small-sized cities to develop into business centres and is receiving more applications from municipalities.

Thirdly, “innovation cities” refers to a plan to build ten cities in the non-metropolitan areas to recognize the existing national spatial structure. Rather than simply re-distributing the effects between Seoul metropolitan area and other developed regions, innovation cities were to be achieved by promoting the diverse development capabilities of different regions and to generate a more balanced competitiveness and more spatially integrated approaches to development. Another reason was that such a transfer would give the provincial governments the opportunity to become more economically independent (Seo Joon-Kyo, 2009; Kim Dongsoo and Kim Youngsoo, 2013).

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<sup>48</sup> To treat those that move to sites out of the new administrative city, Sejong, the *Special Act for Constructing and Supporting Innovation City in Consequence of Government Ministries' Relocation* was established in January 2007. The first stage (2007-2012) was the stage for the relocation of governmental ministries/institutions; the second stage (2013-2020) is the stage for industry, academia and research bodies; and the third stage (2021-2031) is the stage for innovation to diffuse. It is planned that the staff of relocated ministry/institution and related companies will number 2,500-4,000 in each city, and the planned induced population is 15,000-25,000. (PCBND, 2004).

To sum up, BNDP differed from the previous regional policies in many respects. Past regional policies were usually planned and executed by central government and their agencies without proper coordination. The Roh Moo-Hyun administration tried to change this so that each regional policy could be planned and enforced for each region. That is, each region became the unit of planning and execution of regional policy. The PCBND was founded to manage the BNDP, and the SABND was established to guide balanced development policy independently and systematically.

This gave rise to great resistance, however, because wealth in South Korea is largely concentrated in real estate (Steinberg, 2006: 92), and such a move would severely damage the assets of many individuals in Seoul. The opposition party, the Grand National Party (GNP, now the Senuri Party), fiercely opposed the bill, and the Gyeonggi government and council members also expressed strong opposition to it. A petition against the constitutionality of the *Special Act for the Administrative City Construction* was filed, which claimed that “the act is practically intended for the relocation of the capital of the country.”

The Constitutional Court held that although the capital of South Korea was not written in the Constitution, Seoul had been the capital for six hundred years, and hence, this location of the national capital had become a “constitutional convention.” Therefore, for any relocation of the national capital, the government needed either to amend the constitution or hold a national referendum. Although the Roh Moo-Hyun administration accepted the constitutional court’s decision, it insisted on the necessity of diluting the powers concentrated in Seoul and the Gyeonggi province (*The Korea Herald*, 28 June 2012).

A noticeable change in devolution happened in 2008 when the government was the Lee Myung-Bak administration (2008-2012) of the conservative party. The seismic change of

government meant it was not possible to ensure the consistency of the former regime's specialised policies. According to the *Maeil Gyeongje* newspaper, Lee Myung-Bak pointed out in an interview with *Reuter* that the administrative city would prove to be the failure of the Roh Moo-Hyun administration.

Although the Lee Myung-Bak administration and the Park Geun-Hye administration (2013-present) declared that they would continue with the outline of the policies inherited from the Roh Moo-Hyun administration, fundamental changes were made to the BRDP framework (17<sup>th</sup> Presidential Transition Team, 2008: 351).

First, the PCBND was nearly abolished in the process of reorganising the government; then it was renamed the *Presidential Committee on Regional Development (PCRD)*, meaning the term "balance" was removed. During the change, the PCBND criticised the former BRDP for its "adherence to arithmetic and consequent balance" (PCBND, 2008a: 2) and "whack-up policy" (PCBND, 2008b: 4). Secondly, the SABND was fully revised in April 2009 despite opposition from other regions. The keywords, such as "balance" and "innovation", disappeared in the new regional policy.

The PCRD's first annual report (2008: 15) pronounced that the paradigm of regional policy had been shifted "from balance and dispersion to co-prosperity and competition". Finally, the Lee Myung-Bak administration decided to deregulate the restriction of the metropolitan area to facilitate national competitiveness, which had been the main pillar of regional policy since the 1960s. Moreover, the GNP's politicians constantly raised questions over the New Multifunctional Administrative City and innovation cities. This reorientation was a tremendous shock to the non-capital regions. However, the government could not prove the need for the drastic transformation. They also suggested that interregional cohesion should be a new policy goal, but the inconsistency of regional



policies was responsible for intensifying conflicts between the capital region and non-capital regions.

#### **4.5 Concluding reflections: continuing tension and new horizons**

The impact of national legacies in shaping regional politics was significant, as this chapter has demonstrated. The theoretical perspectives presented in Chapter 2 emphasise factors such as the inherited administrative structures, production capacities, and policy paradigms alongside the elements of national and local history and culture. The incorporation of this particular set of factors into the analysis of the changing politics of regional policies in South Korea does not imply the rejection of the dominant economic variables and statistical indices. On the contrary, it counterbalances the prevalent economic tendency by supplementing the analytical framework with non-economic variables.

Thus, this chapter has highlighted the institutional traditions in South Korea from the earlier history, the military regime, and the post-military regime period. The historical reviews have revealed the existence of regional administrative traditions across the country, which were directly related to the process of the national consolidation and state formation. These kinds of traditions offer a significant tool to explain the difficulties that appeared in certain localities regarding acceptance of particular administrative reforms and the constant attempts of others to restore previous structures.

In addition, these reviews illustrated that whenever regional development policies existed, they normally constituted part of a broader territorial or sectorial national development plan. This subordination of local needs and aspirations by the national priorities and goals, irrespective of whether it was justified on nationalistic or ideological grounds, has resulted

in a lack of experience and of administrative capacity for the design and delivery of autonomous local and regional development projects.

After having examined the historical development of state-regional relations, we may argue that South Korea's regional autonomy is able to pursue regional interests. Although local autonomy is highly constrained by central government, the bulk of community power rests in the hands of the provincial governments. However, one issue that has received less attention is that of the interaction between regional interests and state interests. Does regional economic priority interact at all with national priority in South Korea? Does regional economic policy complement or contradict that of its central government?

Certainly, the characteristics of the development patterns have influenced the nature of development policy and politics in the Gyeonggi province after the review of local autonomy in South Korea. The degree to which these inherited legacies, traditions, and norms have continued to exist, or to have been eliminated or amended during transition, as well as the degree of their impact in the post-catch-up economy, is examined in the next empirical chapters.

## **5 System of innovation in Gyeonggi province: core region and obstacles to change**

The theoretical perspectives having already been described in Chapter 2 and the national background regarding the national force in devolution having been reviewed in Chapter 4, this chapter aims to respond to questions related to the current system of innovation in Gyeonggi province.

This chapter focuses on industrial policy processes in Gyeonggi province by tracing the connections between specific strategic aims and policy agendas. During the period of the national rebuilding with the “Five-Year Economic Development Plan”, not only higher education institutes but also research institutions were concentrated in Gyeonggi province. The concentration of knowledge infrastructures has been very effective in accelerating growth because those institutions have provided the skilled labour required for the development. In addition, the strong push of the central government for the fast economic growth and the effective distribution of funds through the bank loans offered at a low rate of interest have helped to bring about rapid economic growth. However, due to the rapid increase in the population of the region, central government has begun to employ a series of population and economic redistribution policies. It is these conditions and pre-conditions that are characteristic of the RSI of Gyeonggi province to date.

This chapter comprises four sections. The first section highlights the ways that the historical developments and legacies of the country, which were analysed in the previous chapter, have influenced the economic profile of Gyeonggi province.

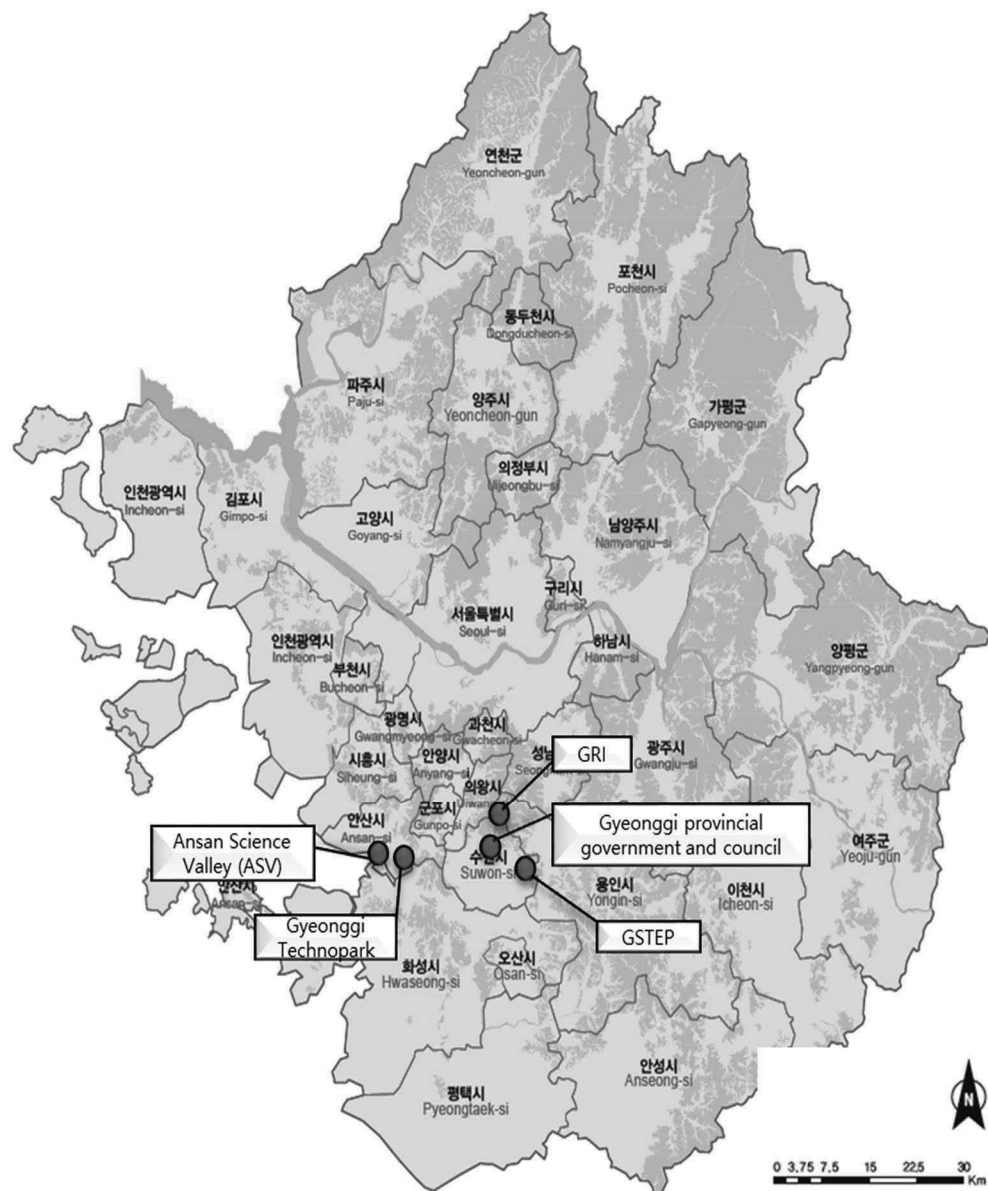
The second section focuses on policies and key actors together with the processes and practices that have shaped the province’s nature and its dynamics. Although Chapter 4 touched upon issues from a broad range of regional policy areas, the section concentrates on the regional policy areas of urban development and industrial development in

Gyeonggi province. The formation and evolution of structures in terms of policies and relationships are explored along with the competence to enhance collaboration. The selected policy areas comprise typical examples of the challenges surrounding the processes of industrial policy and planning. It is also shown that, in Gyeonggi province, the ministries and the Technopark are dominant players in the knowledge generation and diffusion subsystem.

The third section identifies the degree of the relationship between national and regional levels. In Gyeonggi province, the relation is already ensured given that regions have fewer responsibilities and competencies, implying that they have fewer policy-making powers.

The chapter concludes by drawing reflections from the Gyeonggi province's experience with regard to urban development policy and industrial policy in terms of the structural factors from a strategic-relational perspective.

Figure 5-1 Political map and location of key actors of Gyeonggi province



Source: Gyeonggi provincial government (2012: 8)

## 5.1 The story so far

Gyeonggi province is a region shaped like a doughnut surrounding the capital city, Seoul (see Figure 5-1), which has been located in the centre of this region for over a millennium.<sup>49</sup> The area is 10,183 km<sup>2</sup>, which is only 10% of the total land area of South Korea. In terms of area, it is roughly half the size) of South East England (19,096 km<sup>2</sup>). The region is the most developed province, with a population of approximately 11 million and a huge consumer market with about 22 million people in the Seoul metropolitan area. Thus, more than 50% of South Korea's population lives in the Seoul metropolitan area.

Table 5-1 Population growth in Gyeonggi province

	Population (thousand)					Growth (%)			
	1970	1980	1990	2000	2010	70-80	80-90	90-00	00-10
Korea	30,882	37,436	43,847	46,136	48,581	21.2	17.1	5.2	5.3
Gyeonggi	1,842	4,933	6,156	8,984	11,196	167.8	24.8	45.9	24.6
Seoul	5,443	8,364	10,628	9,895	9,631	53.7	27.1	-6.9	-2.7

Note: Population decreased sharply as many people died during the Korean War (1950s). South Korea experienced a baby boom, which led to a temporarily rapid population growth rate after the 1960s.

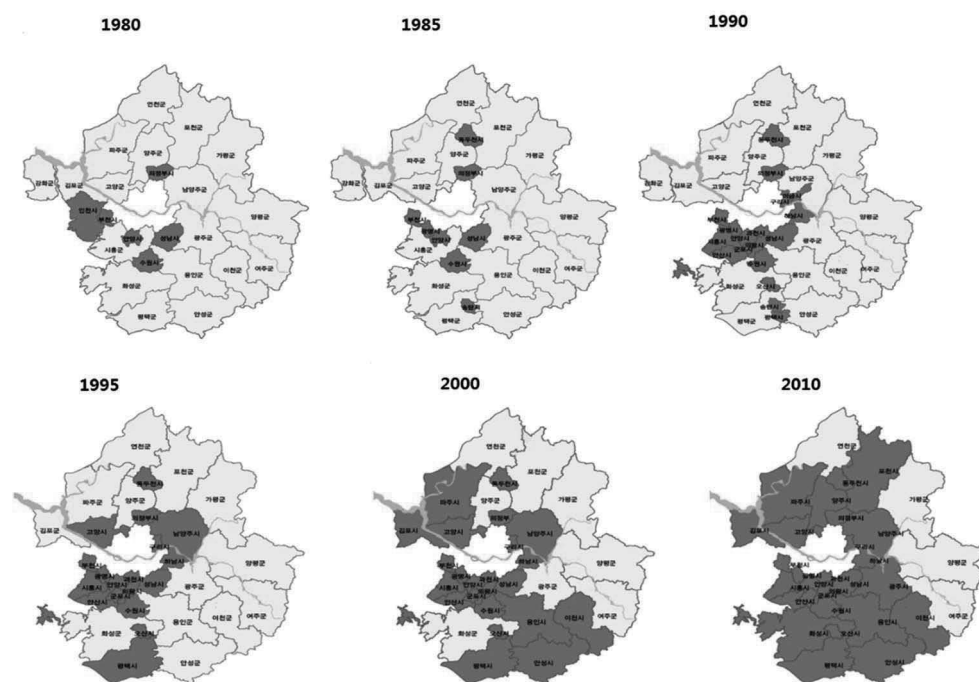
Source: Korea Statistical Information System (KOSIS)

Table 5-1 reveals that Gyeonggi province experienced a very rapid population increase of more than six-fold from 1,842 thousand in 1970 to 11,196 thousand in 2010. Over the same period, the entire South Korea population increased from 30.8 million to 48.5 million. The majority of the total population growth occurred in Gyeonggi province. Population growth is about internal migration. The population of Gyeonggi province has exceeded that of Seoul since 2005. Indeed, the rate of growth in Gyeonggi province has

<sup>49</sup> The name "Gyeonggi" was first used in 1026 (the *Korae* Dynasty). During the *Korae* Dynasty, Gyeonggi was governed by separate "Left Gyeonggi" and "Right Gyeonggi" administrations until 1414 (GRI, 2014:1). The founding of the *Joseon* Dynasty in 1392 and the moving of the seat of government to *Hanyang* (former Seoul) were the turning points in the shaping of Gyeonggi as we know it today. Left and Right Gyeonggi were combined and renamed Gyeonggi. The north western part came under the region of Hwanghae province (of North Korea) and the southern eastern part transferred to Gyeonggi province to form the current territorial boundary (GRI, 2014: 6).

been fuelled by a massive inward migration of residents from the countryside, particularly, between 1970 and 1980 (Mawson, 1997: 417).

Figure 5-2 The growth of cities and counties in Gyeonggi province



Note: The cities are highlighted in dark colour.

Source: GRI (2008: 22)

The growth of the region has been characterised by the construction of new satellite cities around the established metropolis since 1975. The share of the construction of new cities was especially important during the period 1985-1990.<sup>50</sup> The Korean government began

<sup>50</sup> The development of Gyeonggi province is related to the rapid industrialization of South Korea. In the course of industrialization, population and income per capita have grown as well, spurring the housing demand. In the late 1980s, the Seoul metropolitan area suffered from an extreme shortage of housing and soaring housing prices accompanied by severe real estate speculation, which became a political burden to the administration. Consequently, the Roh Tae-Woo administration initiated land development policies (Two Million Home Construction Plan) in Gyeonggi province. The “Two Million Home Construction Plan” is a housing policy from the early 1990s that built five new towns (Bundang, Ilsan, Pyeongchon, Sanbon, and Joongdong). These were developed as the main component of the plan, and they had provided about 300,000 new housing units by the mid-1990s. The five new towns are situated at a similar distance from the centre of Seoul (20-25 km) (*the Korea Herald*, July 15, 2013).

to construct new satellite cities around the metropolis because the government has been concerned with the redistribution of the urban population due to the continuously rapid growth of the urban population, especially in Seoul (Kim Ik-Ki, 2010: 114).<sup>51</sup>

During the 1980s and early 1990s, the Seoul metropolitan area emerged, following the expansion of Seoul into the surrounding areas, including Incheon and Gyeonggi province. The metropolitan area absorbed most of the national population and economic growth, while the rest of the country suffered from population loss and relatively slow economic growth (Hashiya, 1996: 449-453). In addition, despite large numbers of people, there are still large areas of unpopulated countryside in the region, especially east and north part where the region borders North Korea.<sup>52</sup>

Population concentration is associated directly with economic development. Thus, Gyeonggi province often receives special attention, as it is perceived as a miniature version of South Korea due to its economic profile, which to some extent, mirrors the country's economic structure.

Gyeonggi province produces around a quarter (23%) of South Korea's value-added. The region exported goods and services to the value of 99,100 billion KRW in 2010, and 18.4% of South Korea's total exports (GRI, 2012: 14). It also has a representative share of the GDP, which was 13.8% in 1985, and 19.8% in 2010, presenting a total of 232 trillion KRW at current prices (see Table 5-2). In terms of Gross Regional Domestic Product (GRDP),

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<sup>51</sup> At the city level, there are in total 27 cities and 4 counties in Gyeonggi province, of which seven are large cities with a population of more than 700,000; Suwon is the biggest city (with a population above a million), and it is the capital of Gyeonggi province. The population of the other relevant cities at the centre of this thesis are as follows: Ansan (seventh biggest with a population of 739,493) and Sunghnam (second with 979,035). Those cities are concentrated in the western and southern area of the region, and some cities were elevated from county to city status owing to the influence of Seoul's new town development plan (see more specific population status by city and country at <http://eng.gg.go.kr/276>).

<sup>52</sup> Gyeonggi province borders North Korea's Hwanghae province. In fact, the top part of Gyeonggi province was cut off when the country was split in two after the Korean war. So the region is strategically important in terms of international relations and business markets.



Gyeonggi province ranks as the second most prosperous region amongst sixteen regions, behind Seoul.

Table 5-2 Gross Regional Domestic Product (GRDP) in Korea (1985-2010) (unit: a billion KRW)

	1985	1990	1995	2000	2005	2010
Korea	89,570	198,618	420,686	603,733	869,304	1,172,742
Seoul	22,877	51,989	108,506	151,355	208,899	271,649
Busan	6,966	14,386	26,080	34,127	48,068	59,531
Daegu	3,874	8,644	16,032	21,859	28,756	35,631
Incheon	4,048	9,786	21,287	27,121	40,398	56,856
Gwangju	0	4,491	9,619	13,134	18,896	25,140
Daejeon	0	4,680	9,645	14,008	20,029	26,412
Ulsan	0	0	0	28,958	41,697	59,159
<b>Gyeonggi</b>	<b>12,324</b>	<b>32,541</b>	<b>72,993</b>	<b>114,628</b>	<b>169,315</b>	<b>232,428</b>
Gangwon	3,599	6,704	12,250	16,964	23,014	28,828
Choongbuk	3,122	5,974	14,195	19,841	26,720	36,233
Chooingnam	5,691	7,301	17,230	29,277	47,497	76,353
Jeonbuk	3,389	6,446	14,222	19,298	25,221	34,643
Jeonnam	6,586	9,541	21,262	27,829	42,815	58,750
Gyeongbuk	6,740	13,700	26,593	40,377	61,757	78,313
Gyeongnam	9,556	20,552	46,590	39,600	58,250	82,340
Jeju	792	1,877	4,175	5,350	7,966	10,468

Note: Results for the Gyeonggi province and for Korea are highlighted in bold.

Source: Korea Statistical Information System (KOSIS)

This rapid economic growth can be better explained in relation to rapid industrialization and urbanization (Kim Ik-Ki, 2010: 116-118). The rapid expansion of the manufacturing sector and the correlating increase in service industries has resulted in a large influx of the rural population into urban areas. The central government adopted strategies of industrial concentration by converging investments on manufacturing sectors to achieve efficient resource allocations (Markusen and Park Sam Ock, 1993; Park Sam Ock, 1993). Gyeonggi province has experienced rapid spatial changes and a drastic concentration of economic activities.

### 5.1.1 Key industries and Banwol-Siwha industrial districts

There are more than 60,000 manufacturing SMEs in the Gyeonggi province, accounting for approximately 33% of all SMEs in Korea. Furthermore, 5,600 venture firms are also operating in the region, comprising about 30% of all such firms in the country (*Korea IT times*, November 3, 2009). Particularly, similar to the economic development of South Korea, Gyeonggi province's industrial tradition is closely linked to mechatronics (i.e. mechanical engineering and electronics)<sup>53</sup>, textiles, and information and communication technology (ICT). Although these industries have declined over recent decades, traditional industries with low growth rates are still over-represented (see Table 5-3).

Table 5-3 Valued added of key industries by regions in South Korea (2011, %)

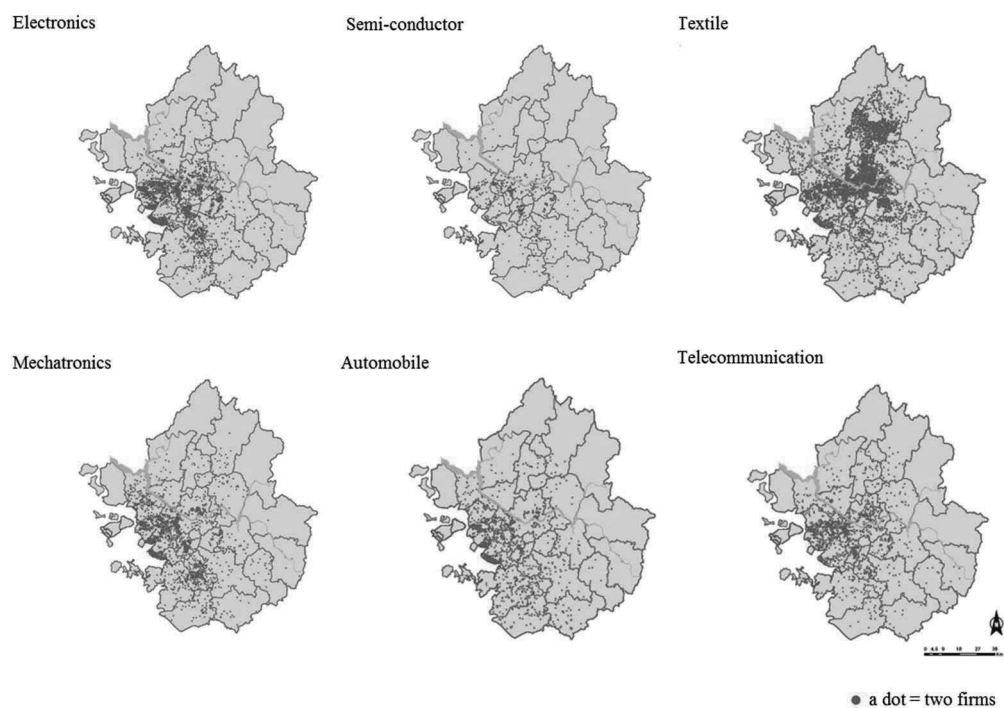
	Automobile	Shipbuilding	Machinery	Steel	Precision chemical	Textile/garments	Electronics	Telecommunication	Semi-conductor
1	Gyeonggi (26.1)	Gyeongnam (44.1)	Gyeonggi (26.9)	Gyeongbuk (30.8)	Ulsan (33.9)	Seoul (43.1)	Gyeonggi (28.2)	Gyeongbuk (59.4)	Gyeonggi (79.7)
2	Ulsan (20.7)	Ulsan (40.7)	Gyeongnam (26.3)	Jeonnam (25.9)	Jeonnam (22.1)	Gyeonggi (13.7)	Gyeongnam (18.1)	Gyeonggi (31.5)	Choongbuk (7.6)
3	Choongnam (10.7)	Jeonnam (10.1)	Incheon (10.5)	Choongnam (8.9)	Gyeonggi (12.3)	Gyeongbuk (12.7)	Choongnam (17.2)	Seoul (2.5)	Choongnam (5.3)
4	Gyeongnam (8.3)	Busan (3.1)	Choongnam (7.7)	Gyeongnam (7.7)	Choongnam (10.4)	Daegu (7.9)	Gangju (11.1)	Incheon (1.9)	Gyeongbuk (2.9)
5	Gwangju (7.8)	Jeonbuk (1.3)	Busan (5.1)	Busan (6.5)	Jeonbuk (5.4)	Busan (5.9)	Gyeongbuk (6.5)	Gyeongnam (1.6)	Seoul (1.3)
6	Jeonbuk (6.0)	Gyeongbuk (0.6)	Gyeongbuk (4.7)	Gyeonggi (5.3)	Choongbuk (5.0)	Ulsan (5.3)	Incheon (5.5)	Choongnam (0.9)	Gwangju (1.3)
7	Gyeongbuk (5.1)	Choongnam (0.1)	Daegu (4.0)	Incheon (4.9)	Gyeongbuk (3.3)	Gyeongnam (2.6)	Choongbuk (3.6)	Daejeon (0.7)	Jeonbuk (0.9)
8	Incheon (4.7)	-	Ulsan (2.6)	Jeonbuk (3.7)	Incheon (2.2)	Choongnam (2.6)	Seoul (2.9)	Choongbuk (0.5)	Daejeon (0.6)
9	Daegu (3.3)	-	Jeonbuk (2.6)	Ulsan (2.8)	Daejeon (1.9)	Jeonbuk (1.7)	Daegu (2.0)	Daegu (0.4)	Incheon (0.3)
10	Choongbuk (3.1)	-	Daejeon (2.1)	Gangwon (1.1)	Gyeongnam (1.4)	Choongbuk (1.6)	Busan (1.4)	Gwangju (0.3)	Gyeongnam (0.1)
11	Busan (2.9)	-	Choongbuk (2.1)	Choongbuk (1.0)	Busan (1.0)	Incheon (1.2)	Daejeon (1.4)	Busan (0.2)	Daegu (0.1)
12	Gangwon (0.8)	-	Seoul (2.1)	Gwangju (0.7)	Seoul (0.5)	Gwangju (0.8)	Jeonnam (0.8)	Jeonbuk (0.1)	-
13	Daejeon (0.3)	-	Gwangju (2.0)	Daegu (0.5)	Gangwon (0.4)	Daejeon (0.5)	Jeonbuk (0.6)	Gangwon (0.1)	-
14	Seoul (0.1)	-	Jeonnam (0.7)	Seoul (0.1)	Daegu (0.2)	Jeonnam (0.3)	Ulsan (0.4)	Jeonnam (0.0)	-
15	Jeonnam (0.1)	-	Gangwon (0.6)	Daejeon (0.1)	Gwangju (0.1)	Gangwon (0.2)	Gangwon (0.3)	-	-
16	-	-	-	-	Jeju (0.0)	-	-	-	-

Source: Korea Statistical Information System (KOSIS)

<sup>53</sup> "Mechatronics" involves technologies in mechanical engineering, electronics, electrical engineering, control engineering and computing. "Automated robots" at manufacturing assembly lines are an example of mechatronics.

The key industries are agglomerated in particular areas within the region. The northern part of Gyeonggi province, where LG Display is based, serves as the production base for OLED and LCD panels, sectors in which South Korea boasts the highest world market share. NEG, KOTEM, and Ulvac Korea, world-renowned names in LCD, are also located here, making the location a display-products complex. In the southern section of the province lies a car-making cluster, where the country's largest car manufacturers, including Hyundai-Kia and Ssangyong, and foreign parts-makers (e.g. Bosch, Siemens, and Delphi) are situated. Vehicle institutes can also be found here.

Figure 5-3 Geographical distribution in Gyeonggi province



Source: GSTEP (2011a: 34)

In particular, firms are clustered in the Banwol-Shiwha industrial district of the west coast of Gyeonggi province. It is a national industrial district, which was originally intended to

relocate the pollution-making industries from Seoul to Ansan.<sup>54</sup> Due to its original purpose, the district accepted polluting industries, such as chemical production, plating, dyeing, coal, textile, steel industries and so on. These industries were the main producers and exporters that brought economic growth in the 1980s and 1990s (Park Sang-Chul, 2007, 2012; KDI, 2012). Currently, more than 9,000 firms occupy the area, with a total production of 41.3 trillion KRW (7.72 billion USD) in exports and over 170,000 employees.

Table 5-4 Banwol-Siwha Industrial districts (September 2006)

	Banwol			Siwha		
Preparation period	1977-1987			1986-2002		
Management	KICOX, K-Water			KICOX, K-Water		
Size	15,374,000m <sup>2</sup>			16,581,000m <sup>2</sup>		
Firms	2,425 (Small:1,960, Medium:437, Large:28)			4,551 (Small:4,099 Medium:445, Large:7)		
Key Industry	Machine	954	38%	Machine	2,350	49%
	Electronics	504	20%	Electronics	551	12%
	Auto parts	124	5%	Auto parts	308	6%
	Chemistry	322	13%	Chemistry	455	9%
	Textile	213	8%	Textile	109	2%
	Steel	101	4%	Steel	424	9%
	Others	328	13%	Others	620	13%
Products	18,830 hundred million KRW/month			19,203 hundred million KRW/month		
Exports	288 million USD/month			320 million USD/month		
Employment	89,075			83,635		

Note: The creation and the management of industrial districts have been executed by KICOX and K-Water. KICOX (Korea Industrial Complex Corporation) has managed and supported firms entering their industrial districts since 1997. K-Water (Korea Water Resources Corporation) is a government-funded organization that was established in 1967. Its major business activities include water resource development, power generation, dam management, water supply, industrial infrastructure development, and new town and industrial complex development.

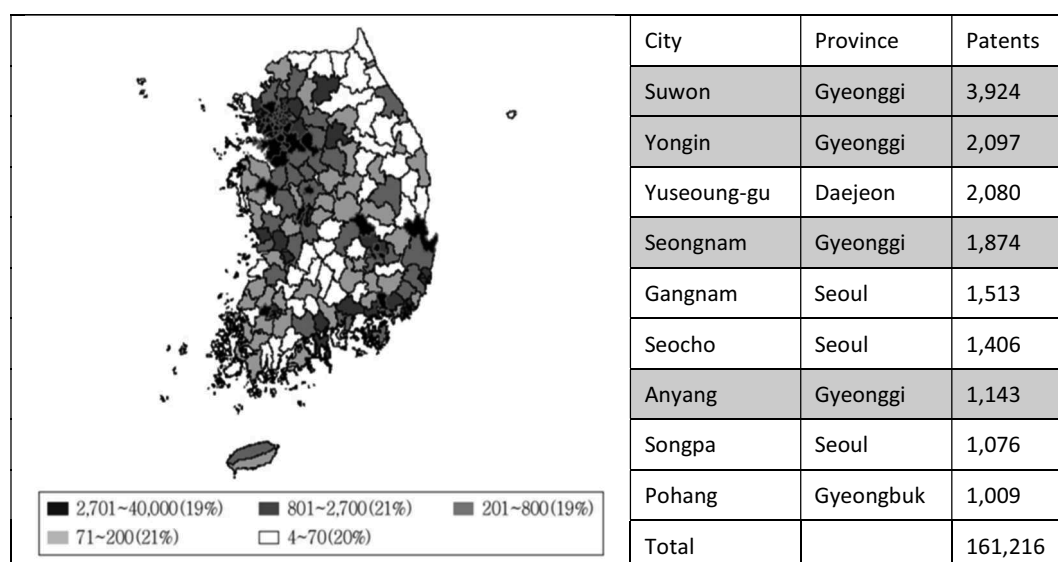
Source: Korea Industrial Complex Corporation (KICOX)

<sup>54</sup> During the 1980s, Ansan increased in its capacity in terms of population. Ansan earned the title of “city” in 1986 with a population of 120,000 people. Due to increasing demands for additional factory space, the central government confirmed construction of the second industrial district, called the Shiwha industrial district, right next to Banwol industrial district in 1986. After earning the title of city and completing the construction of the additional industrial space, the city-region grew rapidly. In 2008, the population grew rapidly up to 750,000, including 20,000 foreigners.

### 5.1.2 Higher knowledge infrastructures

Higher knowledge infrastructures are more unevenly distributed across the country. Figure 5-4 illustrates how total patents granted between 2000 and 2009 in South Korea were concentrated in Gyeonggi province. Only nine cities averaged more than 1000 patents per year between 2000 and 2009; those nine cities accounted for 161,216 patents, that is, 36.8% of the all patents of South Korea. Four cities are located in the Seoul metropolitan area.

Figure 5-4 Distribution of patents (2000-2009) and top nine cities (> 1,000 per year)



Source: Korea Intellectual Property Office (KIPO)

R&D actors who are particularly strong include high-ranking universities and research and technology organizations. Table 5-5 shows the density of Gyeonggi province's research institutes. In 2001, there were 1,750 research institutes; however, by 2009, the number of research institutes had risen to 4,957. It is a characteristic of the region's higher education infrastructure that most of the universities are generally research-oriented and teaching-oriented; as a result, they often lag behind in terms of technology transfer and business spinoff activities, such as technology transfer offices (TTO) and venture

incubators. Thus, there are only 49 venture incubators in the universities in the region (KISTEP, 2012).

Table 5-5 Research and technology organizations in Gyeonggi province (2001-2009) (numbers, %)

	2001	2002	2003	2004	2005	2006	2007	2008	2009
University	52 (14.57)	54 (13.88)	61 (15.33)	53 (15.27)	42 (18.67)	55 (18.71)	67 (18.55)	65 (17.29)	72 (18.41)
Public	37 (15.68)	33 (15.64)	42 (17.43)	40 (17.54)	17 (17.78)	41 (18.64)	43 (16.22)	47 (14.55)	56 (14.81)
Private	1,661 (24.68)	1,830 (26.32)	1,994 (27.77)	2,075 (27.89)	2,381 (28.27)	2,975 (28.68)	3,461 (29.39)	3,992 (30.14)	4,829 (30.70)
Total	1,750 (23.89)	1,917 (25.38)	2,097 (26.82)	2,169 (27.06)	2,477 (27.58)	3,071 (28.21)	3,571 (28.80)	4,104 (29.43)	4,957 (29.67)

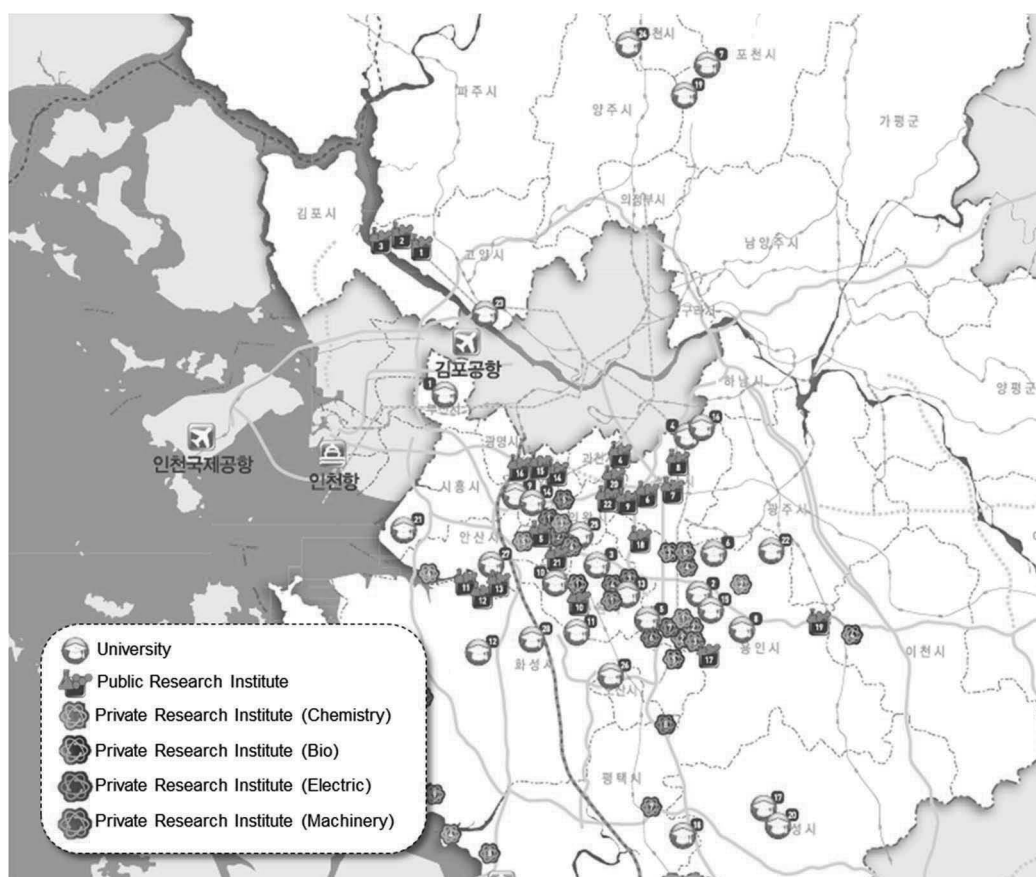
Note: ( ) refers to % of total institutes in South Korea.

Sources: Regional science and technology year book (2004, 2005, 2008, 2010)

Most key research and technology organizations are funded by the central government (e.g. Korea Electric Testing Institute, National Cancer Centre, Korea Electric Institute, Korea Railroad Research Institute). The provincial government also supports similar organizations, such as Gyeonggi Product Research Institute, Gyeonggi Research Institute, and so on. These knowledge infrastructures are located in the southern part of the region (Figure 5-5).

The region benefits from a favourable knowledge infrastructure, good access to the networks, and from the geographical proximity to the market agglomeration, in particular to the neighbouring regions of Seoul and Incheon and the country's international airport. This geographical advantage combined with the number of firms and the population concentration has made it the heart of South Korea's economy and an important region for trade in East Asia.

Figure 5-5 Universities and public and private research institutes in Gyeonggi province



Note: Private Research Institute (more than 200 researchers)

Source: GSTEP (2011a: 12-13)

## 5.2 Policies shaping regional development in Gyeonggi province

This section outlines the political context of regional policy in Gyeonggi province. This aggregate overview of industrial policy areas and instruments examines how working relationships span across levels of governments and contribute to the formation of policies and a strategically selective context.

As we reviewed in Chapter 4, the central government exerted a power over Gyeonggi's regional development in two ways. On the one hand, in the name of the balanced development policy, the Roh Moo-Hyun administration promoted several relocation policies in the 2000s. In Gyeonggi province, the Seoul metropolitan regulatory policy has

been the major obstacle to the urban development policy. It incorporates land use planning and other developmental issues, such as an infrastructure facility planning (transport, water, sewage, and so on). On the other hand, to date, aiming for national growth, the central government still holds the initiative to cultivate industrial clusters and foster high-tech industries for the respective regions. In this section, we look closely at the two different regional policies.

### **5.2.1 Urban development policy**

#### ***5.2.1.1 Containment of growth of the metropolitan area***

As mentioned earlier, the rhetoric of “balanced development” has been the cornerstone of national agenda since 2004 (Lee Yong-Sook, 2009: 357-358). The development of regional policy in South Korea, as examined in the previous chapter, shows that there have been radical discrete changes in the urban development policy: one under the Kim Dae-Jung administration and the other under the Roh Moo-Hyun administration. The significant changes in the key elements and ideological attributes of regionalist thinking can be seen before and after the two governmental changes.

In particular, the launch of the Roh Moo-Hyun administration in February 2004 marked the highest point from which a new approach, in stark contrast to the approach under the previous administrations, unfolded. The radical change in thinking under the Roh Moo-Hyun administration was heralded by the creation of the PCBND.

Under the auspices of the PCBND, a sizable state policy was put into action to achieve the stated goals of regional development, that is, to achieve the maximum benefit from the extant local administrative system rather than creating a new scale of regional entities (PCBND and MOCIE, 2004; PCBND and MOCT, 2005). On the one hand, all scales of existing political jurisdictions, whether local, metropolitan, or provincial, were adopted as a unit



outlet on which regional innovation systems operated, and on the other, various policies for balanced regional development were carried out.

Five specific policy areas, i.e., innovation policy, regional equity policy, industrial policy, spatial policy, and Seoul metropolitan management policy, constitute the core of the balanced regional development policy in this period (Cho Cheol-Joo, 2012: 247). These policy areas represented a new regional policy that the Roh Moo-Hyun administration had pursued based on a balanced model. Under this model, two types of policy measures were adopted: one was the proactive decentralization strategy to enhance a region's internal growth potential based on the idea of a regional innovation system, and the other was the proactive globalization strategy to boost national competitiveness.

Urban development policy is initially formed at the national level, and it then expands across the regional levels. Accordingly, the Ministry of Land, Infrastructure, and Transport (MOLIT) is responsible for preparing, approving, monitoring, and adjusting regional planning (Kim Heung Min and Han Sheng Sun, 2012: 152). The MOLIT defines how to survey and predict the future population and specifies what should be included in sectoral activities. Thus, the basic plan could easily turn into a comprehensive plan rather than a strategic plan. Even though the basic plan is supposed to be a long-term plan, it can occur that the long-term plan is changed to cater for the needs of regional development projects in specific areas. The central government formulates these plans and the provincial government has to follow them up.

#### **5.2.1.2 CRRPA and its relation to industrial development**

In 1982, Gyeonggi province received planning guidance through the ratification of the "Capital Region Readjustment Plan Act (CRRPA)". Since then, its goals and amendments have dictated infrastructure development and provisions for uneven development.

According to the provision of the CRRPA, “the First Metropolitan Area Management Plan (1984-1996)” was prepared in 1984. The plan was implemented together with other land use regulations at the same time. The basic tenet of the plan was to divide the Seoul metropolitan area into five zones<sup>55</sup> and to restrict the location of “population-inducing facilities” in each zone to varying degrees. For example, the construction of new large office buildings, colleges and universities, and large factories was in principle banned within the Density Abatement Area, which includes Seoul and its vicinity, while the restrictions were more relaxed in outlying areas (PCBND, 2003, 2006).

These five zones were consolidated into three because of a 1994 amendment to the CRRPA. The Second Capital Region Management Plan for 1997-2011, prepared according to the same Act, adopted a somewhat more flexible approach.

The current plan is the third of its kind (2006-2020). The Capital Area Development Plan takes precedence over other laws and regulations in place in the area involving land use plans and various development plans. In fact, it forms the basis of those laws and regulations. The Ministry of Land, Transport, and Maritime Affairs develops a draft and submits it to the Capital Area Development Plan Committee (chaired by the Prime Minister), which deliberates and finalizes it. The Capital Region Readjustment Planning Act contains regulations for the construction of universities, factories, public complexes, and other large buildings; regulations on the development of land for industrial and housing purposes; and location rules set out according to specific districts in the area (e.g. those which have measures in place to curb overcrowding, those with measures to manage growth, and nature reserves).

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<sup>55</sup> The five zones are Relocation Promotion Zone, Growth Management Zone, Development Promotion Zone, Environment Preservation Zone and Development Reservation Zone.

The current policies are summarized in Table 5-6 and Figure 5-6. The location of factories is subject to an annual quota system. In addition, factories are subject to another law, which regulates the construction, expansion, and relocation of factories depending on firm size and the type of industry. For instance, the new construction and expansion of existing factories owned by large enterprises is, in principle, prohibited in all three zones (i.e. the whole Seoul metropolitan area). However, exceptions are made for a list of industries that are deemed vital for the nation's economic growth. For example, the construction and expansion of manufacturing plants in the Growth management area has been allowed for several high-tech industries (e.g. LG-Philips semiconductor).

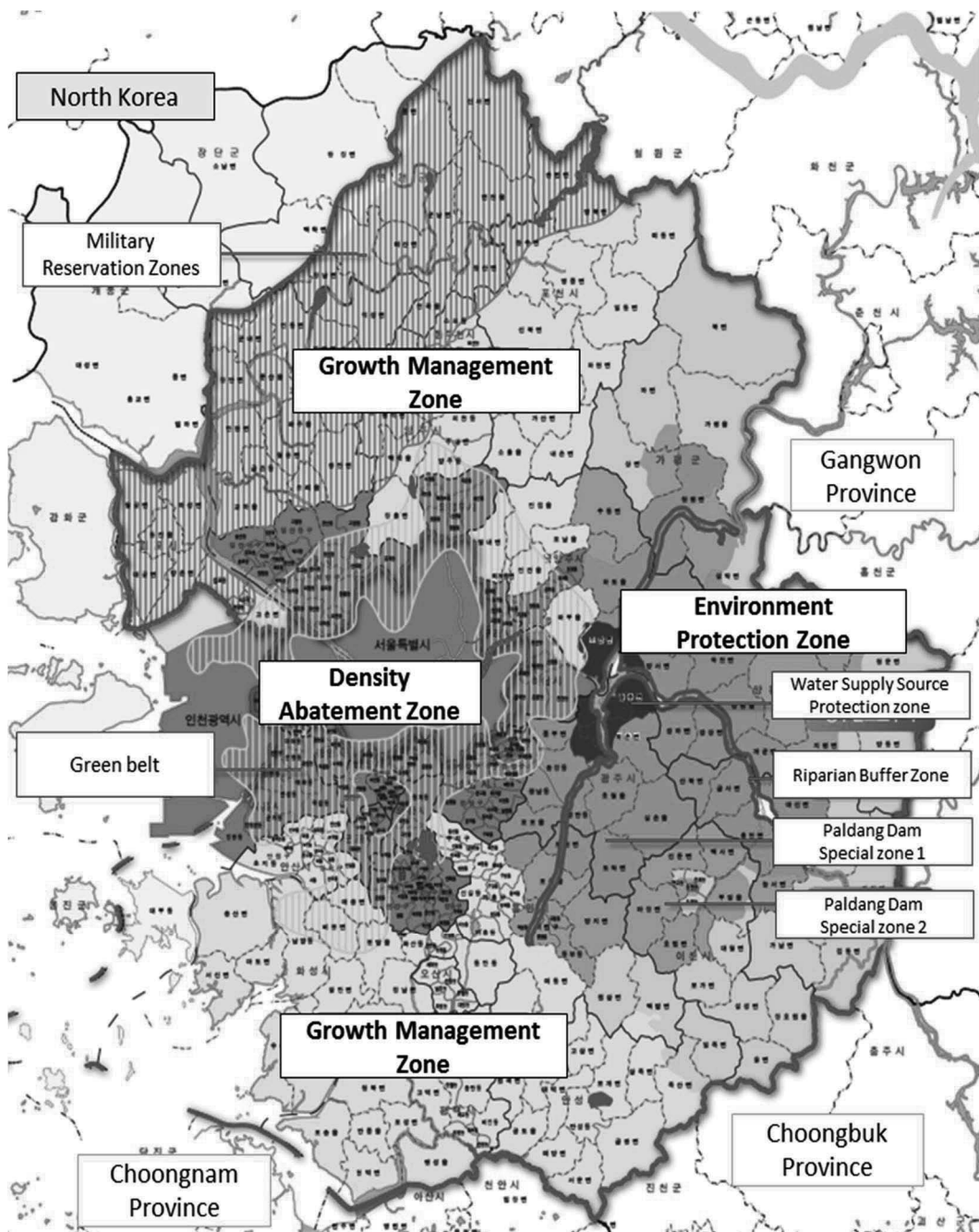
Table 5-6 Regulations of location in the Seoul metropolitan area

Zones	Density Abatement Zone	Growth Management Zone	Environment Protection Zone
Location	14 cities near Seoul	14 cities in north and South Gyeonggi	8 cities in East Gyeonggi
Large commercial building	Subject to congestion charge	Allowed	Prohibited
Colleges, universities and other higher education institutions	Prohibited in principle (exceptions: new vocational school, increase of student roll within regional quota, relocation from Seoul)	Prohibited in principle (exceptions: new vocational school, new university with less than 50 annual entrants, increase of student roll within regional quota, relocation from other parts of the Capital Region)	Prohibited in principle (exceptions: new vocational school, new university with less than 50 annual entrants, increase of student roll within regional quota, relocation from other parts of Environment Protection Area)
Factories	Subject to annual quota. Other zone-specific restrictions by Industrial Agglomeration and Factory Construction Law		
Corporate training facilities	Prohibited	Prohibited in principle (exceptions: expansion of existing building, relocation within the Capital Region, others approved by the committee)	Prohibited in principle (exceptions: expansion of existing building, other labour-related facility approved by the Minister)
Residential land development	Approval by the committee required for large project after population impact	Approval by the committee required for large project after population impact study	Small projects allowed (less than 30,000 m <sup>2</sup> : allowed, 30,000 to 60,000: approved by the committee)
Designation of Industrial zone	Prohibited (exceptions: cases which does not increase total current industrial area on the provincial level)	Allowed in accordance with the Capital Region Management Plan (such as relocation from Congestion Suppression Area)	Prohibited
Industrial land development	Approval by the committee required for large project after population impact study	Approval by the committee required for large project after population impact study	Small projects allowed (less than 30,000 m <sup>2</sup> : allowed, 30,000 to 60,000: approved by the committee)
Resort development	Approval by the committee required for large project after population impact study	Approval by the committee required for large project after population impact study	Small projects allowed (less than 30,000 m <sup>2</sup> : allowed, 30,000 to 60,000: approved by the committee)

Source: Gyeonggi provincial government (2012: 2)

Note: "Committee" in the table refers to the Capital Region Growth Management Committee headed by the Prime Minister.

Figure 5-6 Urban development regulations in the Seoul Metropolitan Area



Source: Gyeonggi provincial government (2012: 3)

The CRRPA met with mixed responses. On the one hand, the other regions interpreted such moves as compromising the traditional spatial policy stance, because they believed the increasing prosperity of the Seoul metropolitan area to be incompatible with the growth of other regions.

On the other hand, economists in the metropolitan area, including Gyeonggi province, claimed that the changes were only marginal, while the rationality of the policies remained unproven and unwarranted. For example, they challenged the rationale for the annual quota on the allowable total floor area of manufacturing plants set by government officials and distributed over localities in the region. Some Gyeonggi Provincial council members tonsured their hair as an expression of vigorous protest,<sup>56</sup> and opposition advertisements were made against the SABND in newspapers (see Figure 5-7). The capital region argued that excluding Seoul, Incheon, and Gyeonggi from the SABND was reverse discrimination against the core regions of the nation and that the non-capital region oriented policy would weaken national competitiveness.

Figure 5-7 Tonsure strike in Gyeonggi Provincial council (11 November, 2003)



Sources: ohmynews newspaper.

<sup>56</sup> In South Korea, 'tonsure' was derived from Buddhist culture in ancient India. In modern history, the tonsure is expressed as a means of strong resistance. Hunger strikes are another means of resistance. Both customs are a warning of the last struggle. During authoritarian administrations, students demonstrated against the military regime, some of them shaving their hair in protest. Related to regional politics, the former president Kim Dae-jung went on a hunger strike for 13 days to achieve local autonomy in October 1990. Recently, some of relatives of the victims of the Sewol Ferry disaster in 2014 have conducted a tonsure strike and a hunger strike for more than 40 days to draw attention to their demand for a full independent inquiry into the ferry disaster that claimed more than 300 lives.

Overall, it is fair to say that national policies towards Gyeonggi province have consistently aimed at controlling population growth and economic activities, though there has been a shift away from containment to management over the last decade or so.

## **5.2.2 Development and upgrade of the industry in Gyeonggi province**

### **5.2.2.1 Foundations of Gyeonggi Technopark**

One important structural factor is the long partnership that has developed through the regional hubs' so-called Technopark (Chung Sun-Yang, 1999; Hassink, 2001, 2002; Cooke, *et al.*, 2004). Since the 1990s, regional policy has assumed a role beyond the national economic policy with the upgrade of industrial districts with knowledge-based industries and new technology-based firms (NTBF). Innovation policies have become a major component of the industrial policy (Lee Won-Young, 2000: 281). The effort to strengthen the regional networks progressed with the 16 Technoparks, which played the role of coordinators at the provincial level. Industrial districts are mostly organized by evaluating this point of view, through which knowledge infrastructures are established (Park Sam Ock, 2007, 2010).

An attempt was made to foster Technoparks as an important means for regional technology innovation and economic development. Ever since, Technoparks have created a channel for economic expansion or a revival of economic growth as a whole, though they mainly focus on knowledge-based start-ups. The allocation of resources at the national level is the first step in industrial policy decision making (OECD, 2012: 103-104). In 1997, the Ministry of Commerce, Industry, and Energy (MOCIE, former MKE) selected 18 Technoparks for long-term financial support. Technoparks have been located in 16 different provinces and cities for several decades and have become representative of regional key players in a knowledge generation and diffusion subsystem. The MOCIE

supervises the Technoparks and allocates the necessary budgets, and they have become dominant players to promote industrial development.

They are fairly homogenous across the different settings across South Korea, and they are organized according to areas corresponding to the administrative regions. In 1998, as part of the scheme planned by the MOCIE, the Gyeonggi Technopark was established from the outset as a collaboration between Ansan city and the provincial governments. Gyeonggi Technopark also had strong relationship with Hanyang University and the public research institutes of central government.<sup>57</sup>

Figure 5-8 Gyeonggi Technopark



Source: author's own creation.

Ordinarily, we imagine a 'park' to be a collection of buildings. However, a Technopark is implemented within a single building (see Figure 5-8). As an organization, Gyeonggi Technopark employs a staff of 55 engineers, economists, and legal experts, as well as

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<sup>57</sup> Key public research institutes are Korea Institute of Industrial Technology, Korea Electrotechnology Research Institute, Korea Testing Laboratory, Korea Ocean Research and Development Institute and Rural Research Institute.



administrative and financial personnel. They offer advisory (technical, legal, financial), coordinating, administrative, and information support to local firms. Especially, their most significant role is providing facilities to venture firms.

The Technopark itself seems like the singular incubator. Gyeonggi Technopark operates open laboratories with 45 pieces of research equipment available for communal use among the start-ups inside the park or the neighbouring industrial districts (Banwol-Siwha industrial districts). This support allows firms to save money and time as well as enabling them to learn technical capability. Furthermore, Gyeonggi Technopark was from the outset actively involved in regional development from venture incubators to the commercialization and the marketing. Around 100 start-ups and SMEs have also been located in the building (see Table 5-7). Incubators are mostly specialized in the field of ICT and the bio industry, but also in mechatronics and for providing other services. Research services are provided for programmes that have commercial potential.

Table 5-7 Number of firms (SMEs and start-ups) in tenant in Gyeonggi Technopark

Industry	2003	2004	2005	2006	2007	2008	2009
Bio	13	15	17	18	20	19	20
ICT	12	24	27	23	26	26	35
Automobile	6	8	8	6	10	7	8
Robots	2	2	2	3	4	8	9
Others	25	27	26	21	22	18	21
Total	58	76	80	71	82	78	93

Source: Gyeonggi Technopark (2010: 23)

In addition to incubator services, Gyeonggi Technopark provides services for the evaluation of new business ideas, making the final business plan, and finding partners and additional sources of funding. Venture firms can also use office space at the Park and consulting services in areas of the incubator's specialization. Those planning to start any entrepreneurial activity can contact the incubator when developing their business idea. A so-called pre-incubator service can be applied to examine whether the business idea is

feasible and suited to the incubator. Acting as a business incubator, a Technopark may accept new start-up firms with an acceptable business plan. In addition, as part of the pre-incubator services, it is possible to get funding from the MKE, which is intended for financing research and development in Gyeonggi province. They offer preparation and implementation of research and product development programmes that can be financed both from national funds and from regional funds (see Table 5-8).

Table 5-8 The key roles of Gyeonggi Technopark

Services	Detail
<b>Open Labs</b>	45 pieces of equipment are available for the purpose of communal use among the firms in the Technopark or the neighbouring firms (e.g. Electronic/IT, fine chemistry, machinery, and bio)
<b>Financial support for marketing exploration</b>	Gyeonggi Technopark chooses five or fewer firms to set up creative marketing strategies for launching new products and exploring new markets. The supporting amount of money is up to around 8,000 dollars per company.
<b>Marketing consulting</b>	Gyeonggi Technopark offers supporting and consulting services for helping companies resolve their business difficulties.
<b>Support for developing Industrial design</b>	Gyeonggi Technopark supports up to 75% of all costs for producing new design for 10 or fewer chosen companies, and it hosts annual Ansan Design Contests
<b>Standardization</b>	National or international authentication support for ISO 9000, ISO14000, KS, CE, CSA, MINT, JET, UL, etc.: KTL (Korea Testing Laboratory), a national authentication agency has its branch office in Gyeonggi Technopark.
<b>PR</b>	Translation and interpretation services for marketing, PR, fairs, etc.
<b>Oversea marketing</b>	Helping companies explore overseas markets and regular consultations on administration, accounting, legal and patent related affairs, and public relation activities for tenant companies.

Source: Gyeonggi Technopark website (<http://www.gtp.or.kr/>).

Since Gyeonggi Technopark operates at a national level, we may ask whether the collaborations it fosters are underpinning the regional or the national environment. If seen as underpinning the national environment, this would mean that the national policy influences the regional cooperation more than the regional needs that are driving the Technopark's activities. If too broadly engaged with national policy, the result might be

industrial development policies that are homogenous across the country rather than being sufficiently focused on specific regional economic demands; in addition, the engagement with national priorities might result in Technopark becoming too dependent on financial support from the central government.

#### **5.2.2.2 Inter-governmental relations**

Since regional policy and industrial development has been mainly shaped at the national level, the provincial government has to deal with the plans and aspirations of other government agencies along with internal challenges in the relationships between the MKE and the MEST (OECD, 2012: 98).<sup>58</sup> The MKE works primarily with industrial development. It is the most influential, as it is charged with keeping the industry competitive; advancing the design, materials, automobiles, shipbuilding, machinery, steel, petrochemicals, and textile industries; and promoting the high-tech industries of semiconductors, information technology, and bio technology. In addition, the MEST is primarily responsible for higher education and is charged with formulating policies for research and development collaboration in universities.<sup>59</sup>

However, there is a perceived lack of confidence in the efficacy of inter-ministerial relationships. Due to unresolved institutional misconducts, poor intra-governmental coordination was frequently cited as a cause of the lack of progress (Kim Heewon, 2008; Park Chun-Oh, 2011). Criticisms relate to inefficient relationships between the industrial

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<sup>58</sup> As the National Assembly of South Korea passed the government reorganization bill on 22 March 2013, the Ministry of the Knowledge Economy (MKE) was renamed the “Ministry of Trade, Industry and Energy (MOTIE)” after taking over trade roles. The Ministry of Education, Science and Technology (MEST) being named the “Ministry of Science, ICT and Future Planning (MSIP)”. The ministry is in charge of promoting science and technology and telecommunication policies (*The Korea Times*, March 22, 2013). In this thesis, we use the terminology of that time, though the ministries have undergone numerous name changes.

<sup>59</sup> Though they are two largest players, other ministries with a science, technology, and innovation mandate have appointed their own advisory committees to help formulate policy.

public administration and the regions, which resulted in overlapping activities between the sectoral and the regional operational programmes, and the lack of communication between the MKE and MEST.

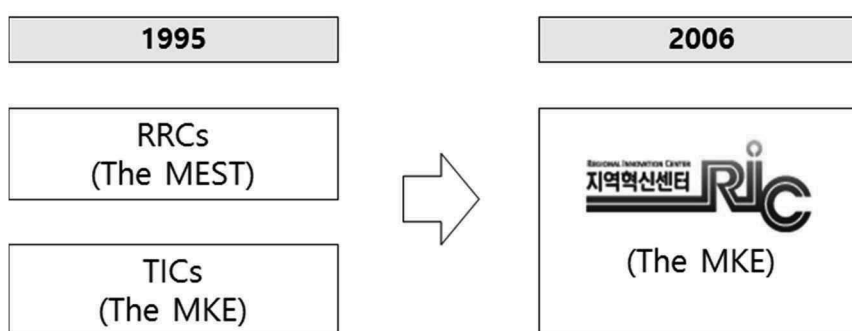
These problems can be illustrated in relation to intergovernmental relations on industrial policy. In order to reinforce the position of the Seoul metropolitan area as a high-tech innovation hub, the central government enacted 'the Promotion Law of Cooperative Research Activities' in 1994. The following year, the MEST began establishing 'Regional Research Centres (RRC)' to promote research in universities. The RRC program was not an explicit cluster policy tool, although the term 'cluster' was being used in South Korean academic and policy circles in the mid-1990s. The RRC program's main aim was to establish regional research networks among universities, firms, and local authorities, all of which had a common interest in motivating regionally specialized innovation (Lee Kong-Rae, 2003: 30). Three RRCs are located at three universities,<sup>60</sup> and the aim is to foster cooperation between universities and SMEs in the region. By offering technological consultants, co-workers, seminars, and training courses, and the use of scientific equipment for experiments, 37 RRCs have been established nationwide to increase the share of firm collaboration with universities in innovation projects.

At the same time, the MKE established the Technology Innovation Centres (TIC). Both centres had similar aims, that is, to establish a regional knowledge network among actors and to secure their power in the region. In 2006, both RRC and TIC were integrated into one centre and were renamed Regional Innovation Centres (RIC) to avoid duplication by the presidential office.

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<sup>60</sup> Hanyang University in Ansan, Myoungji University in Yongin and Suwon University in Suwon-city

Figure 5-9 Regional Innovation Centres



Source: author's own creation.

This was because there was no clear division of roles among the industrial policy-makers. However, in the absence of a clear-cut division of constitutional responsibilities, the central government has been able to use its power (i.e. its ability to set up initiatives in industrial development policy) to make its presence felt in all areas. Mechanisms established to manage inter-governmental relations have not been utilised systematically: the concordats on cooperation in intergovernmental relations with equivalent or overlapping policy responsibilities are bypassed.

### 5.3 Relationship between nation-state and region

In our interviews during fieldwork, the excellent spatial position of Gyeonggi province within the national system was one of its main characteristics as an RSI. The most important players of the innovation process in Gyeonggi province stem from national initiatives, namely, the MKE and the MEST, and its agencies, such as Technopark. Most of the regional development plans come from these two ministries.

The provincial government has participated only when the central government has acted as a co-financier, and, in such cases, the primary initiative in programme development has been with central government ministries. This means that industrial development policy initiatives still have a strong national character, so Gyeonggi's regional innovation support

systems still can be typified as *dirigiste* as discussed previously. Consequently, Gyeonggi province has not developed a distinctive innovation consciousness, detached from the centre, and conveyed by a regionally based and territorially rooted industries. Provincial governments have been recognised as a key element in the delivery of national economic development, and they have played a minor role in this regard in the context of the monitoring and evaluation processes of programmes.

Such plans are then implemented at the regional level. In the absence of an analysis of the specific features of demands for innovation at the regional level, those responsible for industrial policy tend to use a “generic” model. Specifically, questions were raised regarding the capacity of central government agencies, namely, Technopark, to undertake quality preparatory work and set in motion adequate mechanisms, before looking forward to fruitful policy implementation, improved coordination, and long-term monitoring.

We have encountered examples of the Local Autonomy Act already undertaking a relatively proactive regional role (see Chapter 4 and Appendix 5). Since 1995, the central government has granted regional policy makers certain powers: the Local Autonomy Act provides regions with discretionary power to take action to promote or improve the economy of their space.<sup>61</sup>

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<sup>61</sup> In Gyeonggi province, the provincial government has a governor and 3 vice-governors, policy advisors (who are experts in the field of welfare, the environment, and science and technology), 8 offices, 13 bureaus, 43 affiliate offices, 22 business offices, and 43,565 public workers (GRI, 2010: 23). On the one hand, provincial governments may, if necessary within the scope of affairs under their jurisdiction, establish autonomous services, such as fire service, medical service, research and development service and services for firms. Provincial governments also may build a branch agency for the convenience of remote residents and for promoting the development of specific industries. If it is necessary to perform independently part of the affairs concerned, provincial governments can establish agency (GRI, 2009: 97). On the other hand, the provincial council members may serve to restrain the activities of the provincial government. Provincial councils may cut the budget submitted by the provincial government (KRILA, 2012: 19). The provincial council also has authority to decide by resolution matters regarding the following: deliberation and confirmation of a budget, approval of settlement of accounts, establishment and disposal of public facilities,

Some witnesses, however, have argued that the distributed powers are not as generous as they seem. According to evidence from documents and interviews, industrial development in Gyeonggi province originates in either the specialisation of national policy instruments, which tend to favour and discourage industrial development across different regions, or the institutional compliance of regional plans and activities with national guidelines and legislation. The policy issues discussed in this chapter demonstrate how regional policy overlaps with urban planning, economic development, culture, and other policy areas.

GRI (2004, 2005a, 2005b, 2005c, 2006) noted that decision-making powers excluded regional autonomy. Provincial government has become so used to existing in a culture of central control that the ambition to take on powers and responsibilities from central government is sometimes limited and timid. However, the core reason for this lies in central not provincial government. Despite the rhetoric of devolution, *dirigisme* is deeply embedded in government practices, particularly in the Seoul metropolitan area.

When legislation determines such interrelationships, industrial development at the regional level emerges from hierarchical policy frameworks. In this case, in terms of its industrial policy context, industrial development governance incorporates an agenda of regional policy issues along with relationships through which national policy aspirations shape industrial development in Gyeonggi province. It is, however, the nature and volume of relationships in the industrial policies that indicate the centralised nature of development policy and planning in South Korea alongside the peculiar position of Gyeonggi province as the country's metropolitan area and most developed region.

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and other matters under its competence pursuant to Acts and subordinate status. The provincial council is officially responsible for making all ordinances and performing representative and oversight functions.

These frameworks are supposed to assess, in a systematic manner, whether regional development fits well within wider policy areas and national policy guidelines. Following the ratifications of national planning frameworks, industrial development in Gyeonggi province is incorporated within the Capital Region Readjustment Plan Act (CRRPA). It reflects the vision of the Metropolitan Area Management Plan for the metropolitan area and delivers the specialized guidelines of the Balanced National Development Plan (BNDP). Regional industrial promotion must comply with national principles and rely, to a certain extent, on funding schemes formed at the national level.

The effectiveness of such frameworks is a debateable issue. Regional industrial promotion is a trend that has recently emerged in Gyeonggi province according to evidence from documentary sources and interviews. Likewise, the Metropolitan Area Management Plan and the BNDP were operating independently for more than 30 years with debatable results.

#### **5.4 Concluding reflections**

This chapter has set out the policy context shaping industrial development in RSI. It has also investigated the centralised nature of regional development policy making and its effects on urban development and the development of industry at the regional level. It has identified the relevant policies and exemplified why, in the case of Gyeonggi province, the practices of industry-related policy networks are very much dependent on the nature of statutory institutions.

Applying the strategic relational perspective to the case of Gyeonggi province, there are two structural factors that influence the developments of industrial development policy, which may have led to the formation of the RSI. First, the important structural factor in



terms of the formation of RSI is the science and technology base in each region with the total R&D expenditure taking place in the region. Second, there have been recent political and institutional processes of devolution in South Korea that have influenced the obstacles to changes to the RSI in Gyeonggi province. Third, it is important to point out that the development of national initiatives has enhanced the regional industrial activities. local collaboration has been set up by the Technopark since the late 1990s, which constitutes an important knowledge generation and exploitation subsystem within the RSI.

As the Local Autonomy Act was restored and devolution policies implemented in the 1990s and 2000s, the formal institution of the region was transformed into the regionalized structure. However, the power of regional autonomy has increased little and has remained substantially circumscribed for the past two decades. Despite its constitutional autonomy, the provincial government has yet to achieve enough autonomy to obtain meaningful democratic governance. The distribution of authority and resources indicates the limited general competence for provincial government. The functional and financial bases of local government clearly show a vastly unequal power distribution between the state and the regions, and this hinders the enhancement of the democratic foundations of local government. Thus, in the highly centralized relation between the state and the regions, it is no wonder that the innovation system is largely determined by central governmental institutions and processes.

While in general, the practices associated with *dirigisme* have been dismantled rapidly and thoroughly, this is not true with regard to Gyeonggi province. On the contrary, central government's intervention has increased significantly in post-*dirigiste* period, as new central initiatives have been launched in the planning and implementation of regional innovation. Ironically, the central government has implemented important reform policies for improving productivity in a wide range of industries.

According to evidence from documentary sources and interviews, the complex policy context of industrial governance in Gyeonggi province faces challenges that transcend the boundaries of the central state apparatus. Such challenges range from the controversial operation of the public administration and problematic intra-governmental coordination, which in general circumscribe the delivery of industrial policy, to the ineffective relationships between the central government and regional autonomy, which attract criticism from regional policy makers.

Given the current structural factors of industrial development policy, further strategic actions are needed from the regional actors and their regional partners in order to seize a regional advantage in the knowledge economy.

The next chapter further explores the recent prospects, perceptions, and events shaping industrial development in Gyeonggi province. The first goal is to explore whether the initiative actors have been able to tackle challenges in regional policy and planning in light of the high expectations after 2006. The second goal is to verify whether substantial grounds have recently emerged to found and foster a strategic vision for industrial development.

## **6 The regional advent of the initiative actors and strategic actions**

As discussed in the previous chapter, there is evidence that the aim of central government was to design policies in which the role of the regional authority was only to assist in implementation; economic growth is possible even if there is no distinct role of provincial government. However, in 2006, the policy-makers in Gyeonggi province began to consider policy design and to create significant policies.

As illustrated in the conceptual scheme above, this chapter analyses the so-called “agential factors”, defined here as initiating actors’ perceived roles and motivation in relation to the contemporary discursive context of industrial policy. One of the agential factors this chapter seeks to delineate is the perception of the initiating actors who play a role in establishing and implementing regional policy. Therefore, this chapter firstly highlights the perceptions of the current government policies that are shaping industrial development, the practices of the regional agencies, and the potential opportunities as perceived by the actors in this wider structure. The main sections of this chapter examine initiative actors, as they span across policy areas, through illustrative examples from the policy areas of industrial development planning.

This chapter strongly relies on evidence from policy reports (GRI, 2006, 2007a, 2007b, 2008a, 2008b, 2008c, 2008d; GSTC, 2009a, 2009b; GSTEP, 2010a, 2010b, 2010c, 2010d, 2011a, 2011b, 2011c) and interviews with individuals within the GSTEP. The GSTEP is a new regional agency to support industrial development in Gyeonggi province. Interviews were utilised as a means of illustrating how the actors involved industrial development perceive policies and the ways in which they respond and potentially act to reshape those policies.

## **6.1 The influence of the political context**

The political factor is relevant in regional policies where there is a devolved form of government. In devolution, the political party that wins the seat in the governor's constituency is allowed to form a provincial government. Every political leader has their own agenda, and this will contain the vision and mission of the party. After the election, this is the document that will guide the party in formulating the various policies of the government. However, the ruling party can get a law passed only if the new bill gets a majority vote in the legislature.

The governor Kim Moon-Soo (2006-2014) pushed forward a fully-fledged reform of the industrial policy. He was seeking re-election to the post of provincial governor, and thus he required some striking policy for his manifesto. In the local elections of 2 June 2010, he was re-elected as governor of Gyeonggi province (*The Korea Times*, 2 June, 2010).

As governor, he enjoyed a strong support base from businesses; in addition, he wanted to be popular and his short-term agenda was to win votes. He therefore pushed for business support policies to build infrastructures (e.g. new underground railway network, Gwanggyo and Pangyo Techno Valleys). The implementation of such programmes obviously affected the governor's chance of being re-elected. In addition, the GSTEP had been established in May 2010 before the local election. Therefore, with his re-election, his policies on industrial development gained further momentum.

Prior to the governor's intervention, the provincial government had been struggling to get departments to agree on policy as part of the national development plan. Now, the industrial policy was seen as a political "race", which led the provincial government to appoint GSTEP authority at the regional level. The GSTEP was viewed as a dynamic and talented policy maker, and they wanted to make a rapid impact on what they expected would be a relatively short tenure.

There was widespread recognition amongst interviewees in this research that the political situation and the agenda of the governor decide how industrial policy making plays out in the region:

We are bound by the electoral cycle in the nation and region, and the influences at play here are things like the strength of the majority, the confidence of our political masters, whether that can drive things through, what they are balancing up, and how much money they have got. So, there are a lot of externalities and dependencies. (Interviewee 33)

In particular, the position of the responsible governor was seen as crucial:

Policy making doesn't happen separate from who's in charge, who's arriving, or how powerful they are. It is all dependent, so our policy is going to be stronger when we have got strong leaders who know where we are going, what we want to achieve. (Interviewee 5)

The strength of the governor matters because policies are produced through competition between the government and the council. Rather than being a contested process, "policy formulation and implementation are inevitably the result of interactions among a plurality of separate actors with separate interests and goals" (Scharpf, 1978: 346). As one interview put it:

It is not simply a matter of policy making; it is a matter of getting policies agreed within government, and then implemented. And the extent to which a governor is able to do that will depend to a large part on his standing within his own political party and within the council. (Interviewee 31)

Therefore, politics is only one component of policy making. As an interviewee in GRI said, "I am a policy maker based on evidence, but I have got to accept that policy objectives will be partly shaped by what works in the evidence in practice, but also by the governor's nous" (Interviewee 20). Policy is viewed, not through a single lens, but through a set of competing values, motivations, and perspectives.

The interviews revealed the significant political factor behind the strategic action. The rapid establishment of the GSTEP and strategic policies was the result of strong support from the governor. The strategic action looked very promising, and they were confident that the new strategic policies would improve the efficiency of the regional support and solve the problems that firms faced. However, they could not initiate the development of the idea immediately at that time, because they had just started to work out a strategy and had not secured appropriate funds for the new idea. In particular, a major step was for the GSTEP to persuade the provincial council.

## **6.2 Grievances over national policy**

Regional policy makers seek both sufficient formal power and more general autonomy to pursue a leading regional economic leadership role. However, existing policies for shaping industrial development do not provide these conditions, and thus, regional actors' actions are constrained. An example of the discourse is that actors in the provincial government say the BNDP discriminates against the metropolitan area, while central government says that scrapping the regulations would escalate capital concentration and hinder provincial development. In the context of Gyeonggi, officers complained that the restrictions central government-imposed on their investments constituted a form of "reverse discrimination"<sup>62</sup>.

A further example of this discourse is the statement of Governor Kim Moon-Soo (2006-2014), who addressed the effects of central government control over regional regulations in Gyeonggi province:

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<sup>62</sup> A term "reverse discrimination", in this context, means the regulation to discriminate against economic activities in Gyeonggi province. During fieldwork, the term "reverse discrimination" appeared both in documents and interviews. There was profound distrust of central government's policies.

Not only Gyeonggi province, but South Korea as a whole has seen competitiveness declining due to the regulations. (...) Due to the restrictions, investments worth 51.34 trillion KRW by 53 companies have been put on hold, costing opportunities for creating 37,582 jobs. In the past year, I have aggressively made efforts to highlight how serious restrictions on the Seoul metropolitan area undermine corporate activities. (...) In this regard, we had 73 meetings with lawmakers and experts, submitted suggestions to the presidential office and agencies of the central government on 37 occasions, held 21 public hearings, issued publications on restrictions on 7 occasions, and provided support in legislating and amending laws and regulations on restrictions on 9 occasions. Given the rapidly changing circumstances facing South Korea, which is sandwiched between China and Japan, and the conclusion of the Korea-U.S. Free Trade Agreement, we should reform restrictions to turn around our nation's competitive edge by departing from the obsolete perception surrounding restrictions on the Seoul metropolitan area. (...) The way to ensure a balanced national development is to give differentiated support, varying according to regions, rather than making direct investments into areas with a smaller competitive edge instead of better places with good investment efficiency. (*Illyo Sisa*, January 6, 2009)

This viewpoint indicates the idea that the CRRPA may weaken the economic activities of Gyeonggi province. As reviewed in Chapters 4 and 5, the aims of the CRRPA are to reduce the economic gaps between Gyeonggi province and the other regions and to foster the creation of self-sufficient regions to create a balanced country where all regions prosper. The concentration of economic activity in Gyeonggi province had led to a widening gap with other regions, and subsequently, inefficiency (e.g. land prices or pressures on existing infrastructures were funded by the centre rather than by the province), making more pressing the need for a Metropolitan Area Regulation. This provides some justification for central government's efforts to improve constraints, notwithstanding the argument offered by Governor Kim Moon-Soo, who chose to ignore those who would lose from such a development (i.e. businesses having to pay higher costs due to competition for land or those having to bear the costs of infrastructure development, which might include taxpayers in other regions of South Korea).

Thus, it was necessary to restrict the construction and expansion of manufacturing factories in Gyeonggi province for the purpose of seeking balanced development between the regions in South Korea. Central government controlled the economic expansion of the

metropolitan area and, instead, relocated facilities to non-metropolitan areas. This involved creating cities; moving national public offices and public firms out of the Seoul, Incheon, and Gyeonggi; and providing incentives (particularly, tax reduction<sup>63</sup>) to firms who moved to the other areas.

Governor Kim Moon-Soo belonged to the GNP, which formed the Lee Myung-Bak administration (2008-2012), and ended some of the BNDP put in place by the Roh Moo-hyun administration. The centrepiece of the Roh Moo-hyun administration's plan was the relocation of the Korean capital from Seoul to South Chungcheong Province. Roh later scaled the plan down to the creation of 'an administrative city (called Sae-jong-si)'<sup>64</sup> when the capital move ran into political and constitutional challenges. As mayor of Seoul (2002-2006), Lee strongly opposed the proposed capital move. His policy was based on the concept of national competitiveness. To strengthen national competitiveness, the Lee Myung-bak administration underwent reforms on a government-wide scale in order to change drastically the Seoul Metropolitan Area Regulation. The move came in response to strong calls from Gyeonggi province for deregulation.<sup>65</sup> In December 2008, the Lee Myung-bak administration amended the related laws and allowed the establishment and

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<sup>63</sup> In the 2nd BNDP, the central government announced that it sought to classify regions into four categories (underdeveloped, stagnant, developing and developed) and impose varying levels of corporate taxes and health insurance fees depending on their status. For example, underdeveloped regions get a 70% discount in corporate taxes, stagnant areas 50%, and developing areas 30%. Developed regions have to pay the full tax. If a large company based in a developed area moves to an underdeveloped one, it will get a 70% discount in corporate income tax for the first 10 years and a 35% cut over the next five years (*Digial Chosun ilbo*, October 10, 2007).

<sup>64</sup> The government plans to spend 8.5 trillion KRW (9.3 billion USD) on the project, to fulfil one of the campaign pledges of the Roh Moo-hyun Administration in 2002. The site is in the Yeongi-Gongju area of South Chungcheong Province. The plan is to accommodate 49 governmental agencies by 2014 along with some 500,000 residents. In March 2005, parties in the National Assembly agreed on a revised plan, which was scaled down from the original scheme. Seoul Mayor Gyeonggi Governor did not show up to the opening ceremony, citing personal scheduling conflicts. All other governors and mayors from 14 major administrative districts attended the event along with several ministers.

<sup>65</sup> President Lee Myung-bak and Governor Kim Moon-soo belong to the same conservative political party, namely, the GNP.



expansion of factories, regardless of scale and industry, in the industrial complexes in overpopulation control areas and growth-management control areas.

Table 6-1 Government formation since devolution (1995-2014)<sup>66</sup>

Central government			Year	Gyeonggi provincial government			
Administration	Party	Political ideologies		Political ideologies	Governor	Party	
Kim Yong-Sam administration (1993. 2. 25 - 1998. 2. 24)	Democratic Liberal Party	Conservative	1995	Conservative	Lee In-Jae (1995. 7. 1 ~ 1997. 9.18)	Democratic Liberal Party	
	New Korea Party		1996			New Korea Party	
			1997				
Kim Dae-Jung administration (1998. 2. 25 - 2003. 2. 24)	National Congress for New Politics	Liberal	1998	Liberal	Lim Chang-Yeol (1998. 7. 1 ~ 2002. 6.29)	National Congress for New Politics	
	New Millennium Democratic Party		1999			New Millennium Democratic Party	
			2000				
							2001
Roh Moo-Hyun administration (2003. 2. 25 - 2008.2. 24)	Open Uri Party		2003	Conservative	Sohn Hak-Gyu (2002. 7. 1 ~ 2006. 6.30)	Grand National Party	
			2004				
			2005				
			2006				
			2007				
Lee Myung-Bak administration (2008. 2. 25 - 2013. 2.24)	Grand National Party (GNP)	2008	Conservative		Kim Moon-Soo (2006. 7. 1 ~ 2014. 6.30)	Grand National Party (GNP)	
		2009					
		2010					
		2011					
		2012					
Park Geun-Hye administration (2013. 2. 24 - present)	Saenuri Party	2013	2014	Nam Gyeong-Pil (2014-7.1 ~ present)	Saenuri Party		

Source: own creation.

<sup>66</sup> There are many changes of party name due to frequent party splits and merges right before the elections. For example, the GNP changed its name from Grand National Party to Saenuri (New Frontier) Party in the 2012 election.

In the same vein, the Gyeonggi Research Institute (GRI) (2007a, 2007b, 2008a) criticized how the CRRPA implemented “reverse discrimination” against Gyeonggi province, because limitations were placed on firms wanting to build new production plants and expand existing ones in Seoul and Gyeonggi province. They argued that core industries, such as ICT and the automobile industry, had been hampered by the BNDP.

The documents of the GRI have expressed grievances that the metropolitan regulation remains insufficiently accountable to actors in the regional economy and that regional actors are unable to assimilate the industrial policies fully into their strategic vision for the locality.<sup>67</sup> Although they express support for the powers they have in principle, they argue that, in practice, they are so constrained by central government interference—whether through performance monitoring or departmental directives—that they are unable actually to deploy these powers fully.

The national territory development plan still exists. However, since the 2000 the influence of the plans has been weakened, and remains only as blueprints. (Interviewee 2)

For instance, the Roh Moo-Hyun administration agreed not to approve the investment plan of Hynix Semiconductor (the largest memory chipmaker) to expand its chip production lines in the Icheon area for fear of a possible industrial concentration and environmental pollution. The proposed expansion of the Hynix plant in Icheon caused a great stir, as the plant is located within the “nature preservation zone”. Samsung Electronics also has been refining plans to expand its existing chip plants in Giheung and Hwaseong, both in the south of Gyeonggi province, but the firm has reported that the plans are unlikely to move forward due to the CRRPA restrictions on plant expansion in

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<sup>67</sup> GRI is the policy research organization established in March 1995 with investment by the provincial government. As a policy think-tank, GRI is engaged in socio economic issues mainly by way of developing regional policy. There are approximately 170 employees, half of whom have a PhD degree in economics, public administration, geography and environment.

the capital region. Another example is Fairchild Korea, a semi-conductor firm based in Bucheon, Gyeonggi province; the firm is a profitable manufacturer of transistors and generates 600 billion KRW in sales per year. With steady growth, the firm has attempted to build more manufacturing facilities since 2001. However, it has been unable to obtain approval for these facilities due to its location within the metropolitan area. Eventually, the firm turned to China in 2003 (*Digital Chosun Ilbo*, August 31, 2004).

GRI argued that the current regional disparity in South Korea is not so serious as to call for equalization across the regions and that, therefore, policy focus on “regional equity” should be reconsidered. In agreement with Governor Kim’s statement, they also argued that balanced development is not compatible with growth or national competitiveness.<sup>68</sup>

An interviewee from GRI also commented, “We have the powers to do really quite a lot if we want to. The issue is that we do not have the entire freedom to spend our money the way we might want to” (Interviewee 19). Another interviewee at GRI, observed that “our problem is not so much about the powers that we have, but the fact that we have been given the priority by the central government, and yet we do not seem to be trusted to run our affairs” (Interviewee 41). He concluded that “the balance of power is still skewed in favour of central government and needs to be addressed to give provincial government greater ability to shape their policies to meet local firms’ needs. Provincial governments should be independent of central government and have their own source of revenue and financial freedoms, subject to accountability to the local community”.

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<sup>68</sup> One interviewee attempted to identify the reasons for central government policies: “Academically, these policies are based on the new economic geography. The new economic geographers in South Korea suggest that balanced regional development is a means of relocating the resources of the core area to peripheral areas, but it is a policy objective that is not compatible with economic growth” (Interviewee 15).

Table 6-2 summary of the controversy regarding the CRRPA in Gyeonggi province

	Gyeonggi provincial government	Central government
Key opinion	<i>Deregulation</i> : the regions compete with one another in globalization. Through advancement and concentration, the metropolitan area should increase its competitiveness.	<i>Balanced development</i> : Excess concentration eventually lowers competitiveness. Balanced development is the way to raise national competitiveness.
Metropolitan Area regulation	Stifling regulation reduces the overall development standard for the country.	The regions are still in dire need of assistance. The metropolitan area concentration is still too localized. Reviving the other regions will benefit the country as a whole.
Deregulation	Putting provincial development before the deregulation of the capital region has two problems: uncertain feasibility and the fact that it is nothing more than a belated prescription to shore up national competitiveness.	Deregulation increases population concentration and wealth in Seoul, and provinces will face a survival crisis.

Source: own creation.

Furthermore, the CRRPA classified both the northern and southern areas of Gyeonggi province into either developing or developed regions, even though these are vastly different in terms of their economic levels. Yonchon (the northern area in Gyeonggi) is an underdeveloped region (because the area borders North Korea) with a population of just 46,000 and containing only 92 businesses with 5 or more employees and employing no more than 1,442 people. However, the central government has classified that area into the same group of developing regions that includes Busan, Korea's second-largest city, and the southern-east industrial towns of Ulsan and Daejeon. Yonchon area has been facing difficulties in developing, as 98% of its total area has already been barred from development because it is reserved for military facilities. (*Digital Chosun Ilbo*, September 10, 2013). Not only Yonchon, but Paju, Gimpo, Yangju, Pochon and other areas in northern Gyeonggi province have between 30% to 90% of their territories restricted from development because they house military installations. Eastern Gyeonggi province, including Gwangju, Namyangju, Yangpyoung, Yeosu, and Icheon also face restrictions in constructing factories since they surround the upper tributary of the Han River, a source of water for Seoul. In addition, the national development policy against Gyeonggi province

has made firms limit their investments, which has further led to the reverse effect of spreading economic depression to the regions.

Figure 6-1 Cartoon on local newspaper



Note: This editorial cartoon is from a local newspaper (i.e. Joongboo ilbo) in Gyeonggi province  
Source: Joongboo ilbo, January 18, 2010.

In summary, there has been substantial controversy over whether to tighten or ease regulations in Gyeonggi province. In this regard, conflict has arisen between actors in Gyeonggi provincial government, business communities, and local media, all of which are seeking greater local autonomy, and the central government, which wishes to limit and direct this autonomy to national purposes. In other words, Gyeonggi province calls for deregulation to enhance its regional competitiveness, but the central government keeps to a balanced development plan for the entire country. Local media are outspoken about the negative effect on Gyeonggi province of the Seoul metropolitan area's regulations, with Figure 6-1 capturing this conflict in a single, powerful image.

### **6.3 Why do we not have a better industrial policy than “best practice”?**

A possible consequence of maintaining central control is that policy makers in the regions are unable to incorporate fully industrial policies into their strategic vision for their localities. For example, relegating provincial governments to an implementation role may prevent these governments from fully developing appropriate local industrial development policies. Most industrial policy decision making has been guided and structured, to a large extent, by competition initiated by the MKE (Doh Soogwan and Kim Byungkyu, 2014: 4). Such top-down initiatives were intended to promote regional development through the establishment of Technoparks. Technoparks are meant to inform local firms about national aid schemes and about management, sales, and purchase issues; to provide technological advice and test equipment; and to refer firms to other research agencies.

In the implementation of Technopark developments and more generally, policy makers of provincial governments are tasked by central government with explicitly promoting “best practice” in policy (GRI, 2005a: 23). With the help of case studies of successful policies, provincial governments are encouraged to seek competitive advantage through the knowledge infrastructure, such as building high technology clusters (i.e. Gwanggyo Technovalley, Pangyo Technovalley, Daejin Technopark), business incubators (i.e. the GSBC<sup>69</sup> and Gyeonggi Bio-centre), and technology transfer centres (i.e. the GRRC<sup>70</sup> and the

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<sup>69</sup> The Gyeonggi Small and Medium Business Centre (GSBC) is an agency to promote the competitiveness of regional firms. It was established in 1997 as the Gyeonggi Small and Medium Business Promotion Foundation and renamed GSBC in 1999. The most important role of GSBC is to find buyers for SMEs’ products – how to find and have consultations with potential buyers who would buy their goods. GSBC operates three kinds of programme to help SMEs do this: Export Consultations with Invited Potential Buyers; Overseas Market Development; and advice to help them participate in overseas business fair. For these programmes, GSBC is operating global branches in Kuala Lumpur, Mumbai, Moscow, and Sao Paulo.

<sup>70</sup> GRRC (Gyeonggi Regional Research Centres) are a regional version of RRC in 15 selected universities that have a graduate school and researchers in the field of science and technology. As the provincial government has the largest budget of all regions in Korea, it has been able to establish more RRC. It is a regional agency for the cooperation of firms and

Nano Fab centre<sup>71</sup>). In addition, provincial governments are encouraged to seek investment from foreign research institutes, who are lured by tax incentives (e.g. Institute Pasteur Korea<sup>72</sup>).

Particularly, the Gyeonggi government designated two high technology-based clusters to encourage the formation of trans-sectoral platforms, but there was little interest for this specific kind of policy intervention from the relevant economic actors (GRI, 2014: 7-8).

‘Gwanggyo Techno Valley’ is a public research-based cluster, which was initiated by the local government. Gyeonggi province has created its own research and development facilities. Currently, the Advanced Institutes of Convergence Technology<sup>73</sup>, the Graduate School of Convergence Science and Technology, Gyeonggi R&BD Centre, the Nano Fab Centre, Gyeonggi GSBC, the GSTEP, and Gyeonggi Bio Centre, as well as about 200 start-up firms, research institutes, and related organizations, have moved to Gwanggyo Techno Valley. Thus, there are 3,864 full-time employees working there. In addition, near Gwanggyo Techno Valley, there are densely populated research and enterprise institutes,

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universities that might activate the research and education for the promotion of regional industry, and the research and development of original technology and applied technology supported by the central role of university research institutes that have possess a graduate school of science and engineering.

<sup>71</sup> The Nano Fab Centre was established in 2006 to encourage and support nanotechnology research activities in the academic and research institutes and in industry as a public infrastructure for nanofabrication service.

<sup>72</sup> The Institute Pasteur Korea (IP Korea), which is part of the Institute Pasteur network, is established in Pangyo Techno-valley. It aims to improve the reliability of drug research through cellular models, high content screening, and medicinal chemistry. IP Korea was inaugurated in 2004 as a collaboration between the IP Paris, KIST (Korea institute of Science and Technology) and central government. Thus, IP Korea is funded via basic finance of 100 million Euros over 10 years granted by the central government and the Gyeonggi provincial government. Until 2009, IP Korea was located in a small facility on the campus of KIST, and it then moved into Pangyo Techno-Valley.

<sup>73</sup> The Advanced Institutes of Convergence Technology were constructed by Seoul National University and Gyeonggi provincial government. Construction finished in March 2008. The Institutes aim to pursue collaborative research in the application of the high technologies in IT, BT, and NT, with the objective of commercialization. Currently, there are six institutes (i.e. Nano, Bio, IT, Green Smart Systems, Transdisciplinary Studies, and Living Together) and areas of research remain flexible in order to best meet society's demands in cutting edge technology.

such as Ajou University, Kyunghee University, and Sungkyunkwan University. The major research areas are IT, BT, NT, and convergence science and technology.

The provincial government also built an IT business-based cluster in Sunnam city after 2004. The purpose was to achieve education/R+D outcomes through synergies with domestic related companies and research institutes. 'Pangyo Techno Valley' has the advantages of lower maintenance costs due to the cheaper land price than Seoul, as well as support from the provincial government and convenient local and intercity transport. Recently, a number of software firms (e.g. game, software) elected to move to Pangyo Techno Valley, including NC soft, NHN, Neowiz, Nexon, JC entertainment, Com2us, YNK Korea, and Nowcom.<sup>74</sup>

These kinds of activities have led to the imitation of a limited number of alleged success stories of other regions (i.e. Silicon Valley or European cases) and national policies (i.e. industrial district development) (Interviewee 40). The provincial government's marketing of them points to the vision many areas had for turning themselves into the next Silicon Valley. This was particularly true for large regions (high regional GDP and high fiscal independent regions, such as Seoul and Gyeonggi province) that have the scale, resources, and sophistication to implement these policies.

However, after achieving only limited performance, these policies are now seen as a way to maintain existing knowledge infrastructures instead of trying to develop further activities (GSTC, 2009b: 20; GRI, 2014: 14). Such policies have sparked controversy over their effects and appropriateness in practice. The quotation below is from just one of many interviews where this was reported. This consequently hints at a lack of "strategic"

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<sup>74</sup> These software businesses were located in Tehran Valley in Gangnam, Seoul. It was such a cradle for game developer's that there was even a rumour that small developers should move to there to obtain better investment. However, a phenomenon called "off the Gangnam" arose from the middle of 2000, and the companies started to move to other places such as Pangyo (Interviewee 3).



policies, an issue that is clearly at the heart of the development problem in Gyeonggi province. Interviewees said that the comparative lack of an overall strategy was a major problem that regional economies faced. Several interviewees supported this view, as follows:

Large firms are already competing in globalized markets. This is because competitiveness has long become an essential factor in creating profits in the globalized markets. Nevertheless, we can see a substantial decrease in the productivity growth rate of SMEs recently. Especially, since 2000, the role of innovation as a growth factor is decreasing for SMEs compared to large firms. It is necessary to make specific efforts to complement the SMEs through better policies and systems to convert them into a competitive sector. It is beneficial to pursue policies to both improve the competitiveness of parts- and component-producing SMEs without harming the competitiveness of big companies facing global competition. By doing so, it will draw a virtual economic circle and improve the competitiveness of both big and small players. (Interviewee 10)

Historically, due to the presence of major players in the domestic market, Korean small businesses have become reliant on a limited number of primarily domestic customers. All these efforts by firms have raised the price competitiveness against Japanese firms in the global market. By 2000, Samsung, LG, and Hyundai had passed Sony and Suzuki, and over the past five or six years, have become competitors. Moreover, many foreign firms are now coming to Gyeonggi province, wanting to collaborate with *Chaebols* with the aim of cooperating in both home markets and in third country markets. However, local SMEs are still far less competitive than SMEs in Germany, Japan, and other industrialized countries. (Interviewee 8)

Although 90% of all firms in Gyeonggi Province are SMEs, Gyeonggi province did not have its own programmes, where the provincial government would invest our own money in something. Existing programmes do not reach the firms. With regard to support, the regional authority has no opportunity to give distinct support; yet that is the responsibility of the region. And we need technological support and general support, about programmes and so on, which are developed by the provincial government and central government as well. (Interviewee 7)

Reproduce the success of others by copying a supposedly successful programme or project one-to-one without much adaptation. This may work in some instances, but in the vast majority of cases, it is likely to lead to a waste of public funding. The region's objectives, challenges, systemic constraints, resources, and industrial structure need to be considered carefully. If policy measures and initiatives are not tailored to the particularities of each region, they are likely to fail to achieve their aim. The blind copy pasting of initiatives does not correspond to a region's development level and specific profiles. (Interviewee 32)

Thus, in trying to copy a regional test bench, provincial governments ignore the question of whether they can offer similar favourable preconditions. Such perceptions created a

motivation for policy makers in GRI to consider strategic actions. To respond to the challenges about the experience of regional efforts, the policy makers of GRI have constructed an elaborate policy of industrial development aid and assistance since 2006.

Policies are rather small-scale and short-term and can lead to duplication and to a lack of vision or missing the “big picture”. A new competitive and demanding environment is the essential challenge for Gyeonggi province, yet provincial governments’ roles as facilitators and arbiters in the regional system are increasing in importance. Gyeonggi province still has unexplored potential for surviving in the rivalry with its challengers. Territorial rooting is one factor in this, since close proximity brings together the representatives and interests of members of different organizations. Provincial governments have to be places of technical, productive, and organizational integration, not mere replicas of large firms’ industrial strategies (GRI, 2007b: 23-24).

Old industrial policies do not respond appropriately to current development needs in the regions, not least because they tend not to discriminate territorially and are poorly adapted to current business needs. Thus, their cost effectiveness is criticised. In general, they tend to be short-term and to work better with winners than with losers, and often they are more social conversion policies than real economic development growth policies (GRI, 2008a: 35).

The initial actions in promoting policies involved holding seminars and distributing information through meetings. The questions required many rounds of discussions with experts, the provincial council, the provincial government, and the decision-makers. Finally, the provincial government and the provincial council accepted the proposal made by GRI in 2006. The next section discusses the content of this proposal

#### **6.4 The emergence of the GSTEP and rescaling regional interest**

The longer-term plan was first endorsed by the report in 2006. Then, in November 2006, GRI published its initial proposal to reform industrial policy. This included refining plans for producing a regional strategy so that the provincial government would have responsibility for industrial development, including planning, implementation, and

monitoring; and creating a unitary agency across Gyeonggi province to carry out an industry platform of the region:

Provincial government would not expect to gain 'free food' though the network. Regional strategies require considerable investments in the process in terms of financial resources. The credibility of the regional strategy-maker is extremely important, and attention should be paid to gaining such credibility. (GRI, 2006: 25)

Gyeonggi province should have a responsible agency to promote technology development in the region within an accountable and strategic regional framework. The new agency should be responsible to the provincial government, but operationally separate, acting as their executive arm in the area of industrial technology development. (GRI, 2006: 57)

After several debates and discussions, the provincial government decided to invest in setting up an industrial technology policy as a driver of economic growth and development of the region. The governor and the council decided to accept the proposal. This included the creation of an industrial technology development policy agency, namely, the Gyeonggi Science and Technology Centre (GSTC).

In fact, the GSTC had already been established in November 2006 as a department of industry and economy in GRI. However, the GSTC formally broke from its affiliation with GRI two years later. In May 2008, it became independent from GRI and moved its headquarters into Gyeonggi Techno Valley. Currently, the GSTC is chaired by Lee Won-Young, the former Secretary of the President's Office for Science and Technology Policy.<sup>75</sup>

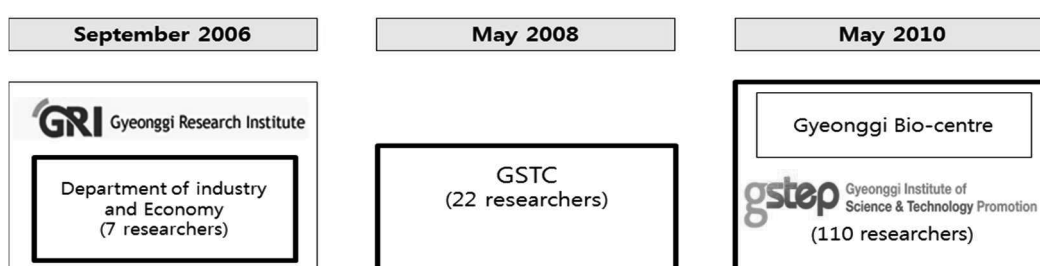
In May 2010, the provincial government restructured its industrial development investment scheme across the board, and the GSTC accordingly overhauled its technology development guidelines in order to play a more extensive role. In this radical move, the

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<sup>75</sup> He has been a member of the Korea Development Institute (KDI). He also worked as a senior researcher in Science and Technopogy Policy Institute (STEPI). He was appointed by President Kim Dae-Jung as a Secretary of the President's Office in 1999 for 19 months. Until 2006, he was a professor at the Seoul National University. In June 2006, he was appointed as a resresearcher for the GRI. The provincial governor, Kim Moon-Soo, incorporated Lee Won-Young's thinking into his agenda, and after being elected, invited Lee Won-Young to be the head of the GSTEP from 2008 to 2013 (Interviewee 2).

GSTC was re-formed as the Gyeonggi Institute of Science and Technology Promotion (GSTEP) and was given the role of coordinating the science and technology policy in the region. As part of a major overhaul of the organization, the GSTEP employed over 110 people including the staff of the Gyeonggi Bio-Centre, and it was endowed with an annual budget of 38 billion KRW in 2012.

Figure 6-2 Development of the GSTEP



Source: own creation.

The GSTEP was founded to look after technology investment and management in the region. It aims to support endogenous technology development with several strategic actions by undertaking a holistic approach, an approach that differs significantly from that of previous agencies, such as the Gyeonggi Technopark.

My concern is that throughout Gyeonggi Technopark, there seems to be too much focus on NTBF or high-technology based firms. I am not saying that that is a bad thing, because obviously it is high value-added generally speaking, but from the perspective of the types of business that we have in this region –low technology-based firms – what impact has GSTEP had at that level? I think the aim of the GSTEP would be to see a wider use of the funding to more general benefit. (Interviewee 1)

Alongside the move to emphasise bottom-up procedures, there have been more formal routes, such as public hearings, in order for the province to gather and identify opinions and listen to the views of the private sector about central government's policies and projects.

The GSTEP's holistic approach involves paying attention to policy initiatives that reflect regional interests. Regional interests could be understood as "the prioritization done at regional level in a small group of sectors/technologies potentially competitive in international markets and generators of new activities with a competitive advantage over other locations" (GRI, 2008b: 34). It is, therefore, best expressed in terms of the development problems that need to be addressed. The GSTEP identified the regional interests through realistic, achievable, and measurable objectives, and specific initiatives connected to it, thus involving all the economic and social agents.

There is a tendency for countries and regions to choose the same priorities. They all strive to become a hotspot in biotechnology, nanotechnology, or information and communication technology (ICT) by hosting clusters of excellence, incubators, science parks, and world-class research hubs. Regional priorities must be forward looking, truly contributing to development (GRI, 2008b: 36)

The GSTEP defined regional interests based on two determinants: first, the most pressing technological problems that need to be resolved or the most promising opportunities that may be pursued to support the short term development of business firms; and second, the agenda of the important industries, which will contribute to the growth of regional industries and regional economic well-being (GRI, 2008b: 46).

The GSTEP recognised that there are more demands in the region than just supporting high-tech industries and understood the importance of bridging the gap between traditional industries and knowledge-based industries. Regarding the low growth of traditional industries, such as the textile, ceramic, and furniture industries, the GSTEP's report stated that in order to become a technological competence region, the region must "strengthen the knowledge-based industries, but also identify new strengths of traditional industry" because a competitive region creates clustering in accordance with its competence. To do so, it suggested that the priority was more international collaboration in traditional industries with growth potential, such as ICT and

nanotechnology. Linked to these technologies, the plan was to undertake the product innovation and establishment of regional business cooperation as specific priority measures.

In this way, priorities indicate the demands for new policies to deal with the issues that the region is facing in order to pursue industrial development. This process is important in that any previous strategies that did not include this provision would have had an entirely different character. What is new in this approach is that the policy-making process aims to encourage the articulation of the differentiation of demands (i.e. as opposed to imitation strategies) based on the comparative advantages in the innovation potential of the region. Thus, it can be seen as a new type of regional strategy, in that it incorporates technological capability into regional industries (old and new), regional collaboration, and global outreach.

To establish a structured dialogue with industry, the GSTEP issued a call for a Gyeonggi Technology Policy Guideline, a mechanism by which industry could conceptualize the problems it is having difficulty addressing, including the kinds of technological barriers that must be overcome. Of course, the SMEs of the region are not monolithic. In fact, the guideline submitted was authored by policy makers, researchers of Gyeonggi Research Institute (GRI), public officers of the provincial government, and some university professors. The guideline process as well as the notion of the GTDP was introduced to the GSTEP. Between 2007 and 2008, five guidelines covering a range of technologies were submitted and were sorted in accordance with the technology taxonomy. Of these, the guidelines addressing SMEs' technology development issue provided both scope and technical detail, and thus offered a comprehensive roadmap for the GSTEP in developing a partnership with SMEs. The guideline process provided a place for clients to go to with their ideas and provided an opportunity for the GSTEP to define the goals of the GTDP more clearly.

In my opinion, Gyeonggi is an attractive area in which to establish a business. The provincial government gave a lot of assistance in the beginning, helping us fund the setting up of our business. We think the biggest challenge is finding information about technological development. It is very difficult to find the right organization that is willing to share good information. I think the GTDP is good for our longer-term prospect in product development. We found a technological partner (university) to improve our product. (Interviewee 24)

The guidelines feature as a source of information for the business sector that facilitates technological development as well as market access and efficiency in production. In addition, the guidelines are frequently complemented by harmonised consensus-based standard setting on technical specifications. This allows regional SMEs to collaborate with GSTEP to design the most appropriate implementation standards and to update them regularly to take stock of evolving needs and technical progress.

Table 6-3 Rescaling regional interest and priority-setting process

Date	Rescale process
September 2006	Established prioritization scheme led by the GSTC (reviewed the R&D objectives of Gyeonggi province vis-à-vis national and regional subsector development objectives)
December 2006	Compiled baseline information (including the results of previous priority-setting exercises) Priority setting by scoring method
January 2007	First meeting of experts (reviewed national development objectives and refined the national priorities previously established) Second meeting (to analyse the constraints, refine regional network priorities previously established, and formulate regional strategy) Regional meetings of innovative actors (firms, universities and institute researchers) to examine national and regional priorities Workshop of key representatives of provincial governments, the private sector, and universities Determined regional objectives and strategy Examined GSTC's mandate, mission and objectives Examined national priorities and regional priorities established by GSTC networks Defined regional themes and programs that fulfil objectives Identified project priorities for the short, medium, and long-term Included a strategic plan framework for the preferred option
March 2007	Finalized options and clearly articulated the preferred option (including recommendations for implementation)
May 2007	Sent the GTDP for review to provincial council
June 2007	Sent the GTDP for approval to provincial council
January 2008	Implementation over first strategic year

Source: Own creation.

Most of all, the GSTEP needs to reform the spending structure in order to ensure fiscal viability. In 2007, industrial budget allocated up to 46.8% of its 270,160 million KRW budget on infrastructure projects, with only 5.5% on technology development spending.

Then, in 2008, the provincial government announced an R&D budget plan after a hard-fought tug-of-war among the GSTEP and other agencies to secure more fiscal means. The provincial government said that technology development spending would rise 95% to 28,895 million KRW from 14,791 million KRW for 2007.

In the creation of new demand and of markets for new products, technology development has become an important part of the industrial policy. Therefore, it has to be closely integrated with the R&D budget of provincial government; hence, the budget has become an important factor in region's innovation process.

Table 6-4 R&D expenditure by Gyeonggi provincial government (2001-2013)

	Technology investment		Public research institution		Infrastructure		Total
	Million KRW	%	Million KRW	%	Million KRW	%	
2001	2,730	3.9%	63,260	91.5%	3,150	4.6%	69,140
2002	3,900	4.2%	74,440	81.0%	13,536	14.7%	91,876
2003	4,140	3.3%	108,900	86.9%	12,320	9.8%	125,360
2004	10,710	6.9%	84,235	54.5%	59,608	38.6%	154,553
2005	9,838	4.7%	117,788	56.3%	81,648	39.0%	209,274
2006	11,280	5.1%	106,748	48.2%	103,222	46.7%	221,250
2007	14,791	5.5%	129,029	47.8%	126,339	46.8%	270,160
2008	28,895	12.6%	107,906	46.9%	93,051	40.5%	229,852
2009	30,900	16.5%	107,836	57.7%	48,049	25.7%	186,785
2010	37,910	15.9%	97,230	40.8%	103,279	43.3%	238,419
2011	25,530	12.1%	99,718	47.2%	86,148	40.8%	211,396
2012	34,138	12.1%	124,192	43.8%	124,960	44.1%	283,290
2013	16,600	6.2%	124,427	46.3%	127,597	47.5%	268,624

Source: GSTEP (2014: 40)

Table 6-4 shows the budget for R&D investment of the provincial government and how the funding is allocated to various uses. It also shows that there are important differences between infrastructure and technology development; infrastructure generally fared better than technology investment, as the region concentrated the budget on



infrastructure building, and technology investment in the region was less likely to be affected. However, as of 2007, some of the infrastructure (Gwanggyo Techno Valley) had been completed. Thus, between 2008 and 2010, Gyeonggi province experienced a gradual increase in technology development. One question that arises is whether the infrastructures had been made or were being developed without any accompanying technology investment concepts to boost entrepreneurial dynamism.

## **6.5 The strategic actions**

Since the GSTEP focuses heavily on regional interest, it may be useful to spell out what strategic actions have been introduced and how they relate to regional economy. National objectives can be highly effective in promoting balanced development, while regional objectives are of critical significance for the regional economy. The following policy initiatives of the GTDP and knowledge communities, then, may be helpful to understand the processes. These are closely linked to local firms.

### **6.5.1 The Gyeonggi Technology Development Programmes (GTD)**

First, the GSTEP introduced a strategic policy for the technology development of local firms. As the GSTEP emerged as a strategic actor in the region, it was important that regional resources were focused on regional priorities that would really add value in the region. The GSTEP recognized that preparing for the knowledge economy was important; indeed, one of the interviewees reported its role as “ensuring that we focus constantly on the importance of SMEs to the upturn. If we do not grow the firms at the head of the upturn, we will not grow the Gyeonggi and national economy either. We need the investment that will enable this to happen” (Interviewee 2).

The GTDP was launched in 2008 with the aim of addressing the particular technology development of the local firms. It is a cost-sharing technology development programme designed to partner the provincial government with the private sector to further both the development and dissemination of high-risk technologies that offer the potential for significant economic benefits for the region (GRI, 2008a: 55-56).

Table 6-5 The Gyeonggi Technology Development Programmes (GTDP)

	Strategic Industry Technology Development		Firms-led Technology Development	
	Strategic Industry	Public Technology Sector	Open Technology Development	IICC
Aim	Enhancing industrial structure and high value-added	Development of public technology	Demands-oriented support	Promoting activities of IICC
Target	14 sectors responding to the needs of provincial government	Technology responding to the needs of publicity	Applied technology in short-term	Applied technology in short-term
Clients	Firms, universities and public research institutes		Firms	More than two co-work firms
Period	Within 3 years		Within 2 years	Within 1 year
Funding	300m won / year	300m won / year	200m won / year	100m won / year
Provincial funding <sup>a)</sup>	60%	60%	50%	40%
Projects (2008-2012)	56	9	129	116
Example	Solar battery	Develop Foot and Mouth Disease antibody check kit	VUI (Voice User Interface) navigation	Environmental Stretch Film
Funds (2008-2012)	28 billion KRW	5.1 billion KRW	11.5 billion KRW	30.4 billion KRW
Process	Top-down	Top-down	Bottom-up	Bottom-up

Note: a) Provincial funding is limited to 40-60% of the project estimate or actual project cost. The rest of share cost required from project firm.

Source: author's own creation but modified from GSTEP (2012: 4)

The programme identifies measures that lead to an improvement in economic performance, whether firms are already successful or are seeking to improve their technological performance. This measure is targeted at the regional level and provides a shared vision for the technological development of the region's SMEs.

The GTDP is composed of two sub-programs: the Strategic Industry Technology Development Program and the Firm-based Technology Development Program. These programs were selected to avoid duplication and poor coordination, since the resources available were limited.

At first, the Strategic Industry Technology Development Programme reflected the relevance attached to firms from "key sectors", which were viewed as important for the necessary modernisation of the local economy. For example, late in the autumn of 2010, South Korea was hit by a rapidly spreading outbreak of Foot and Mouth Disease (FMD). FMD is a highly contagious and sometimes fatal viral disease of cloven-hoofed animals, such as cattle and pigs. FMD is not transmissible to humans, but the disease has major economic consequences. Were a case of FMD to be detected, the government said, the affected area would have to be quarantined and the infected livestock destroyed. Currently, the provincial government is planning to introduce a certification system to guarantee that stockbreeders have adequate training, particularly in hygiene. However, in 2009, the GSTEP provided 360 million KRW over two years to develop an FMD antibody check kit. This test kit was developed in collaboration with the Cha Hospital Research Institute and a private-sector firm. The research provided an effective means of vaccinating against FMD and of allowing the separation of infected animals from vaccinated animals.

The second, the Firms-led Technology Development Programme, became more focused on raising firms of lower technology capability and investing in firms of high performance and growth, as summarized in Table 6-5 above. Another strategy was the Industrial Innovation Cluster Policy (IICP), which was set up as partnership policy in June 2007. This is a partnership between the provincial government, research laboratories, and SMEs to conduct high-risk research to develop enabling technologies that promise significant commercial payoffs and widespread benefits for the economy. The IICP provides a mechanism for industry to extend its technological networks and push the envelope beyond what it otherwise would attempt.

Beginning with the fiscal year 2008, the GTDP implemented a hybrid form of competition –bottom-up competition and top-down decision making – in which the GTDP could perform its outreach with industry much as it did under competition, with the competition open to all, but organised through a technological focus. In this programme, SMEs could propose research via a Request for Proposal (RFP) to the GTDP to be judged in competitions for funding based upon both the technical and economic/business merits of the proposal. This change was made primarily because the demands of SMEs for the GTDP outstripped the GSTEP's budgetary ability to respond. The GSTEP holds RFP competitions open to all SMEs. Upon completion of the review, the boards presented a ranking of RFPs to the Project Management Team, which was charged with making recommendations for financing to the GSTEP chairman. At this point, the Project Management Team could request clarification from the board members regarding the final selection. The GSTEP chairman would make the ultimate funding decision.

The GSTEP formed a Technology Evaluation Board to review RFPs and make recommendations for funding. Board membership comprised university professors, R&D

researchers,<sup>76</sup> and GSTEP employees possessing technological and business expertise. Board members also included business professionals, who in some cases are retired executives whose careers were spent in the selected technical area, or who were economists, venture capitalists, and business academics. In RFPs' competitions, proposals first were screened to determine if they were relevant and contained all of the necessary documentation; then those remaining received detailed technical and business reviews. For the programme that operated during this time, a Technology Evaluation Board was set up, which generally comprised 3-4 experts in each sector. Sectoral reviews of RFPs were supplemented by additional reviews from cross-sectoral experts. With all the members in attendance, they discussed each RPF with attention to its conformance with both the technical and business criteria outlined in the guidelines. Those RFPs determined to be within the scope and possessing high technical and business merit in the region against the criteria were placed on the list of final candidates.

Table 6-6 Number of GTDP applications (2008-2012)

	2008	2009	2010	2011	2012 (first half)
Applied RFPs	226	233	201	166	83
Selected RFPs	87	76	72	49	26
Competition rate	2.6	3.0	2.8	3.4	3.2

Sources: GSTEP (2011b: 23)

In total, 283 projects were budgeted under the GTDP. Table 6-6 provides a summary from the GSTEP held between 2008 and 2011, in which 1,000 RFPs were received and 283 RFPs were selected. For example, R&D funding totalled 48,931 hundred million KRW in 2012, representing a commitment of 23,005 hundred million KRW from the provincial government and 25,926 hundred million KRW from the private sector (GSTEP, 2012: 10).

<sup>76</sup> R&D researcher reviewers are primarily employed in central and provincial institutes chosen for their expertise in the selected technical area.

Table 6-7 Some cases of GTDP

Firms	Collaborators	Technology development
Aegisco Co., Ltd.	Senplus Co., Ltd. Gyeonggi University	Develop chucking substrates such as silicon, sapphire and glass in the industries of semiconductor, LED and Display.
Sung An Machinery Co., Ltd.	New Control Tech Co., Ltd.	Develop 'doctoring system' for Auto-positioning and anti-sputtering of ink in the printing unit. The development of process and equipment for printed electronics including OPV solar cell, OLED, lighting, and others.
Bio Skin Care Inc.	Fure Cos co., Ltd.	Develop new raw material (growth factor), newly manufactured material, which are essential to naturally manufactured functional cosmetics for medical skin purpose.
Ihshin co., Ltd.	Mirim co., Ltd.	VCI Stretch Film for industrial packaging business.
Laonzena co., Ltd.	Woodmetal co., Ltd.	Develop intelligent furniture using 'u-media board' (touch UI technology) for multimedia contents services
Korea Micro Fiber co., Ltd.	KITECH	Develop new antibiotic and antivirus fibre for IT cases (e.g. iPhone and iPad), shoes, gloves
Kolong Tech co., Ltd.	Jaeil co., Ltd. Yongdotrim Art co., Ltd.	Develop new fibre for car interior materials.
Hyundai Industrial co., Ltd.	Gyeonggi Industry University DAS co., Ltd.	Develop Car seat Ass'y With 'Lumbar Supporter'
Yuneco Development co., Ltd.	Gyeonghee University	Development 'HM2 Filter System', which is a water treatment system with high efficiency, can apply various membrane materials and pore sizes with treatment purposes, and the system shows excellent treatment efficiency and is very compact because of integration of various processes (coagulation, precipitation, flotation, filtration and sterilization) into the one reactor.

Sources: author's own creation from interviews

When asked whether the GSTEP was viewed as being part of a regional system of innovation, an interviewee highlighted the success in advancing "GTDP as a future" in that, currently, around 1,300 firms are part of it. The GTDP was intended to provide a shared vision for the development of the regional economy, to improve firms' capabilities and enhance the region's competitiveness. The manager of GTDP (Interviewee 3) commented that the GSTEP had evolved from the GSTC, which had a legacy of regeneration, and the first programme had therefore focused on the regeneration of the institutional framework.

The GTDP can be defined as short-term efforts aimed at specific well-defined technology and business goals. This programme, which involves the parallel development of a suite of interlocking R&D projects, tackles major technology problems with a relatively high payoff potential, which cannot be solved by an occasional project coming through the general competition. By managing the actor

of projects that complement and reinforce each other, the GTDP can have a possible impact on the Gyeonggi's economy. (Interviewee 3)

## **6.5.2 Development of regional partnerships**

The IICC and IMT projects were launched with the aim of encouraging local firms to work in partnership to tackle fraud more effectively. The IICC, which will be discussed in more detail in the next section, connects greater Gyeonggi communities to GSTEP in order to help solve difficulties and take advantage of new opportunities. An important part of the IMT project is to facilitate the exchange of information and experience between individual actors. Both projects bring together local talent and resources with GSTEP and seek funding to drive technological development.

### **6.5.2.1 Industrial Innovation cluster committees (IICC)**

In 2007, 300 of the firms with the GSTEP launched the Industrial Innovation Cluster Committee (IICC). IICC is an important element of the sectoral cooperation partnership and is an extended form of the industrial-robot firms' network, named the Bucheon Industry Promotion Foundation (BIPF), in Bucheon city<sup>77</sup>. The committee aims to "enhance the technology capabilities of a firm through the creation of sectoral learning networks and to tap into its resource and increase its accessibility for other firms in the region" (Interviewee 3). This, for instance, can help to mobilise technological knowledge between SMEs and research institutions/universities. It focused its efforts on achieving

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<sup>77</sup> The BIPF is responsible for searching and networking new technology that could be applied in existing products and for solving existing technological problems. One objective of the BIPF was to activate Bucheon city's economy by developing an intelligence-based industry (specifically, industrial robots, molding, accessories, and materials) through promoting regional industrial information; designing research and development programs; training an industrial workforce; stimulating industry-based technology development businesses; and encouraging links among industry, universities, and laboratories.

this aim by supporting networking and especially by amplifying the endogenous technological strength of the region. This follows the strategic orientations outlined by the GSTEP.

IICC comprises a group of firms, research universities, and research institutions within the same sectors, which came together to share and to learn from each other. The principle of a learning network is that the individual firms hold deposits of tacit knowledge, which are considered core knowledge resources. These resources have been built up within the firms' actual business experience and entrepreneurial success and failures. Their knowledge is an under-utilized regional resource. Firms as learning networks offer the potential for firms to learn how to solve technological problems through communication and by learning from other firms' experiences. It was apparent from the research conducted with the participants that a key benefit of IICC was that it helped technological collaboration (*Korea IT Times*, April 9, 2012).

In the words of a participant from one member firm, "Before, I felt quite isolated in technological improvement; now I feel more connected" (Interviewee 22). This is relevant in the context of economics on a regional scale, as isolation can be a key problem faced by the business community. A key objective was that each of the committees would become sustainable, in that they would continue to operate after the completion of co-works and thus provide lasting benefits to the participant firms and the regional economy. Networks quite often disband when the interested firm running the network loses interest or funding is cut. Thus, if the network were able function under complete self-direction, the function of the network would be to serve the needs of the firms solely and not to reflect values or interests associated with any funding body or support agencies.

IICC provides an opportunity to meet other firms in similar industries who understand the frustrations and worries of technology. While networking between firms in similar



industries is beneficial, it can be difficult for firms in more fragmented regional economies to find sectoral networks. This is where IICC can be of real benefit to the regional economy, and the interviews supported the concept that firms can help and develop their product by networking with other business professionals. As one interviewee stated, “I realized that we all face the same problems, like cash flow. Seeing other firms being so honest encouraged me to be honest and forthcoming with information also” (Interviewee 23).

To become member of the committee, a firm should have experience in cooperating with other firms of the same or a related technology. Participant firms must display a serious intent to grow their business so that they can maximize their benefits from engaging in the network. The time, trust, and closeness built up between the member firms facilitate feedback on issues and problems related to their business. Participants reflected that a key benefit of a network approach in comparison to other existing business networking models is that “in this committee, because we have to divulge, it is all built around building up trust. Therefore, one would build up much closer relationships, which in turn, benefits the business” (Interviewee 24).

IICC currently focuses on the bio, new material, car parts, fabrics, and nine other select industries. By 2010, more than 1,200 SMEs and research institutes from 13 different sectors had joined (see Table 6-8).<sup>78</sup> Since its establishment, the committee has been funding technical transfers and cooperation among member firms and developing new technologies. In addition, the provincial government has added to the list the software sector, new start-ups, companies based in the northern part of Gyeonggi province, and

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<sup>78</sup> GSTEP announced to increase the number of committee sectors from thirteen to seventeen by adding four more highly competitive industries. Newly added are the memory semiconductor, broadcasting and communications LED, and recycled materials industries, all of which are closely related to the seventeen ‘new growth engine’ industries designated by the central government for their considerable growth potential and market influence.

companies engaged in the commercialization of technologies recognized in technology contests.

Table 6-8 Sectoral committees of IICC (December, 2010)

Industry	Number of member			Start year
	Total	SMEs	Technological sub-committee	
Intellectual mechatronics	111	105	6	Jun. 2008
IT-SoC, Mobile	86	65	4	
Textile	98	79	5	
Robot	74	74	3	
Pharmaceuticals	77	64	5	
Packaging	62	61	4	
Automobile parts	62	61	5	
Nano	180	112	5	
Furniture	97	87	5	Oct. 2008
Medical Equipment	91	80	5	May 2009
Printed-Circuit Board	95	86	3	
Bio-New Materials	74	72	2	
New and Renewable Energy	93	81	3	Aug. 2009
Total	1,200	1,027	55	

Note: GSTEP has decided to include the memory semiconductor, broadcasting, LED, and recycled materials industries in its committee, all of which are closely related to the seventeen 'new growth engine' industries designated by the central government for their considerable growth potential and market influence.

Sources: GSTEP (2011c: 7)

To create and develop a sustainable learning network, the IICCs are closely connected to the GTDPs of the GSTEP. For firms to qualify for network entry, they have to have reached a sufficient stage of their business cycle to benefit from taking time out to think strategically about their technology development, and to have reached a level of sufficient experience to transfer knowledge to others within the committees. It was also necessary that participants from firms were the owner or top manager in their business to ensure that they had the autonomy to implement any actions brought about through their learning in the committees.

In the area of IICC, the province provides a total of KRW 5 billion for 25 projects, with 200 million KRW for each project, to a consortium of more than two companies. In total, the province provides 300 million KRW for research and development to companies that are

less than four years old for one of three designated projects. In the areas of service, manufacture, and software, a total of 500 million KRW will be provided annually to companies engaged in five designated areas, with 100 million KRW allocated for each area. For the development of R&D in the northern part of Gyeonggi province, the province offers local companies in Goyang and other localities a total of KRW 1 billion for ten projects, with KRW 100 million for each.

Here, we can see the GSTEP and firms in a better relationship, because of their direct negotiating relationship and mostly, because of the direct influence of firms' requirements on the innovation process. This is a major and durable outcome of the continuous action regarding firms. To date, the benefits that IICC has created and the impacts it has had are extensive and continue to positively affect the regional economy. The GSTEP tracked the development of technology and the potential impact that its involvement with IICC would have on the regional economy.

#### **6.5.2.2 *The Intellectual Mechatronics (IMT) project***

There are greater demands for mechanical products with high technologies than for those without. This concerns mainly the industry network of Intelligence Mechatronics (IMT) that emerged in 2010 out of the four provinces' interdisciplinary programme for promoting the IMT convergence industry through cooperation – in short, the convergence of the mechatronic industry. The IMT project is a networking policy for mechanical engineering firms, and it has envisioned the realization of the IMT industry, as discussed in the interviews.

IMT was established in 2009 with the objectives of promoting an integrated system of research, training, information, and documentation activities in the field of mechatronics and of evolving as a centre of excellence in the field of mechatronics for value-added products at regional levels. With these objectives in mind, we have established strong inter-regional links, and organized many seminars, workshops and conferences; and we have given training to local firms in the field of

mechatronics. We have extended help and provided funding to those firms who are trying to establish mechatronics activities in four regions. With respect to research, the recent activities have been mainly towards developing new demands in the areas of intelligent mechatronics. Our work includes a combination of both new technologies and practical applications to robotics and nonlinear systems. In this context, we have accumulated strong expertise in machinery based on IT technologies. (Interviewee 3)

The IMT project combines the traditional metal and engineering industries with expertise in modern ICT and electronics, producing what could be termed as intelligent hardware. The project was established to provide expertise in utilizing and applying the new technology (i.e. IT, BT, and NT) concepts and ideas in the mechatronics industry. Based on this idea, the project provides an interdisciplinary, tightly focused approach to designing such devices, producing mechatronic technologies that can have an immediate impact on the industry. The IMT industry includes four interrelated areas of new technologies (GSTEP 2010b: 1):

- IMT parts (IT, BT, NT + MT parts): Automobile cockpit sensor (SOC sensor and communication + automotive cockpit module), Bio-sensor (Bio marker + electronic integrated circuit), Automobile Engineer Control Unit (Man Machine Interface contents + Automobile control module)
- IMT products (IT, BT, NT + MT products): CNC constructing machine (contents, communication software + NC constructing machine), Health test kits (bio sensor + test kits), 3D TV (3D module/contents + digital TV), Automobile parts test system (visual test devices + parts manufactures)
- IMT systems (IT, BT, NT + MT systems): Semiconductor/display product system (product control system + product equipment), Remote health test system (contents, communication system + health test kits)
- IMT services (IT, BT, NT + MT services): Plant management/control service (remote hitch test/management service + processing system)

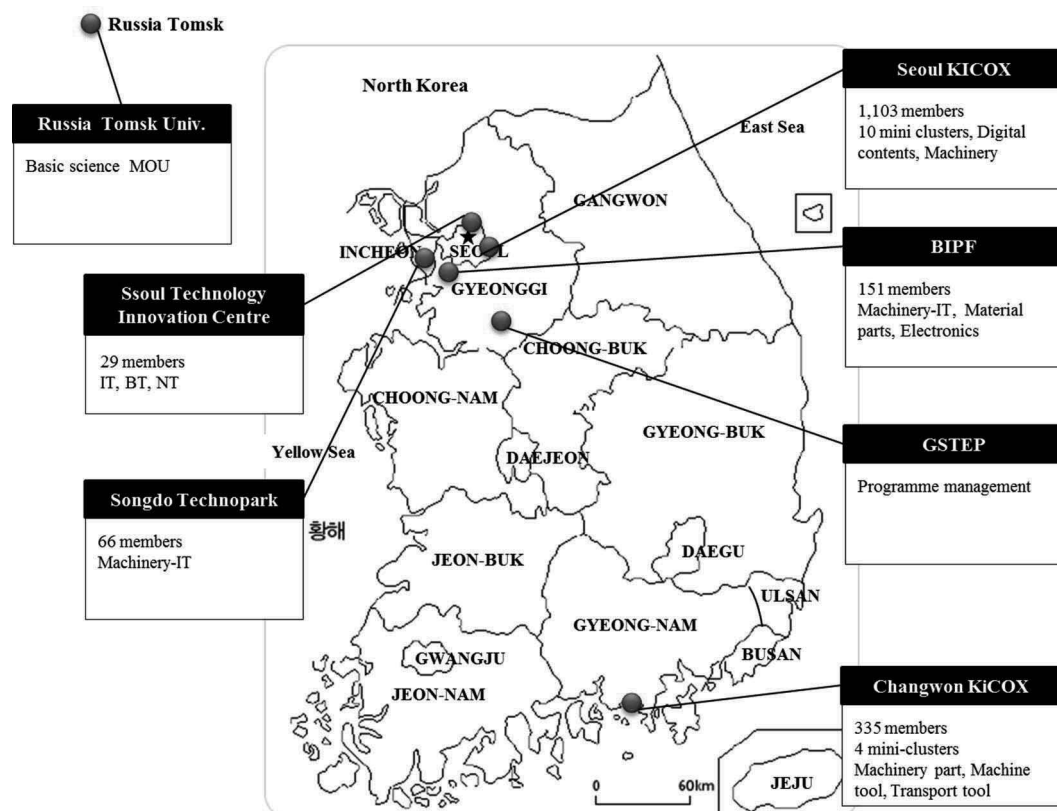
In particular, three major research categories are being pursued: robotics, electric machines, and automotive systems.

- First, robotics research deals with the fusion of machines, computing, sensing, electronics, software, and systems engineering to create intelligent devices capable of interacting with the complexities of the real world. Research in robotics focuses on the perception and control of autonomous machines in unstructured and dynamic environments and the application of robotics in

infrastructure maintenance, urban search and rescue, health care, and road vehicles.

- Second, electric motors and drives are an essential part of many mechatronic devices. The focus is on employing new materials and topologies for electrical machines and power electronic circuits, effective system design optimisation algorithms, intelligent sensing, monitoring, and variable speed control techniques, and the optimum design and integration of compact low temperature PEM fuel-cell systems.
- Third, automotive systems are a major application area for mechatronic systems. The focus is on automobile powertrain and suspension control for improved transmission shift performance, fuel efficiency, drivability, driver and passenger safety and comfort; sensing and perception for situation awareness and fatigue monitoring for road safety; sensing and control for reducing emission levels in internal combustion engines; and hybrid powertrains.

Figure 6-3 IMT project between four provinces and Russian university



Source: GSTEP (2012: 13)

Particularly, the GSTEP considers that working in IMT collaboration with other provinces (i.e. Seoul, Inchoen, and Changwon) is crucial, as all of them have something different to offer (Figure 6-3). Existing policies imply looking inside the province; however, this might be insufficient for strategic actions. In other words, the GSTEP identified the competitive

advantages of key industries by looking beyond the provincial administrative boundaries and making comparisons with other provinces. This concerns first of all the industry network that, in 2010, emerged out of the four provinces' interdisciplinary programme for promoting the IMT convergence industry through cooperation – in short, the convergence of the mechatronic industry. The project identifies relevant linkages and flows of knowledge, revealing possible patterns of integration with partner regions.

Recently, the GSTEP has cooperated with 18 experts in knowledge-based technologies and mechatronics, that is, IMT coordinators, to develop an active network of firms and research institutes. An IMT coordinator refers to a group of academics, patent attorneys, and experts, for mechatronics firms within the IMT project who understand how mechatronics and new technology fit together in product innovation. They bring together stakeholders, led by industry, to define short- and medium-term research and technological development objectives and to lay down markers for achieving them. The extent of the active external coordination and cooperation role of the GSTEP is arguably more advanced than in other actors. This is also linked to a finance agreement with central government. The finance agreement between the GSTEP and central government existed previously, and it is said to have been influential in the process of establishing the IMT project and for the intra-provincial clustering.

The development of the GSTEP's programmes demonstrates a shift away from strategies that had been previously implemented. Rather than simply replicating actions that worked in the past, the GSTEP and SMEs have consciously developed new ways of acting. This is reflected in several changes. For instance, there are new players in the coordinator. In particular, the regional authorities play a much more important role than they did in previous efforts. There are also new behaviours, such as technology development funding (i.e. GTDP). The shift from indirect funding to direct funding is also new. The IICCs have also developed new ways to collaborate; for example, they make much more extensive

use of the regional budget to facilitate innovation activities. Taken together, it is clear that the development of the GSTEP represents a substantial change in the routines and objectives of research collaboration.

The GSTEP has played a major role in making and continuing this tie. It acts as a platform for external between other regions in the field of mechanical and electronic industries. In addition, it has coordinating and cooperation functions both internally and externally at the regional level. It is internally responsible for the executive actor of the region's innovation forums that were established in 2009, namely, the Wednesday seminar, Gwanggyo Knowledge Forum, and Gyeonggi Science and Technology Committee. The participation of various persons is a sign that the cooperation has become a part of the GSTEP culture. This seems not only to foster a strategy upgrade internally, but it is also likely to be a key contributor to the funding GSTEP receives.

We believe we have a core offer of innovation support programmes that are unique to firms, and we offer more regional services that are not unique to us, but are part of a package that could be. That is why we work with other regional authorities. Also, they offer things unique to them. For the past year, we have been actively looking for partnerships with the innovation connectors through formal partnerships, a memorandum of understanding. (Interviewee 3)

And the project will be a good example of how different provincial governments can work together. (Interviewee 15)

## **6.6 Concluding reflections**

This chapter has concentrated on addressing the emergence of new actors in and new approaches to Gyeonggi's regional development policies with a technology focus, on examining how and why the GSTEP has developed such a strategy, and which factors have facilitated the process.

As was shown in Section 6.1, we explored how the political context is intertwined with the technological development policy in Gyeonggi province. As we saw in the case of the

GTDP, IICC, and IMT, a region-specific strategy has emerged. Particular attention was paid in Section 6.4 to the case of new regional authority, the GSTEP, which has pioneered its way to developing the regional strategy in the industrial policy. The GSTEP and policy initiative has grown quickly in Gyeonggi province, fuelled by a demand from the governor to use the power to tackle the regional economy. Just as the provincial government has cooperated with central government, the provincial government has started to develop its own approach. Interviewees agreed that the main catalyst for strategic action on policy had been the decision by the governor to focus on the economy, as this raised its political profile.

This is an elaboration of the partnership relationship, which sees central government and the provincial government as more or less equal partners. This also postulates that both central government and the provincial government have resources (legal, financial, political) that each can use against the other. Thus, the provincial government sees the relationship as a process of bargaining and exchange. The relationship is not evenly balanced, but the regional actors have significant assets of their own that they can exploit: local knowledge and expertise, networking, and above all, their position as the elected and concerned representatives of their communities.

However, Gyeonggi province can only be seen to be successful by actively implementing a bottom-up development strategy that is based on a widely accepted vision of the future by using harmonizing programmes that have different economic development effects with the help of dynamic regional networks. Two major issues emerged from the debates aimed at the interpretation of systemic change: on the one hand, how do other actors, especially existing actors, respond? On the other hand, how can regional competitiveness be improved, by which GSTEP intervention may be regarded as successful?



It is important to realise that different modes of governance exist, ranging from deliberative to hierarchical, and there are different perspectives on development. Depending on the perspective used and the mode of governance, different constellations of processes, instruments, actors, and institutions play a role in sustainable development. Clearly, disagreement can exist between old and new actors. Tensions and conflicts may arise if certain tools or procedures do not match. In fact, it is probable that the conflicts inherent in the change should be reflected in some form within the transition arena.

At the beginning of the strategic actions in 2008, the GSTEP had a rather ambiguous position with regard to this initiative, being its natural promoter but also being on the defensive in case the strategic action were to end up dismantling the network, which had it taken so much time and effort to set up. Thus, a new direction for the evolution of the system has been embarked upon with several points of conflict.

Therefore, it is the combination of structural factors and agency factors that explains the new relation formation in the RSI. The next chapter seeks to provide a continuing change process account of these questions and to describe the specific relationship among regional actors.

## **7 Continuity and change of RSI**

This final empirical chapter discusses the political factors affecting change and their continuity in the RSI over time. In particular, we examine whether the emergence of the GSTEP represents a transformation or involves a continuity with past patterns of relationship.

The chapter consist of three parts. The first section explores integration in the GSTEP and national agencies and assesses key problems among them. The second section considers the responses of national agencies, while the third section explains the political sources of continuing tensions. This section explores how the relationship has kept moving towards being complex and fragmented since the emergence of the GSTEP.

### **7.1 A 'new' form of RSI through de-centralization or re-centralization?**

Cooke et al.'s (2004) case studies on RSI in his book, which included Gyeonggi, as discussed in Chapter 1, provided the motivation for this study. According to his approach, RSI in South Korea are changing in two particular aspects: 'interactive' business innovation and 'networked' governance (Cooke et al., 2004: 15).

On the one hand, 'interactive' business innovation activities and their performance effects can be confirmed by a number of statistical indicators. First, we examine the performance of the region and then the interactivity. As shown in Table 7-1, Gyeonggi province is one of the innovative regions in South Korea. Jang Jae-Hong (2006) examined regional innovation performance (2000-2004) using the European Innovation Scoreboard index. Daejeon shows the highest score (.6728) and Jeonnam the lowest (.0693). Only Daejeon, Seoul (.5055), and Gyeonggi (.4962) are regions with higher than average (.3548) scores

on this index. The regional differences are greater in the Innovation Inputs Index than in the Innovation Output Index, with Daejeon significantly above not only Gyeonggi but also every other province. It seems appropriate to say that spatial differences came from the high performance business in Seoul and Gyeonggi province, with an important reason for the higher standing of Seoul being the government-funded research institutes in Daejeon (Daeduk Techno Valley).

Table 7-1 Regional innovation index (2002-2004)

	SII (Summary Innovation Index)	Innovation Inputs Index	Innovation Outputs Index
Seoul	0.5055	0.3306	0.6803
Busan	0.1549	0.0953	0.2146
Daegu	0.1912	0.1096	0.2729
Incheon	0.2728	0.1934	0.3522
Gwangju	0.2533	0.178	0.3287
Daejeon	0.6728	0.8628	0.4829
Ulsan	0.129	0.1002	0.1579
Gyeonggi	0.4962	0.4352	0.5573
Gangwon	0.1208	0.1402	0.1015
Chungbuk	0.3458	0.2578	0.4337
Chungnam	0.288	0.2361	0.3399
Jeonbuk	0.1456	0.1265	0.1646
Jeonnam	0.0693	0.075	0.0636
Gyeongbuk	0.3473	0.2449	0.4498
Gyeongnam	0.2029	0.1825	0.2234
Jeju	0.111	0.1461	0.0758
Average	0.3548	0.2657	0.4438

Note: The indices consist of the summary innovation index (SII), the innovation inputs index (which, in turn, consists of the human resources index and knowledge creation index), and the innovation outputs index (again consists of innovation-application index and intellectual property index).

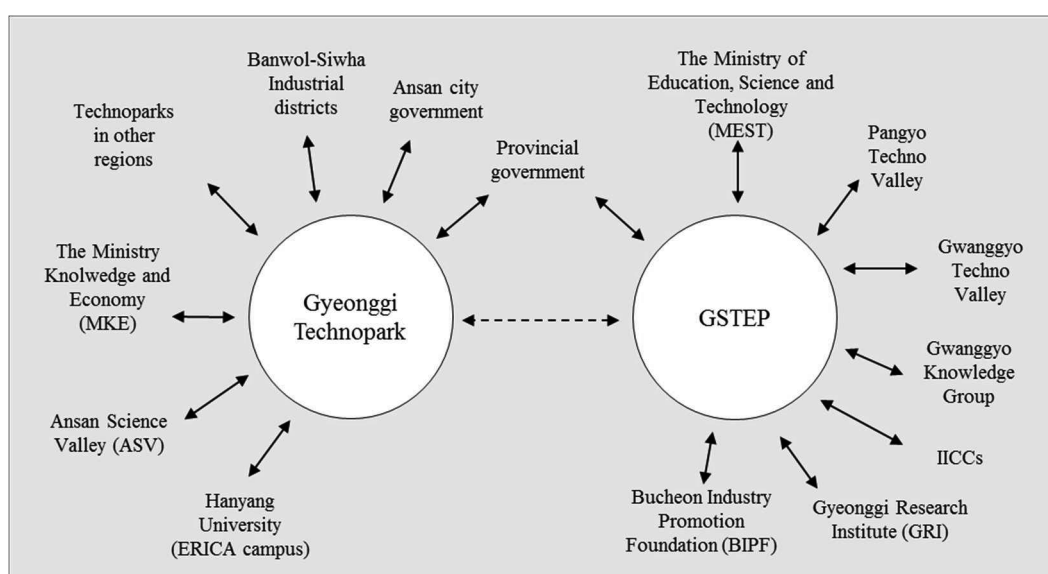
Source: Jang Jae-Hong (2006: 50)

With regard to the ‘networked governance’ observation made by Cooke, the results have been more mixed. The last decade has seen the establishment of numerous policy actors, such as Gyeonggi Technopark, the GSTEP, and various partnerships, and these are now playing a major role in the knowledge generation and diffusion subsystem. The fieldwork for this thesis yielded a simple picture of the interrelationships among the actors participating in the industrial policy process. Here, for the sake of simplicity of the

representation, we have summarized many of these actors and have highlighted the various types of interaction among them (see Figure 7-1).

This is a governance structure in the making. Much of the policies on industrial development itself were derived from central government funding. There are also many policy actors now involved in responding to industrial policy, and there are multiple interactions between these and all the organisations in Figure 7-1 (to maintain the clarity of the diagram, the web of interactions is not shown). These include universities, city governments, and industrial R&D institutes.

Figure 7-1 Simplistic diagram of governance for regional and industrial development policy in Gyeonggi province



Sources: own creation.

Figure 7-1 portrays two distinct strands of policy interaction in an overall pattern of policy linkage. The Gyeonggi provincial government acts as a bridge between the groups of GSTEP and Gyeonggi Technopark. One strand shows links between the national area of the Gyeonggi Technopark, the Ministry of Knowledge and Economy, national research institutes, Hanyang University, and Ansan city government relationships that have existed

for a long time. Gyeonggi Technopark's role, with a long and rich tradition, tends to enjoy a higher status, as measured in terms of local SMEs' interaction. The case study suggests that technology development policies initiated by the Ministry of Knowledge and central government in the region where Gyeonggi Technopark enjoys a high status have been meant to respond to pressing economic challenges, such as adjusting the training supply to the SMEs' needs for a productive structure (Section 5.2.2).

Another strand shows the link between the GSTEP and the regional actors in Gyeonggi province and other regions of the IMT network. The GSTEP played a role in opening the new path of innovation through funding, legislation, and leadership in the region. An advantage of initiating the innovation process through a bottom-up approach is the crucial role that the regional authorities and SMEs have played in initiating the innovation activities. The political leadership of the provincial government has been effective in bringing the different actors together, and it has been a key force behind the creation of the GTDP and their policies (see Section 6.1). Legislation and funding from the provincial government drove and supported the institutional arrangement initiated by the creation of the new regional programmes, though the GSTEP is also a relatively recent and perhaps under-appreciated phenomenon.

What can we say about the relationship (the dotted line in Figure 7-1) between these two policy actors? Are they integrating or conflicting? The answer is a bit of both. On the one hand, from a broader and longer-term perspective, there appears to be substantial policy integration. Some of that congruence is derived from the economic enhancement of industrial policies. Such economic enhancement can, in turn, lead to the enhancement of regional policy objectives, as mentioned at the outset of the RSI. On the other hand, the two policy actors are not so well aligned in the short term. The newly established GSTEP not only addresses deficits regarding industrial policy, but also takes on functions formerly performed by Gyeonggi Technopark, creating an overlap that can be a source of conflict.

Moreover, the organisational overload associated with the new policy initiatives raises questions about the extent of coherence of the RSI itself, let alone coherence with other policy areas.

Although there does not seem to be serious conflict, tension can be observed. We found a strong debate between the GSTEP and the Technopark resulting from policy actors finding themselves in redundant and possibly ambiguous positions. There is an ongoing debate about “too many policy actors” in the industry policy field. From the point of view of integration between the two actors, it can be observed that the GTDP have still not been fully understood, accepted, or adopted by Gyeonggi Technopark. These views were reflected in the comments of a number of those interviewed, with the specific issue of wasted resources being highlighted:

There are no agreements with regard to the integration of different programmes between different actors. This is rather arbitrary, and it happens that you look into other databases, and suddenly see a firm with the same title and with the same programme that has already been applied. (Interviewee 4)

The regional network of technology development and innovation support is organized around Gyeonggi Technopark and industrial districts and some cities; however, the networking is rather low between the various types of actors, and there is no coordination in their activities. This deprives the region of synergies and results in overlapping. (Interviewee 11)

These interviewees’ argument is that this overlap reduces the effectiveness of regional resources and does not facilitate the regional growth. This opinion was frequently expressed in the interviews with participants from Gyeonggi Technopark and nationally funded research institutes. In particular, interviewees from the Technopark did not hide their disapproval of the GSTEP’s style:

There are overlaps, which one could transfer from completion into cooperation. It really concerns the interfaces, which are often not sufficiently clear. And there is always an intersection, which is covered by both organizations at the same time (interviewee from the provincial government. (Interviewee 13)

Too much is duplicated here. For instance, a different initiative and a different actors work on the same programme as we do, sometimes without knowing about it. I see a further weakness in that we are often in danger of losing the practical relevance. Programmes are too theoretical and too scientific for our clients and too abstract for SMEs. They often do not understand what such a network can actually offer them. The practical relevance is often already lost because the language of SMEs is not used. (Interviewee 12)

Specific arguments arose due to a dispute over the provincial government's budget for the fiscal year 2008 when Gyeonggi Technopark was asked to present a discussion for reform before drawing up its budget plan. Because Gyeonggi Technopark is receiving reduced funding from the provincial government, there had been animosity between the officials in the Technopark, and there was a tension between them.

Compared to last year (2008), our budget this year (2009) has decreased. Budget falls in the 2009 budget amount to 8000 million KRW. Last year the funding was 5000 million KRW. The series of programmes most likely still to be the same as last year. It is a bone of contention. (Interviewee 6)

The responsibility for urban development and the upgrade of the industry remains divided between different administrations, and this fragmentation of management, frequently exacerbated by the political tensions of level of administrations, may lead to incoherent and uncoordinated economic development. (Interviewee 20)

One interviewee reflected that the terms 'conflict' or 'tension' are themselves generally regarded as "arm wrestling" (Interviewee 42). This interviewee suggested that this sort of relationship is healthy, as it contains a vital element of challenge, and serves to nurture an improved understanding and awareness of regional objectives, which in turn, can lead to fresh ideas and a united and focused move forwards. The findings also suggested that the majority of interviewees did respond positively to the conflicts.

The GSTEP and Gyeonggi Technopark are two key neighbouring regional authorities, which benefit from good relations as well. But their good relationship does not mean that their programmes and goals are identical. Therefore, their perspectives on regional developments are different. Gyeonggi Technopark has preferred to stay quite consistent in terms of its official announcements in regard to the national developments. Therefore, it seems that Gyeonggi Technopark's strategies in the region are to some extent in line with those of the central government. But the GSTEP's views are very different. Their positions in regard to the regional

developments are not the same either. The GSTEP's stance in regard to Gyeonggi province is surprising, even to Gyeonggi Technopark as well, since these two players had extended their relations to a strategic level, and their past conflicts seemed to have been over. Gyeonggi Technopark has changed its strategy in regard to SMEs; it has opened its programmes to the GSTEP and is even talking about the necessity for reforms in Gyeonggi Technopark. Gyeonggi Technopark is trying to turn into a new model of policy and governance in the region in order to increase its bargaining power with the GSTEP. (Interviewee 42)

It may seem a paradox that while many interviewees explicitly addressed the 'governance' implication of industrial policy and regional development policy, they also indicated the democratic dilemmas raised by the development and implementation of regional policy in terms of conflicts between national and regional objectives.

For this reason, the Committee of Economy and Investment of the provincial council made emphatic calls for policy integration between Gyeonggi Technopark and the GSTEP (Gyeonggi Council, 2010a: 21; 2010b: 34). Calls have been made to avoid such fragmented decision making by integrating different but interrelated policies (Gyeonggi Council, 2011: 4). These calls are coming at a time when decision making is facing increasing complexity as a result of various concurrent trends. Some of these trends are toward globalisation and the re-centralisation of decision making in regional policy, whilst other trends are toward fragmentation and the devolution of decision making. A variety of factors have increased the number of actors involved in the policy process, such as the emergence of the regional actors in the decision-making process. It makes policy integration increasingly difficult but more compelling to achieve.

While Cooke et al. (2004: 11-13) addresses more explicitly the 'governance' implications of the RSI conceptions, it would seem that there is substantial political tension between the Technopark and the GSTEP arising from actors in the latter viewing the Technopark as being insufficiently responsive to local needs (particularly SMEs). It also seems that this tension is heightened by overlapping responsibilities and is amplified by the declining



provincial support for the Technopark. In practice, however, these actors need to co-exist. If they fight too much, the political authorities will intervene to 'sort them out' in ways that might be to neither of their liking. Hence, they must be seen to be 'playing nicely' together and to work out ways of co-existing. In terms of governance, this does not suggest a smooth or complete devolution of authority to the region; however, nor does it suggest that the central government is in complete control of developments.

This issue is about the interactions of politically legitimate bureaucratic players – each group draws from a somewhat different idea of legitimacy: the centre draws from the overall development goals of the country (which it may get wrong by being too redistributive), and the province draws from the needs and aspirations of its local constituents (who are likely to argue that they are engines of national economic growth and competitiveness in light of their size and contribution). Thus, we will explore Gyeonggi Technopark and national agencies' response in the next section.

## **7.2 National agencies' responses to the strategic actions**

In 2009, Gyeonggi Technopark proposed to strengthen its role and to secure more provincial budgets to help firms with more supportive policies. It raised awareness of firms' specific needs, so that more customized support could be delivered.

### **7.2.1 More strategic policies**

Confronting budget challenges, Gyeonggi Technopark is under pressure to focus on immediate needs at the expense of investments. Thus, in the Technopark, there has been a substantial improvement in the business support programmes.

At first, the 'techno-doctor' programme seems to be a technically supporting programme to help firms that have a difficulty in hiring high quality human resources. The programme focuses on the technological disorder of firms. 'Techno-doctor' may refer to scientists who are specialists in their fields and/or technology experts who specialize in operating technology.

The rationale is that the techno doctors are directly involved in the delivery of the technological difficulties, and thus have a greater knowledge and understanding of the client or service-user needs and of the market for that service. The techno-doctor unit provides an overarching coordination role, including assisting with new product development, providing advice on technological difficulties, and monitoring performance. Thus, as one interviewee put it, the techno-doctor performs a "supportive role and a centralised function that people can dip into as and when required" (Interviewee no. 6).

Gyeonggi Technopark set up 500 techno-doctors to deal with technological advice. More than 300 firms received support from a techno-doctor in 2010 (Gyeonggi Technopark, 2010: 61). For example, a small-scale turbine manufacturing firm, ATT Co., possessed core techniques for wind turbine development in the renewable energy sector. Facing difficulties in developing smaller advanced generators, ATT was able to receive a technical consultancy from a techno-doctor, and research and development has subsequently accelerated. An interviewee at ATT said that this support had helped them to concentrate on technology development (Interviewee 22). Another interviewee described the activities of the techno-doctor service.

We have very devolved structure, so we have a range of expertise to support business. So, whether it's new product development, solving a technical problem, or simply driving internal efficiencies, our team can respond to any business challenge, and we can also assist in directing you to appropriate funding programmes that might be available. (Interviewee 11)

Another new policy is the 'Green-All programme' to help firms obtain a 'Green Certificate' from the central government (Jones and Yoo Byungseo, 2011). The Green Certificate is a national certification system certifying a green technology or a promising green project to clearly stipulate the object and scope of supporting green investment and to concentrate on investment as part of the Lee Myung-Bak administration's Green Growth policy in 2008.<sup>79</sup> When Lee Myung-bak's administration was inaugurated in 2008, he hailed 'low-carbon, green growth' as the nation's new guiding economic development agenda, stressing that environmental stewardship can be an engine for economic growth. The certificate holders were rewarded with 50% money back off the registration fee and 1,000 USD marketing subsidies.

The nation's move to adopt an international standard is aimed at garnering businesses interest and recognition from eco-conscious businesses oversea. Gyeonggi Technopark argued that local firms need to get a certificate for their products if they wish to outperform in the global market.

Because the export market is so important to us, it is vital that we continue to develop the Green Certificate scheme in a way that is consistent with international standards. (Interviewee 12)

Gyeonggi Technopark supported the initiative by offering consultations, arranging meetings with experts for documentation, and covering the costs of the application for this certificate. Before starting the service, Gyeonggi Technopark employed this businesses support programme to hint that this and other services could be accessed with

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<sup>79</sup> There are three types of green certification, namely, green technology, green business project, green company, and these three types are categorized evolutionarily. For green technology certification, the MKE has chosen 10 categories of technologies, in total, 1,263 technologies. For green business projects, 9 categories and 92 projects have already been chosen for the support; and for green companies, the threshold is 30% of the revenue, which should be obtained from green technologies or projects (see more [www.greencertif.or.kr](http://www.greencertif.or.kr)).

a single phone call. One of the interviewees described the significance of this to the Technopark's outreach efforts:

We tried to find our new role. While the government took two years to make the enforcement ordinance after the president's proclamation on green growth, we prepared to set concrete plans for practising the initial concepts. Implementing a new programme for regional SMEs right after the issue of an ordinance needed a lot of preparation time for planning. It was difficult and time consuming for us, but it was the best way to gain an advantage in the competition. We had never had any experience related to green technology services before 2010. We tried to take an initiative to lead green technology services in Gyeonggi province. Our strategy, which Gyeonggi Technopark chose, was to maximize the pre-existing service resources, utilizing expert pools for consulting services and the techno-doctor program for helping firms out with providing technical solutions. Since holding intellectual property rights was one of the pre-requisites for earning green certification, we let more firms access useful consultations and services from our IPR team to earn patents. Combining pre-existing services and new ones, we created a brand-new service program; the Green-All programme became the first green support activity in the region. Planning took several months, but the service started in May 2010, only one month after the announcement of the enforcement ordinance. (Interviewee 11)

Consulting was provided on 93 cases as of the end of 2010. When the cases needed more specialised inputs from expert consultants, each case was sent to experts so that the firm could find better ways to earn the certificate.

### **7.2.2 Linkage with proximate national agencies**

Gyeonggi Technopark tried to build national agency partnership in the Ansan area. In 2009, it was given its current name, Ansan Science Valley (ASV), in order to further promote joint research and cooperation programs for science and technology development.

This effort was undertaken in conjunction with Hanyang University, which conducts basic research, and several other research institutes (i.e. Korea Testing Laboratory (KTL), Korea Institute of Industrial Technology (KITECH), Korea Electric Research Institute (KERI),

Hanyang University, LG Parts and Materials Research Institute, and the Rural Research Institute.

Table 7-2 Ansan Science Valley (ASV)

Actor	Specified area	Researchers	Type
Gyeonggi Technopark	Information and communication/electronic, automotive, bio-technology, robotics	49	Public
Korea Institute of Industrial Technology (KIIT)	Robot technology, textile materials	170	Public
Korea Testing Laboratory (KTL)	Quality certification, standards, instrumentation, test and evaluation, education and training	140	Public
Korea Electric Research Institute (KERI)	Convergence technology division	124	Public
LG Parts and Materials Research Institute	Electronic and material parts	293	Private
Hanyang University ERICA Campus	Basic sciences, humanities and social science	250	Public
Rural Research Institute	Research institution affiliated with Korea Rural Community Corporation; technology development required for the public role of agriculture and fisheries, rural areas Supporting national agriculture and fisheries, rural policy	191	Public

Source: Gyeonggi Technopark (2010: 67)

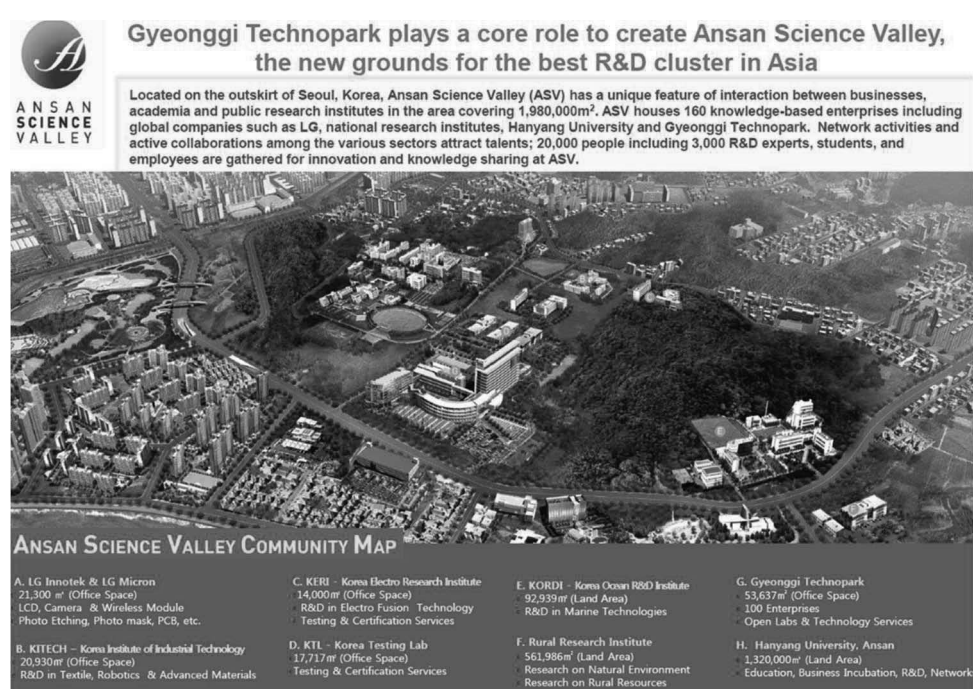
There are two features of ASV. First, ASV is a partnership of national agencies. Monthly meetings are held among members of ASV to discuss issues pertaining to the cluster and to the region, and to explore new service programmes for the members and local SMEs. It is worth mentioning that an interviewee who had worked as the first chairman (1999-2010) at Gyeonggi Technopark shared the initial reasons regarding the linkage with national agencies. The following quotations illustrate his concerns:

Working with other national agencies is the perfect link for us, so we can further develop cutting-edge technology support to grow firms. Being based at the Ansan Science Valley –which is within such close proximity – has enabled us to form this partnership. (Interviewee 6)

Second, ASV is supported by Ansan city government. In 2010, the Ansan government secured some funding to activate ASV community joint programs in networking, information exchange, consulting and education.

ASV has allowed us to increase our role much faster and to expand into all area of Ansan city and Gyeonggi province. Several programmes have also been created, and the Ansan city government has been supportive of the programmes and is pleased to be helping a local business, which was born and bred in Ansan. (Interviewee 17)

Figure 7-2 Ansan Science Valley (ASV)



Source: Gyeonggi Technopark (2011: 10)

### 7.3 The political sources for continual tensions

While sections 7.1 and 7.2 have discussed the interaction experiences of the regional actors, this section focuses on the important discussion on what may have influenced the way in which fragmented relationships take place in the industrial policy process in Gyeonggi province.

Three main political factors can be blamed for the continual tensions to date. One is the political party incongruence. The emergence of party political differences in the composition of the government and council after the elections in 1995 provided an opportunity to examine whether the relationships between units of government have changed as a consequence. Another source of tension is the financial issues that had pushed regional policy toward becoming less proactive. Third, occasionally, there are unbridgeable conflicts between provincial governments. These political sources have contributed to the continuing tensions in the system of innovation of Gyeonggi province.

### **7.3.1 Political party incongruence between provincial government and the council**

The provincial councils could be described as the weakest element of South Korea's regional politics. Just as the president dominates the legislature and the national bureaucracy at the national level, so the governor tends to dominate the provincial council and the local bureaucracy at the regional level. The national government is not beholden to a narrow group of interest.

Similarly, the provincial government is relatively independent of provincial economic and social interests. With no powerful rivals in the local political process, the governor appears to be able to hold power with a certain amount of central control (Hwang Ah-Ran, 2006).

This does not mean that regional issues are never relevant in local elections. Rather, it underlines the fact that being a candidate of a provincial hegemonic party greatly affects the governor's chances of winning the election. As regional elections are used to pass judgment on the central government, electoral outcomes rarely reflect the performance of a party in power locally. The governor and the council members are popularly elected through partisan ballots. Thus, the structure of provincial government primarily embodies the principle of political accountability. In contrast, the rest of the local officials are not

elected but, instead, are appointed based on merit. The provincial bureaucracy, which has long developed professional norms of administration, is the core of provincial government. Hence, we can say that the structure of provincial government embodies the principle of administrative efficiency as well.

The system of regional politics maintains a strong governor and a weak council. The governor and the local council officially share budgeting, legislation of ordinances, and other policy making. However, the power of provincial government is organized in favour of the governor over the local council. For instance, the governor has the authority to appoint local bureaucrats, to submit a budget of expenditures and revenues, and to veto ordinances passed by the provincial council.

Table 7-3 Party distribution of provincial council in Gyeonggi province (1995-2014) (Seat won, %)

	1995	1998	2002	2006	2010	2014
GNP	62 (45.5)	38 (39.2)	90 (86.5)	115 (96.6)	42 (32.1)	50 (39.0)
DP	52 (38.2)	58 (59.8)	10 (9.6)	2 (1.7)	76 (58.0)	78 (60.9)
Others	22 (16.2)	1 (0.0)	3 (2.9)	2 (1.7)	13 (0.1)	0 (0.0)
Total	136 (100.0)	97 (100.0)	104 (100.0)	119 (100.0)	131 (100.0)	128 (100.0)
Provincial governor	Lee In-Jae (GNP)	Lim Chang-Yeol (DP)	Sohn Hak-Gyu (GNP)	Kim Moon-Soo (GNP)	Kim Moon-Soo (GNP)	Nam Gyeong-Pil (GNP)

Note: Most political parties have recently adopted new names. In this thesis, these recent names are used, even when we refer to earlier periods when the parties used older names.

Source: Gyeonggi council website ([www.ggc.go.kr](http://www.ggc.go.kr))

However, in all the local elections since 1995, a majority of the electorate voted for parties that were identified with their regions of residence, namely, their hometown parties. As shown in Table 7-3, in the Gyeonggi province, which has been a stronghold of the GNP, the vote share of the elected governor was 40.6% in 1995, 58.4% in 2002, 59.7% in 2006, and 52.2% in 2010. These voting patterns amply illustrate the significant influence the major national parties have over local elections. To a large extent, local electoral accountability appears to be very limited. Since party labels are generally important for



mobilizing votes, independent candidates cannot compete effectively with party candidates.

The provincial council was convened in 1995 with 136 members comprising 123 district representatives and 14 proportional representatives elected from 31 cities and counties; it engaged in legislative activities. The next council first met on July 1998 and served until June 2001 with 97 members.

Council members went unpaid for 15 years after the nation revived the local autonomy system in 1991. This changed in 2006 when they began to be paid for their activities. The stipend system was intended to enhance their capability as the guardian of grassroots democracy. In 2006, the GNP won the local elections with a landslide victory, gaining 11 of the 16 large city mayor and provincial governor seats, including Gyeonggi province.

However, in the 2010 election, which was widely seen as a mid-term assessment of the Lee Myung-Bak administration, there were 76 members from the Democratic United Party, 42 from the GNP, 2 from the Nation's participation, 1 from the Democracy Labour Party, 2 independents, and 7 academic members. These 131 members made 11 standing committees, and they were in government until June 2013. The Democratic United Party, the most important opposition party, reacted strongly against Governor Kim Moon-Soo's proposed policies and budgets.

Gyeonggi province has been a stronghold repeatedly of the conservative GNP between 2002 and 2010. Kim Moon-Soo, a member of the GNP, became the governor of Gyeonggi province with 52.2% of the votes, while Rhyu Si-Min of the DP had 47.8%.<sup>80</sup> During the Gyeonggi province election campaign, Kim Moon-Soo promised to help firms by offering direct technology support. His strategy was to win voters with calls for administrative

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<sup>80</sup> The Participant Party is a recent political party founded by members of former President Roh Moo-Hyun's administration. It has since attracted a large following on the internet and among the younger generation. Rhyu Si-min was elected as Party Chairman in 2011.

stability to aid economic recovery. The defeated candidate of the DP, Ryu Shi-Min, focused on economic inequality and the social integration of the people in the province (*Ohmynews newspaper*, October 5, 2010).

In provincial council elections in 2010, the trend was, however, not so smooth. For the DP as a whole, the election represented a clear comeback. The DP faced the challenge of consolidating the opposition on the basis of the election victory. If it could achieve this, the DP would emerge with a good position regarding the next elections. Because the local elections are ultimately closely linked with the presidential election, only through winning the provincial election would it have been possible to win the presidential election in 2012.

During the fieldwork, the central question at the heart of the continuing debate about the industrial policy was as follows: What is the proper balance between the nation state's interest in achieving consistency in state-wide policy and a regional authority's interest in establishing a level of service and activity that meets its needs? There is clearly an inherent tension between the goals of increasing accountability at the provincial level and maximising equity in the allocation of resources for the nation state as a whole.

### **7.3.2 Financial pressures on strategic action**

Second, one of the most controversial issues since the founding of the GSTEP and its strategic actions has been the way in which it devises the regional budget. Interviewees highlighted the importance of efforts to engage with the GSTEP and provincial government as part of the systemic change. However, regional political systems have a four-year election cycle. This can encourage a short-term outlook from the provincial government, and it makes it difficult to garner support and funding for an innovation process.

This is the most obvious source of continuing tension in Gyeonggi province. A lack of funds leads to serious communication problems. Gyeonggi province is one of the richer regions in South Korea. However, the scope for fiscal action has recently encountered limits.

After the local elections in May 2010, the provincial governments were faced with significant reforms to the regional budget. In Gyeonggi, the provincial council was strongly committed to deficit reduction, principally through cuts in spending on technology development. Some areas of spending, such as the welfare and education, were relatively protected from cuts. Others, particularly, the GSTEP and Gyeonggi Technopark, were key targets for spending cuts. Members of the provincial council considered that the provincial government could make significant savings.

The provincial council's annual inspection was highly critical of the congestion and competition in the industrial development field.<sup>81</sup> During the audit and inspection of the industrial policies in 2010, council members raised the issue of the GSTEP and Gyeonggi Technopark's programmes that had reformed their business funding considerably. One council member accused the provincial government of pushing for massive business programmes at the sacrifice of firms' interests.

One significant reason for this problem is that a governor was elected by direct popular vote, rather than being appointed by the central government, thus altering the balance of power in the administrative and political arenas. This led the provincial government to establish regional policies for economic development. The work of national and regional administrations was, thus, duplicated and fragmented. (Interviewee 31)

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<sup>81</sup> The regional autonomy of South Korea with shared sovereignty has already been explored in Chapter 4. It is characterized by devolution to the effect that some functions allocated to the regional autonomy are being given the right of autonomous self-administration. However, in reality, the function of the council is very vulnerable. Because of the provincial council's low level of expertise and resources, policy initiatives are likely to come from the provincial government that is headed by the governor.

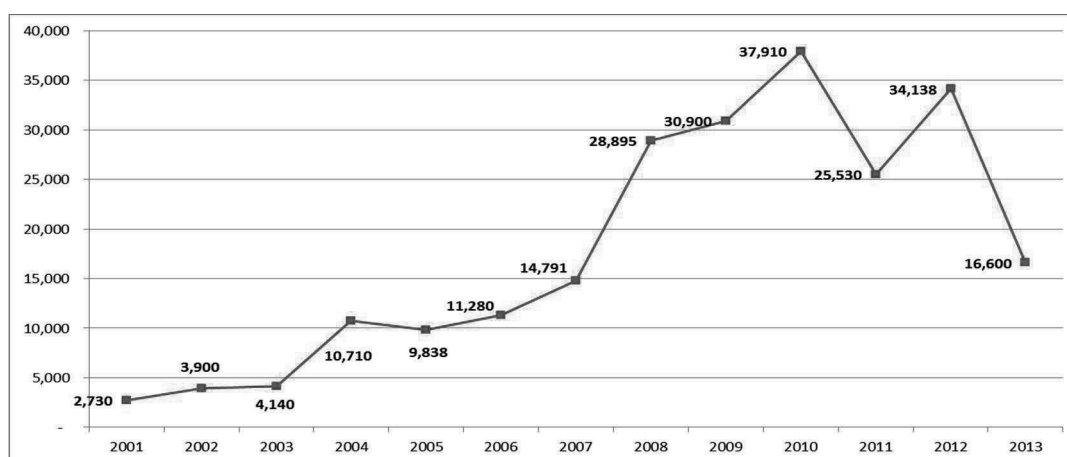
The provincial council's reform measures are expected to add to the difficulties facing policy actors. The reform has had a particular impact on economic policy actors and their strategic actions. Both the GSTEP and the Gyeonggi Technopark budgets have been significantly reduced or, in some cases, cut completely.

Figure 7-3 shows that the GSTEP has faced a very substantial budget decrease since 2010. It received a budget of only 37,910 million KRW in 2010, and the pressures this has produced are set to continue. The result of the local elections of 2010 led to calls for budget cuts in 2011. Politicians of the economy committee reached a compromise to reduce the GTDP budget; thus, the GTDP budget was slashed to 10,000 million KRW. The GSTEP has been considering how to react:

Without the continuing funding, we won't be able to keep up with the schedule of works. (Interviewee 28)

The sharp downward trajectory of GSTEP spending shows the significant financial challenge we have faced over the past few years. (Interviewee 26)

Figure 7-3 The budget of the GSTEP



Source: GSTEP (2014: 23)

In 2012, the GSTEP submitted its budget plan to the provincial council. Even with this supplementary budget, the provincial council had to cancel some GTDP services because of the lack of funds again. The governor then called for the formation of a massive

supplementary budget in 2011. However, council members delayed making a decision because they needed more public consensus before the GSTEP could see an increase in funding, one council member said (Interviewee 31). The province was scheduled to draw up a second supplementary budget in September 2010. Finally, the council approved it. As a result of such factors, which tend to pull and push tensions, change happens slowly.

### **7.3.3 Inter-provincial conflicts: the thorny issue of ‘our region’**

What should not be overlooked, however, is that party incongruence is not the only factor that challenges smooth change within the interlocked structure of RSI in South Korea. Until 1995, the regions were relatively homogenous with regard to their economic and fiscal powers. However, cracks in the system had already started to appear in the 1990s. The growing polarization of the party competition outlined above was accompanied by increasing regional disparities resulting from divergent economic development in the Seoul metropolitan area (Seoul, Incheon and Gyeonggi province) and other provinces.

Particularly, increasing budgetary constraints meant that regional policies turned into a more conflictual issue, especially with regard to the balanced development scheme between the rich and poor provinces (Interviewee no. 15). Political devolution in 1995 could thus have provided the necessary window of opportunity for an encompassing reform of the constitutional structures. Yet, although central government shouldered the main burden of the financial support for the regions, the balanced development policy was not able to prevent regional disparities from widening further, and South Korea became polarised between a ‘rich Seoul metropolitan area’ and a ‘poor other provinces’.

While party conflict and government incongruence continued to have a great impact, the deepening of the territorial rift developed into an additional major disruptive factor regarding the policy coordination required to produce a consensus.

The provinces not only have to be able to coordinate their own policies; they also have to be able to come to strong consensual decisions to maximise their collective influence. Such agreements can be based either on a party or on a territorial logic. The intensification of regional conflicts has made agreements along the lines of regional interests increasingly difficult, but it has also affected intra-party coordination. Because of the deepening regional rift, party organisations at the provincial level have had to adopt province-specific policy positions, and politicians (in both the provincial government and council) are increasingly prepared to advocate their regional interests even against their own national party. As a result, coordination within the parties – both horizontally between the provinces and vertically between the provinces and the central level – has become more difficult, and the ability of the central government to integrate interests and defuse conflicts throughout the system has weakened.

#### **7.4 Concluding reflections**

Drawing on data from interviews and documents, this chapter has described recent trends and events in the industrial policy in Gyeonggi province. In so doing, it has demonstrated that Gyeonggi province has tended to reproduce the political sources of the RSI. Ideas about what is hidden behind the tension in dealing with the complexity of the industrial policy context have been presented.

From the perspective of the system of innovation, the future of the RSI in Gyeonggi seems to be inextricably linked to the building of relationships, including the different levels of the public actor and the organized segments and interests of groups of private actors. Yet the central government has not completely retreated from the interventionist role. For example, in the process of structural adjustment, the central government opted for traditional methods rather than liberal market measures.

This chapter has operationalized the theoretical framework of the strategic relation to the policy analysis of the industrial development in Gyeonggi province. The aim was to add theoretical and explanatory depth to the previous description of industrial policy and the regional system of innovation.

In doing so, the demise of the particular form of South Korean development has been captured not in terms of the demise discussed in the existing literature (Chapter 2), the theory of which ignores critical aspects of power relations and thereby distorts the nature of the state, but in terms of the change in the way national state-province relations are organised. The change was conceptualised as a transition from the *dirigiste* settlement, in which the operation of industrial development largely relied on political regulation, to a somewhat different composition, in which the policy process is more regionalized on the basis of regional control.

Coordination between the provincial government and council is regarded as problematic because of political party incongruence. The structure of politics in Gyeonggi province demonstrates “vertical” (central-provincial) and “horizontal” (inter-provincial) incongruence, despite the presence of national parties with close organizational linkages between provincial levels. The governor, a member of the GNP party, is a powerful actor in Gyeonggi province. However, the GNP is unable to obtain sufficient seats in the provincial council to have a dominant position. The problematic nature of relationships delays or prevents the rationalization of industrial policy in the policy areas of territorial planning, economic development, and technological development. A similar reasoning applies in the case of inter-provincial relationships and consultations, whose outcomes remain under question.

The nationalized nature of industrial policy decision making in South Korea seems to be struggling to digest regional development in the region’s wider area because of the

dispersal of power and responsibility and the lack of consensus within and beyond the boundaries of state apparatus. In so far as challenges such as these remain unaddressed, repercussions from the absence of a strategic vision cast a shadow over the actor's perceptions about the future of regional development.



## **8 Concluding and theoretical reflections**

This chapter concludes the thesis. Firstly, key findings of the thesis are summarized in the light of the research questions identified in Chapter 1 and after reviewing the theoretical perspectives presented in Chapter 2. Secondly, this chapter then highlights the originality and importance of the research undertaken in terms of its contribution to academic thinking. Finally, based on the findings in this thesis, possible areas of future research in terms of practice are identified. The chapter concludes by arguing that power and the political dimension need to be considered as a dynamic process as part of the innovation system in the post catching-up economy.

### **8.1 Research questions revisited**

#### **8.1.1 Theoretical framework**

Change or transition has been an emerging part of contemporary RSI discourse. Much of the literature on RSI has remained strongly focussed on regional trends and realities. Contemporary challenges to this approach have, in turn, been largely preoccupied with the influence of globalisation on the potential for regional mobilisation.

A RSI comprises the relations between the knowledge generation and diffusion subsystem and the application and exploitation subsystem, in which the provincial government is an emerging policy actor linking both subsystems. The recent industrial policy initiatives in South Korea promoting provincial government aim to fill the gap between these subsystems. This has required a new form of intergovernmental relations as part of the change of RSI of the post-catch up economy.

Based on the existing literature, this study has provided a detailed narrative of research findings concerning the following questions: *How can a major change in the regional system of innovation be identified and characterized? Is it possible to distinguish between change as an emergent process (not attributable to any specific actor) and change as being “directed” (principally controlled by a single actor or groups of actors)?*

We then introduced the four empirical research questions that guided this study: *First, what was the relative importance of the different factors that may cause changes in the regional system of innovation in the case study at hand? Second, are the initiating actors trying to change towards a more regionally networked system in a coherent way, or are contests over purpose and method protracted? Third, what conflicts has the initiating actor (either central or regional) encountered in the course of change, and why do these arise? And fourth, how have these conflicts been overcome or persisted in the regional system of innovation to date?*

Using the directed and emergent alternatives in analysis is useful, since it often seems that the directed approach has an overpowering status in new initiatives, particularly in a Korean context. A blueprint future is easier to pursue using a relatively *dirigiste* system. However, such directed approaches are being modified by the rise of a more open system of knowledge exchange and a more decentralized political economy. This has been a particularly remarkable feature of the political economy of many countries in recent decades, and Korea is no exception.

The concept of the strategic relational perspective was introduced in Chapter 2 as a main analytical tool to be employed in this thesis. The strategic relational perspective acknowledges that structure and actors are interdependent and can transform each other. Relation as power is seen as a dynamic process rather than as a static structure. This conceptualization of relation can be applied across subnational scales linking regional and

national dimensions, and this can be applied over different historical times. Therefore, the strategic relational perspective to relations constitutes a theoretical perspective that can be applied both regionally and historically.

This thesis identified a paradox about the role of central government in regional development. Central government is seen as a central part of an industrial policy and regional development policy in the developmental state. But it seen to have difficulties in coordinating regional strategies in the 21st century.

Political relationships between central government and provincial governments in industrial and regional development policies have been seen to have grown in South Korea in the past two decades. This growth has been set in the context of wider national and regional policies, the devolution of politics, and existing regional economic disparities. Throughout this study, industrial and regional policies have been found to be historical and geographical accomplishments. Thus, the fieldwork focused on relationships, with some historical background to set the relationships in context.

South Korea's industrial policy and its regional development policy since 1995 have been characterized by the devolution of governance and regionalization in the area of innovation and technology policy. However, it needs to be noted that the policy processes are constrained by tension between national and regional industrial policies. These are the areas where public policy responses meet within the newly emerging organizational fields. In the light of this, new forms of relation in regions can be seen as strategic actions taken by provincial governments in response to the new opportunities and constraints perceived by regional actors as structural factors.

Focusing on the development of industrial policy in the case of Gyeonggi province in South Korea, this thesis aimed to reflect on the process of change from a nationally directed

development to a growing interest in the regional dimension in a post catching-up economy.

### **8.1.2 Empirical findings**

Chapters 4, 5, 6, and 7 provided an empirical insight into the development of relationships as strategic actions between actors as can be seen in South Korea, which was set against the concept of the regional system of innovation.

Chapter 4 recounted the background or established the history by which fully-fledged regional autonomy elections were held in 1995, establishing the first substantial provincial government and council in the history of South Korea. However, the traditional and historical political structure remained characterized by the interventions of central government, the subservience of local authorities to central control, and the allocation of resources by the central government.

In Chapters 5, 6, and 7, the specific case of one particular region, Gyeonggi province, was examined. Chapter 5 revealed that structural factors, such as metropolitan management plans, are crucial in the policy processes in Gyeonggi province. It showed how national policies seeking a redistribution of industrial and innovative activity have created delays and coordination problems. In every region, the institution of Technoparks appears to be emphasising the role that they can play in regional development, but each region differs in terms of the emphasis and the resources available for industrial development. Gyeonggi province is characterised by the rapid development of more advanced knowledge infrastructures within the region. Chapter 5 delineated the points of congruence and distinction between industrial policy and regional development policy. The emergence and development of recent relationships in the governance structure of the RSI in Gyeonggi province provides empirical evidence demonstrating that the rhetoric

of devolution has some basis in reality, but also involves a more complex transition and accommodation path than might be suspected from reading the statement of government intent regarding devolution or 'local authority.'

Chapter 6 revealed that agential factors had a substantial impact on the development of policy making and implementation in the regional industries. Local firms came together in networks to create and shape other networks, such as IICC. This network is of strategic relevance, and it increases the opportunities for innovation actors in the region. It positively influences outcomes by managing the assignment of roles to complementary actors and by reducing uncertainty and ambiguity. Additionally, several different forms of committees, working groups, commissions, and boards were seen to have been formed and durably installed with the aim of including external competences, including those of experts and key actors not directly involved in the regional partnership. The specific role of the GSTEP for promoting local economy development was shown to be a reflection of the articulation of local needs and hence to be responsive to the local political representation, since the GSTEP is organised and managed by the Gyeonggi provincial government.

The positive performance of the GSTEP can be seen as a political achievement of the locality. From the viewpoint of some actors, regional interest is the primary consideration when making economic strategy and policy – and this is a source of tension between national and local administrations. The virtues of the localisation of control over innovation and technology policy include prioritization, one of the most important features for reflecting local interest. A local initiating actor tends to take the local interest as the primary consideration, which causes a number of problems. It leads to tense relationships between actors attempting to implement national policies as the first priority and actors focussing on local needs and interests. As mentioned above, the most

difficult task of networks is the process of balancing different actors' interests and aggregating them to a communally shared position.

Chapter 7 revealed that tensions are the key issue and that the difficulties vary according to disagreements regarding the priority of national or regional interests. The GSTEP asserts that the new initiative of the GTDP is good for technology development for the following reasons: the GTDP will increase public sector efficiency, therefore improving service delivery and regulation, which will create a more conducive innovation environment and greater incentives for firms; regional authorities have better local knowledge and business contacts, making them more able to make locally relevant, appropriate decisions; and the GTDP can reduce the opportunities for corruption, particularly large-scale corruption, which also has a beneficial effect on national economic growth.

On the other hand, each of these arguments has a strong counter-argument as well. There were a number of reasons for defending the status-quo. A national agency, Gyeonggi Technopark, argues that such initiatives can have a negative impact on the regional system: for example, regional initiatives can reduce public sector efficiency. Furthermore, administrative capacity at a regional level is often constrained, with too few staff, inexperienced actors, and, particularly, inadequate financial resources; while regional technology development is reliant on efficient, reliable service provision, for example, commercialization, facilities, and water. As noted above, regional initiatives do not always improve service delivery; while the GSTEP may have better information and accountability pressures, it may be more vulnerable to capture by local elites. This, in turn, undermines effective business development, as decisions are made to benefit certain actors rather than to promote general economic growth. Thereby, the GSTEP activities that could benefit economic development, such as planning and regulation, become

ineffective in protecting the national interest and are exploited as regional rent-seeking activities.

This view was backed up by a head of the GSTEP, who added, “The existing regional actors are traditionally not good partners. They only have a ‘one size fits all’ approach across the network. There is a lack of joined up thinking and a history of poor implementation” (Interviewee 1). By contrast, however, a head of Technopark remarked, “We have had close links since the creation of Technopark in 1998. That's not to say we have not had problems, but I think our relationships are better than elsewhere. I think we are more involved in networks than are other actors of the region. Overall, we have good relationships” (Interviewee 6).

We can conclude that at this moment, the paradigm shift in regional policy is not universal; currently, both the ‘old’ and ‘new’ paradigms co-exist in Gyeonggi province, and the growing proliferation of actors can lead to issues of internal coherence.

Furthermore, political party incongruence between the provincial government and the provincial council does indeed raise a number of interesting and, so far, unresolved issues. During the 1980s and 1990s, the development of the regions was highly dependent on such political leaders. Political party congruence in regional and nation levels meant that conflicts between region and nation within the regions remained rare. Provincial government formation was governed by similar considerations to those at national level, and provincial government composition became, with few exceptions, essentially congruent with the pattern of government and opposition at the national level. The latter changed, however, when devolution faced a hostile ruling party in South Korea. Subordinated decisions between the centre and the regions became much more difficult because the ruling parties were no longer congruent. Congruence and incongruence are thus characteristics of politics compared to government at another level or at the same

level. If there is incongruence between levels, some parties find themselves in duplicating and possibly ambiguous positions. They govern at one level and are in opposition at another level, or they govern at both levels with different partners. These ambiguous positions were examined in Chapter 7. Table 8-1 provides the answers to the study's research questions.

Table 8-1 Summary of answers to the research questions

Research questions	Answer
First, what was the relative importance of the different factors that may cause changes in the regional system of innovation in the case study at hand?	<p>Political relationships, whose origin and development depend on the operation of the nation state, are distinguished from those that ensue from working relationships between central government and provincial governments on the basis of a common agenda of mutual advantage. While the former category reveals how each government regulates the planning and implementation of regional development policy, the latter examines the ways in which the provincial policy makers develop relationships with each other and sometimes with provincial governments in order to influence the decisions and practices of the central government apparatus.</p> <p>The dominance of central government and its agencies in industrial policy decision making is undermined by weak coordination and challenges. Similar operational challenges also undermine the efforts of provincial governments. They focus on the enhancement of relational and knowledge resources to influence the policy of central government.</p>
Second, are the initiating actors trying to change towards more regionally networked system in a coherent way, or are contests over purpose and method protracted?	<p>The second question addressed the precise activities of the actor in which initiatives could be designed in a coherent way or a different way. Chapter 5 empirically revealed the emergence of initiating actors and their different initiatives.</p> <p>While numerous central government agencies control industrial policy-related powers at the national and regional levels, provincial governments also have important jurisdictions, which affect the development, promotion, and management of technological development. They call for better coordination and enhanced consultations with local actors as well as for less tokenistic approaches.</p> <p>New initiative exacerbates conflict and reduces cohesion as it leads to scenarios where the GSTEP are established along regional lines and continue to mobilise regional identities to consolidate their power. This encourages actors to identify with the province rather than with central government, and fosters genuine differences between provinces. Regionally established GSTEP's incentives lie in defending regional priorities, thereby deepening policy polarization and rifts with Technoparks.</p>



Third, what conflicts has the initiating actor (either central or regional) encountered in the course of change and why do these arise?	<p>There is a disparity between the strategy posed by the rhetoric of politicians and the tactics employed by state actors regarding industrial development in Gyeonggi province and the improvement of governance procedures. Provincial government and policy-makers seem to grasp the interest of solidarity as a means of improving their influence on RSI.</p> <p>Despite the lack of integrated efforts, there is consensus on the necessity for industrial policy to be adequately integrated into regional planning and economic development as well as to become the subject of targeted marketing and systematic management. However, a lack of consensus is exhibited in policy aspirations and perceptions between levels of administration about the impacts of regional development.</p>
And, fourth, how have these conflicts been overcome or persisted in the regional system of innovation to date?	<p>Despite the lack of potent and systematic policy networks between central government and provincial government as well as conflicting perceptions each has about the roles of the other, there is a growing understanding about the importance of partnerships at the provincial level.</p> <p>Despite the lack of an explicit vision, there is potential for strengthening collaboration (see previous answer).</p> <p>It seems, however, that any effort at the regional level might be fruitless without the contribution and coordination of provincial council in regional budget.</p>

## 8.2 Discourse and conflicts in a case of Gyeonggi province

We have examined these developments through the lens of the strategic relational perspective of Jessop (2008) and Hay (2002). Such an approach is useful for examining the interactions and power relationships between actors with an interest in policy strategy and for characterising the evolution of such relationships.

This study gathers together data from diverse actors in the area of industrial policy as well as from political actors. By so doing, it sheds light on the nature of political relationships and illustrates the complexity of industrial politics in Gyeonggi province. The resulting interpretive account represents more than an assessment of the changing roles of actors, such as central government, provincial government, and political actors. What this thesis demonstrates is how actors, interactions, and industrial policy together shape RSI within the politics of regional development. In addition, the discussion from theoretical

perspectives explains why the industrial policy is susceptible to the preservation or transformation of RSI.

It is not easy to draw out any implications that an analysis of change process may have for the region's current dilemmas. It has been emphasised here that there is no single coherent pattern of change in the region. Change is a highly complex and patchy process, which in many cases has taken decades rather than years. Gyeonggi province is clearly no longer exclusively a 'nationally driven RSI', and the catch-up imperative has ceased to dominate industrial development efforts. This has heightened and broadened the potential for political factors to influence the future development of policy governance in the region and, more generally, in the nation.

In this respect, the strategic relational perspective guided the relationship through its particular viewpoint on the dialectic of structure and agency. Crucially, a conceptual scheme substantiated the assumption underlying our effort to bridge the study of regional politics with contemporary themes of innovation studies (Steinmueller, 2013: 161). The intent was to build a broader relational perspective as a key feature for examining the elements and processes of the RSI, and this is the central contribution of this study to the innovation studies field.

According to the RSI and the rationale of the strategic relational perspective, the multi-faceted ensembles of industrial politics are expressed. On the one hand, place-specific contexts emerge from the interaction of agency and structure, which span across policy areas, levels of government, groups of actors, and forms of resources. On the other hand, the attributes embedded in the same context are recursively seen as the outcomes of past development and the engines of further change. Thus, the perceived contribution of the relational perspective increases while clarifying the multi-faceted and shifting nature of politics in an RSI.

In short, the theorization of the strategic relational perspective enabled this study to advance the exploration and interpretation of themes and concepts of political science in the research area of RSI. Regarding the case of Gyeonggi province, emphasis was placed on the coupling of actors and provincial councils within South Korea. Hence, the strategic relational perspective uncovered how the constitution and iterative coupling of ensembles and modes of relationships shaping the regional development in Gyeonggi province outlines a configuration of conflicts, which is not directly understandable without a good grasp of the specific context.

### **8.2.1 Structural and agential factors**

The following structural and agential factors can be identified along with the emergence of strategic actors and strategies. Applying the strategic relational perspective to regional development and industrial policies in Gyeonggi province, there are three important structural factors that influence the recent development of regional and industrial policy, which may lead to the formation of an RSI: first, the important structural factor in terms of the formation of an RSI is the Technopark in each region, with R&D expenditure taking place in local firms; secondly, the recent political processes of devolution in South Korea have influenced the development of RSI; and thirdly, it is important to point out that the Seoul metropolitan regulation promoting balanced development has enhanced the regionalism of policy activities. Regional mechanisms of industrial policy have been set up by the GSTEP with the support of the provincial government

These three structural factors influence the strategic contexts emerging within the policy field of industrial development and regional development, in which a strategic actor at the regional level is selectively interacting with and forming network relationships. In particular, the role of the GSTEP in this process, especially through the GTDP, which have

been promoted by provincial government, has been analysed in this thesis. These processes affect the change of RSI in South Korea. An RSI is constructed through the dialectical and interactive process between structural factors, such as the wider political economy and strategic actions by agent, which, in turn, create governance dimension of RSI. Thus, there is an interaction between structural and agential factors: national policy allowed provincial government to appoint an agency that is devoted to creating new links and strategic networks, which, in turn, influence the structural factors in the regional contexts, and in some of the national contexts.

While this research focus may well represent a long-overdue move away from the nation state-centric approaches that still characterise much of South Korea, it risks drawing our attention away from the legitimacy deficits at the centre that created the opportunities for regionalism in the first place. This study has sought to bring the territorial state back into the analysis by explicitly conceptualising regionalism as the partial rescaling of legitimacy from the national level to the regional scale: 1) The regional policy of the centre is challenged in some way, and 2) the regional scale is seen as a more legitimate or capable representative of the people in this respect.

From this perspective, the regionalist revival in the post-catching up period can theoretically be based on two rationales. First, new challenges to the legitimacy of the central government may have encouraged a regionalist revival in provinces that have traditionally enjoyed a high degree of regional legitimacy. Secondly, an increase in the legitimacy of the provinces as an alternative scale of government may have created support for decentralisation in areas where the legitimacy of the central government has traditionally been compromised. While these two dynamics need not be mutually exclusive, drawing this distinction provides us with theoretically grounded ideal types through which to re-examine the origins of popular demands for greater autonomy in

different provinces and time periods. In order to apply this perspective empirically, however, the concept of political legitimacy needs to be operationalised.

This study not only examined the origins of the regionally networked system, but also explored under which circumstances such popular demands for greater regional autonomy were likely to lead to an actual rescaling of powers and resources from the central level to the regional scale.

In this context, it was argued that a careful analysis of the formal distribution of central-provincial power represents a useful first step in analysing the patterns of policy stability and change. While many of the existing studies into regionalist accommodation and non-accommodation implicitly present arguments in which local actors have a binary choice between accommodation and resistance, the reluctance to explicitly state and justify the proposed distribution of veto powers that underpins this analytical narrative both obscures the arguments and makes it more difficult to test and challenge them empirically. Using the South Korean case as an example, this study has sought to demonstrate that a more formal approach can help us to further our understanding of these processes, even in a context where veto powers tend to be strongly concentrated in the hands of a single partisan player. According to the relational approach to the RSI in Gyeonggi province, there are different empirical points of departure to the investigation of patterns of complexity, fragmentation, fluidity and contingency. This can be a significant contribution particularly to the research regarding RSI, which has not yet witnessed the introduction of theoretical frameworks capable of addressing the dynamic processes of industrial policy.

### **8.2.2 Politics as part of RSI**

This study focused on the emerging regionally networked RSI as constructed particularly at the regional level in Gyeonggi province. These are the areas where politics meet within the RSI. As Chapter 4 showed, the devolution of politics has happened within the wider nation and the development and spread of the neo-liberal economy. All these developments have happened mainly in the last two decades, that is, since the establishment of Technoparks, and other regional agencies; in some regions (Seoul, Daegu and Gyeonggi province), these processes had occurred earlier.

As the account of Gyeonggi province in the empirical chapters has made clear, the region has a distinct regional economy structure and a history of political economy including those in the RSI. There are processes of policy development on a regional basis. Some consensus on what the GSTEP views are has been developing in the region. However, less has been accomplished so far in general long-term or ongoing terms.

In order to make a regionally networked system and to create a regional advantage, longer-term strategic thinking is required at both national and regional levels so that the dynamic change of RSI can be introduced. The creation of industrial policy to integrate the three structural factors identified above is one of the key areas where the GSTEP can play a critical role in delivering regional growth. Policy congruence and joined-up thinking, both vertically and horizontally, seem to be the key. However, in reality, there are acute issues about coordination and about industrial policy at the regional level.

Firstly, there has been a problem of too much short-term funding and too many policy initiatives without much discourse. Secondly, there is conflict and tension in the relationship between the central government and the provincial government. As Chapter 6 discussed, the GRI report suggests that the GSTEP will be given a stronger role in steering the industrial policies. There are voices of concern from the Technopark that the GSTEP

does not have the appropriate experience to influence technological policies and industrial policy making. Thirdly, the formation of regional networks is not without problems. When it comes to inter-regional networks at the regional level between firms and universities, there seem to be some barriers to overcome. Firms have set up local partnerships with their large firms over years as well as forming partnerships at a national level. These existing linkages do not necessarily communicate well with the new network relationships being formed, sometimes centrally by the institutional administrative bodies and triggered by the new government funding initiative and new funding opportunities coming through the Technopark.

These issues need to be located in studies on the changes to RSI, as discussed above. The relationship in RSI needs to be understood in relation to the changing relationship between the regions and the nation state. It is inadequate to pay exclusive attention to the regions as a contrast to nation state direction to account for this new level of governance. There is allegedly an emergence of peer-pressure towards shared perceptions of appropriate roles, funding incentives, planning instruments, and all manner of incentives to lateral cooperation, and this emergence needs to be seen in relation to the diverse activities and missions of provincial governments and their relationships with other agencies in the region. The changing nature of the national political economy, the dynamics of RSI, and the new relationship between them, all challenge current forms of RSI in the fields of both industrial policy and regional development.

### **8.2.3 Tensions between council and government**

In addition, in considering politics in this regional and industrial policy processes, it is also important to consider the changing relationship between provincial councils and

provincial governments at the regional level. The characteristics that weaken the relationship are found between provincial governments and provincial councils. Councils and governments have brought different perspectives to their positions in the council-governor relationship, while politicians have different priorities and values than have professionals.

In the past, however, those politicians who belonged to the same political party tended to have attitudes that reinforced those of the governor. The typical council member was a trustee rather than a delegate or political party member, and was seen as a volunteer who filled the office as a community service worker without a strong interest in a political career. Council members limited the amount of time (four years) they committed to public office and were comfortable referring citizens' complaints to staff. With less political ambition and less attachment to specific issues, there was presumably less competition among the council members themselves.

In the past decade, these characteristics have been changing. Today, more council members are emphasizing the representational rather than the governance aspects of the position and are solving current problems rather than approving solutions developed by a governor.

Recently, the relationship between the council and the governor is commonly the interaction between an 'activist' council and an 'initiator' governor. The governor has always been involved in policy making. Now, however, the governor must not only develop proposals, but must also be more assertive in attempting to focus the council's attention on long-range concerns and in shaping the tone of the policy-making process. Thus, the governor is not just proposing specific policies, but is promoting a perspective and an agenda.



### **8.3 Contributions to the field, and limitations and avenues for future research**

Steeped in the tradition of the political economy debate on post catching-up economy, this study intends to contribute to this discussion by examining the regional system of innovation. This study has examined how a particular type of RSI has been developed in South Korea's regions. Political perspectives have been considered to try to understand RSI as a complex and articulated process of positioning in the post catching-up economy, and this has led to a focus on the relationship between nation state and regions that underpins this process. As South Korea slowly changes from a nation state-led economy with nationalism to a devolving political economy, there have been considerable difficulties arising from the conflicts in matching regional economic goals with broader national blueprints.

#### **8.3.1 Contributions to the field**

This thesis has taken the strategic relational perspective of RSI following the framework developed by Jessop and Hay. Regional development and Industrial policy is seen as strategic actions, and context influences both the structures and the actors in the dialectical process of change. Industrial policy needs to be seen as constantly under construction, with strategic actors selecting their contexts strategically (Hay, 2002: 131), while the policy process involves power relationships.

Regional policies shaping industrial development as strategic action proved to be useful and robust enough to highlight the dynamic processes within RSI. By applying the strategic relational perspective, factors that make the policy process dynamic have been identified. One of the strengths of this perspective is that the interactions between nation state and

province are highlighted by identifying both the structural and agential factors that influence agency and strategic actions.

The concept of RSI has been employed in this thesis as a main theoretical perspective to encompass complex and interactive processes. The thesis has argued that the regional economy can be seen as an RSI in which there are vertical and horizontal relationships and knowledge flows between different actors at different levels. As has been mentioned several times throughout the thesis, provincial governments' priorities regarding their activities are not necessarily determined by their geographical location. It is a combination of a region's history, resources, political economy model, and bureaucracy. Relationships are always under construction, sometimes contested, and in a state of constant change. Thus, the thesis has highlighted the dynamic change process involved in the formation of regionally networked RSI in the post catching-up economy.

When RSI is integrated into an increasing regional autonomy, some controversies and conflicts are opened and framed. National policy as a structural factor influences the economic structure and forms the regional system of innovation, in which agencies and actors are embedded. The formation of other regional intermediaries, such as the GSTEP, may, however, change the structural factors by strategic actions in strategically selective contexts.

Combined with the concepts developed in political science, such as politics and circuits of power, the strategic-relational perspective applied to RSI in this thesis has illuminated the conflicts between actors in the policy field of industrial development and science and technology development with different dimensions of power. Provincial governments are transforming themselves as strategic actors, and the region is emerging as a new strategic selective context in the RSI of the knowledge economy where regional networks are formed.

Thus, this thesis argues that the actual process of changes of RSI in South Korea was highly political. This study has endeavoured to make a contribution to the post catching-up economy by applying the political perspective to industrial policy as strategic actions. The formation of industrial policies has been analysed within the concept of RSI, which comprises interactions. Policy relationships as dynamic processes link actors on different levels as part of the nation state-regional relationship of the post catching-up economy, in which regional policy is implemented by strategic actors, changing both the actors themselves and the structures within which they are historically located. The empirical findings from the case of Gyeonggi province have provided insights into the change of RSI (change within key actors, interactions between policies and institutions) with different forms of power influencing these dynamics of RSI change. The approach taken in this study has highlighted the actual processes of change in the South Korean economy within the RSI, illuminating the restrictions and opportunities made by policies, and by national and regional actors.

### **8.3.2 Limitations and avenues for future research**

Single case studies “are at great risk of indeterminacy in the face of more than one possible explanation, and they can lead to incorrect inferences if there is measurement error” (George and Bennett, 2005: 32). The findings of a single case study are not generalizable to the larger population and lack sampling controls, and the inherent limitations of the research design include "a relative inability to render judgments on the frequency or representativeness of particular cases and a weak capability for estimating the average 'causal effect' of variables for a sample" (George and Bennett, 2005: 22).

This case study did not aim at formal generalization. Instead, is aimed to generate findings that are analytically or theoretically generalizable because of the ubiquity of the agenda setting, issue definition and regional policy formation in the RSI. Similarly, Gerring (2004: 341) argues that “a case study is best defined as an in-depth study of a single unit (a relatively bounded phenomenon) where the scholar’s aim is to eluciage feature of a larger class of similar phenomena”.

This case study sought to add to the growing literature examining RSI studies and demonstrated the utility of this research design to theory development by generating some interesting amendments for the future considferation of scholars.

This thesis provides ample opportunities for ensuing research. First, the change process of RSI in Gyeronggi province was characterized by complexity and was heavily influenced by the province’s historical, political, and socio-economic context. To understand thoroughly the politics of RSI, it was necessary to accumulate vast amounts of information from multiple sources and engage in thick description to produce a detailed narrative. The dynamic interaction of contextual forces and individual motives and actions that shaped the process emerged through the continuous analysis of the collected data and the examination of competing interpretations and explanations. Additional comprehensive case studies on the politics of RSI in other provinces can shed light on the politics that have been overlooked in the literature, contributing to our understating of RSI.

Second, understanding the RSI in political terms offers opportunities for further research in respect to the analysis of power. Although Hay and Jessop offer a conceptual apparatus for the investigation of power as a corollary of contextually and discursively embedded political practices and interactions, it does not satisfy a frequent sign of intellectual narrowness in the innovation literature.

Consistent with this observation, we take into consideration the work of Allen (2003) on the modes of power as an additional source of explanation during future attempts to extend the contribution of the political perspective in the research area of regional policy. As this study has explored the effects of interactions between the central and provincial actors of economic development in Gyeonggi province, a future study may specify which of the modes of authority, coercion, domination, inducement, manipulation, negotiation, persuasion, and seduction encapsulate more appropriately empirical evidence of the power practices and interactions among actors.

The same reasoning applies to the potential operationalization of the political approach of specific regional innovation, and even to the examination of the changing relation between structure and agency in light of the post catching-up economy that states like South Korea face as a consequence of the ongoing change.

Though the future of regional economy policy as the main priority for the South Korea economy is in question, with Park Geun-Hye's administration (2013-2017) championing her own economic program, the trends observed in this research are likely to continue. Few concrete details are available for President Park's flagship initiative, "the Creative Economy", but it will almost certainly continue to experiment with the devolution of the economy (*Financial times*, June 24, 2015).

Third, in this study, we have not fully considered regionalism in South Korea context. Political parties and party leaders have tended to identify themselves with specific regions, which has caused national politics to be known as "regional party-centred politics" (Shin Myungsoon et al., 2005: 87). Regionalism seems to serve a rather political aim, contrary to the economic main goals of the regionalism in western countries. Regionalism is the localism, cronyism, nepotism, factionalism, and corruption, all mutually enforcing and variously connected, that are characteristic of a Korean politics with regions that are not

tourist landmarks or easily recognised geographic locations. One of the political characteristics of Korea is that the division of the Korean peninsula is not so much between North Korea and South Korea as between East (*Gyeongbuk* and *Gyeongnam*) and West (*Jeonbuk* and *Jeonnam*). Unfortunately, in South Korea, with a mountain range dividing the two areas, there is more animosity between the eastern areas and the western areas, with Gyeonggi province being evenly split and often becoming the tie-breaker in elections. This feature is related to the broader framework that allowed the emergence of the region. Whilst in Western Europe, the region, as the output of both the regionalisms, disclosed a bottom-up demand for change and modernisation, in South Korea, the region emerges as a top-down condition of political integration.

Finally, we end by sharing the following quotation from an interviewee, one of the most engaged and experienced in regional industrial policy. After a series of interviews and conversations with this interviewee over the course of the fieldwork visits, reflecting on the preliminary findings we had just told him about, he made the following comment:

South Korea's economic context has totally changed. It means that, at present, the industrial policy, with a theoretical frame, the predominant actors, and the institutions do not respond anymore to the needs of this country... we now see this policy structure did not solve the major problems of this economic growth at the national and regional levels. That is why we need studies, we need a diagnostic to understand where we find ourselves now, to know who the actors are that lie at the core. And from that understanding, we need to formulate new policies that will help to remedy these economic problems and move us toward a post-catching up economy. (Interviewee 1)

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## Appendix 1 Interviewee lists

This appendix 1 contains the list of interviewed policy makers, practitioners and academic experts from Gyeonggi province during the period of September 2010 and January 2011. The listing is always headed by the date the interview took place, followed in the next line by the name of the interviewee, their organization's position and/or unit -where citable-, the organization and finally the place where the organization is based. Total number: 46 interviews with 42 interviewees of which 4 were interviewed twice.

No	Date	Name	Role and organization
1	08 Sept. 2010	Lee *	Founder and first president (2008-2013), GSTEP
2	09 Sept. 2010	Yim *	Vice-president. Originally member of the start-up team, Cewit, State University of New York
3	10 Sept. 2010	Lee	Team leader of Technology Cooperation team, GSTEP
4	16 Sept. 2010	Lee	Senior researcher in Office of Strategy and Planning, GSTEP
5	16 Sept. 2010	Lee	Head of office of Strategy and Planning, GSTEP
6	23 Sept. 2010	Bae	Founder and former president (1999 to 2010), Technopark
7	07 Oct. 2010	Kim	Professor of Technology management School, KAIST
8	13 Oct. 2010	Kim	Researcher in Office of Management, GSTEP
9	13 Oct. 2010	Chung	Professor of Technology of Management School, KunKuk University
10	13 Oct. 2010	Lee *	Senior research fellow, KISTEP
11	28 Oct. 2010	Kil	Manager of Techno Doctor, Technopark
12	28 Oct. 2010	Nam	Team leader of Green growth, Technopark
13	28 Oct. 2010	Kim	Researcher, Gyeonggi Technopark, Technopark
14	29 Oct. 2010	Lee	Professor of Dept. of Management, Gwangwoon University
15	29 Oct. 2010	Lee *	Professor, South Seoul University
16	10 Nov. 2010	Chun	CEO of Genewel, Co. SMEs, <a href="http://www.genewel.com">www.genewel.com</a>
17	16 Nov. 2010	Han	Team manager, KOTERI (Korea High Tech Textile Research Institute)
18	18 Nov. 2010	Kim	Head of Gyeonggi branch, Gyeonggi Korea Testing Laboratory (KTL)
19	18 Nov. 2010	Cho	Senior researcher in department of government and management, GRI
20	18 Nov. 2010	Lee	Junior researcher in department of government and management, GRI
21	18 Nov. 2010	Na	KITECH (Korea Institute of Industrial Technology)
22	18 Nov. 2010	Park	Researcher, ATT Co.
23	23 Nov. 2010	Kwon	CEO, SNA Co.
24	25 Nov. 2010	Lee	CEO, ExpressLab Co.
25	30 Nov. 2010	Lee	Researcher, Aoptics Co.
26	15 Dec. 2010	Hong	Researcher in Office of Strategy and Planning, GSTEP
27	16 Dec. 2010	Jung	Researcher in Office of Strategy and Planning, GSTEP
28	17 Dec. 2010	Park	Researcher in Office of Strategy and Planning, GSTEP
29	18 Dec. 2010	Kim	CEO, Unistream Co.
30	21 Dec. 2010	Kim	CEO, Indilinx Co.
31	23 Dec. 2010	Jun	A chair of Economy and Investment Committee, Provincial council
32	05 Jan. 2011	Moon	Senior researcher, GRI

33	20 Jan. 2011	Oh	Science and Technology Advisor of Governor, Provincial government
34	14 Jan. 2011	Shin	CEO, Verasys Co.
35	14 Jan. 2011	Yim	Manager, Youyang lighting equipment
36	18 Jan. 2011	Jeon	Professor, Sungkyunkwan University
37	18 Jan. 2011	Lee	Head researcher, SCDPHARM Co.
38	21 Jan. 2011	Jang	Professor, Korean Aerospace University
39	21 Jan. 2011	Yoo	Researcher, (KITECH) Korea Institute of Industrial Technology
40	21 Jan. 2011	Kim	Manager, GSBC
41	26 Jan. 2011	Sung	Senior researcher, GRI
42	28 Apr. 2014	Han	Senior researcher, GSTEP

\* I had twice had the opportunity to discuss with this interviewee.

## Appendix 2 Interview topic guide

**Introduction.** I would like give some questions regarding the following issues.

- The connection of your organization to the policies of regional and industrial development
- Relationships of your organization with other actors of regional industrial development
- The processes regarding the formulation of strategies and the implementation of actions
- Your views about the level of collaboration and the role of the other actors

**Section 1: Actors and policies of industrial development.** We would like to start out discussion asking you about the policies of industrial development in Gyeonggi province and the relevance of your organization to relevant processes.

- To begin with, can you explain the role of your organization in regional policy making and practice in system of innovation of Gyeonggi province?
- What do you think the policy-making of regional and industrial development in Gyeonggi province? In what areas for you identify changes in comparison with the past? What do you think of these changes and their impact on regional industrial development in relation also to the regional actors' role?
- How do you describe the level of influence your organization has in policy making and implementation? How the objectives of your organization correspond to the wider policy context of industrial development?
- Can you suggest how your organization could strengthen in policy role? Are there any constrains towards this direction?

**Section 2: Issues of relations.** We have spoken so far about the activities of your organization. In the research area of regional industrial policy making, however, it is placed emphasis on the development of partnership as a means of achieving objectives.

- To concentrate first of all on your organization, when you are undertaking initiatives with respect to regional development in Gyeonggi province with what other actors do you work? Are there any constrain when you are working with other organizations?
- Can you describe the type of these relationships? Are these relationships premised upon formal or informal processes?
- What are the impacts of these relationships? For examples of positive or negative practice?
- Have any of these relationships been modified in the course of time? For what reason? Can you think of cases where past experience has helped the organization to adjust its strategies and partnerships?

**Summary.**

- Do you have anything more you want to bring up or ask about, before we finish this interview?
- Finally, who else you think might be an informative choice as interviewee?

### **Appendix 3 A translated script of one interview**

This appendix 3 contains a translated script of one interview (Lee Won-Young, Interviewee No. 1). This interview was held in the director office of GSTEP at 3pm, September 11, 2010. The researcher's time with him was limited to one and a half hour by his executive schedule. The interview proceeded on a very structured path defined by the preliminary question set used by the interviewer to assure coverage of the topics of importance to the researcher. He agreed to the voice recording of the interview.

Figure The GSTEP



**Interviewer:** Hello, my name is Sangwoo Shin and I am a doctorate student at the University of Sussex. I am studying the policies that shape industrial development in Gyeonggi province and relationships between national and regional actors. Hence, I would like to have a discussion with you about these issues as part of my primary research, which includes interviews with representatives from government agencies, regional authorities, private associations and non-governmental organizations. Is this ok with you?

**Interviewer:** To begin with, can you explain me the role your organization plays in industrial policy-making and practice in Gyeonggi province?

**Interviewee:** Let me explain regional economic background first. It helps our fundamental role. The Metropolitan Area including Gyeonggi province accounts for 47% of the nation's gross domestic product and 46% of the population. Under the current central regulation, central government decided to control over population of capital area. Central government is taking measures to decentralize the population around the capital area. Because of the dense population in the capital area, the unbalance between regions is serious. Since 1994, central government has barred large enterprises from building new plants or expanding existing ones in and around Seoul and Gyeonggi to lessen the concentration of population and economic power in the country. Thus, central government has capped a certain number or a size of facilities to be built in our region and enterprises cannot be allowed to build new factories or extend existing facilities in this region.

Our organization, the Gyeonggi Institute of Science and Technology Promotion (GSTEP), has been operating since May 2008, under the provincial government of Gyeonggi province. Main goals of the GSTEP are the further exploitation of the regional industry and the building of common fields of cooperation among the actors of industries in Gyeonggi province. We believe that these goals will enable us to promote the contemporary our region as an attractive industrial place able to offer technology policies of the highest level throughout the year. Within this framework, we are concentrating on activities of industrial policy development. We designed a vision of future, strategy and programmes and achieve wide awareness this way orienting the local economy and firms excluded from active regional networks. Important policies so far have been the staging of the Gyeonggi Technology Development Programmes (GTDP) and the IICC as well as the promotion of the regional innovation system's new image.



**Interviewer:** What do you mean when you refer to regional innovation system's new image?

**Interviewee:** We think the recent innovation system of Gyeonggi may be characterized by the multiplicity of elements and a high degree of complexity. I am referring to all these elements and infrastructures that constitute the image of regional innovation system in global economy and its key competitive advantages in comparison with other regions. We are talking about the upgraded infrastructure, the new network of industry and the fact that firms in Gyeonggi province can have easy and quick access to the information.

Such is the regional innovation system paradox. Today, advanced regions, such as Seoul and Gyeonggi, spend more public money for the promotion of innovation for their firms than less favoured region do, thus increasing the innovation gap across regions. But, it could be misunderstanding that Gyeonggi's innovation system is stronger than that of other regions. In fact, the system is weaker in terms of regional players' real action. Geographical advantage was the biggest factor in great growth of Gyeonggi. At the same time, because of locational advantage and political environment, provincial government's role has been weakened. Their role was not significant in local industries.

For example, the world's largest furniture retailer IKEA will set up shop in Gyeonggi province. Once the Dutch company with Swedish origins opens store near the Gwangmyeong KTX (High speed train) station by 2014, the local furniture industry would be affected in a profound way. In details, as finished furniture is not subject to tariff duties, IKEA may import low-cost furniture products from overseas without paying any tariffs. In contrast, however, local furniture firms must pay 8% tariffs for raw materials and intermediate goods such as particle boards. The furniture industry contends that this is a case of "reverse discrimination" and demand abolition or a cut of the tariffs by more than

a half. To this, the central government responded negatively as this would affect adversely the regional board industry. I can say provincial government's role is in the here.

The key question at provincial government is how to provide the relevant conditions for generating growth of more knowledge-intensive forms of economic activity within the context of dynamic innovation systems. "Benchmarking" was one of the popular ways of building infrastructure in South Korea. Thus, it is used to find "best practices" in order to promote the regional competitiveness. However, benchmarking as a basis for regional competitiveness policy is unsustainable, because any best practice depends on the specific context in which it is applied. This implies that imitation of a best practice that contributed to success in one region may be detrimental for another region, because of the mismatch between the new ways of acting and the existing structures and routines. Benchmarking is, however, not useless when it is done correctly. The process of successful policy learning and policy perfection needs to combine benchmarking with insights of systemic and idiosyncratic characteristics of regional economies. What appears as a good practice in one systemic context might be less so in another, but learning from success stories might help to design an effective policy for a region. Success stories are NRW of Germany, Third Italy, Southern East of England of UK and industrial clusters like Silicon Valley.

**Interviewer:** I do not want to move away so soon from your organization's activities and we will definitely return. You have referred, however, to the political environment of Gyeonggi province, which is a crucial issue in regional industrial policy. What do you think about the Seoul Metropolitan Regulation and the wider planning of balanced national development in Gyeonggi province?

**Interviewee:** What is the meaning of the Metropolitan Area Management Plan? No new factories should be given. In the case of South Korea, the result was the further expansion of Gyeonggi province, so I do not know whether this policy did make any contribution. This is an issue that is under discussion for many years. I think that the policy for metropolitan area is dated back in 1980s. They had identified then the problem and tried to find a solution. But this decision provoked reactions and it came in contrast even with subsequent legislation.

**Interviewer:** One interviewee from central government justified this reaction saying that the further development of factory would not facilitate the maintenance of economic balance between Gyeonggi province and other regions in South Korea.

**Interviewee:** I hope that such issues were examined during the public consultation on the plan for balanced development since 2004. You must check it out because it identifies a special geographical territory, which deals exclusively with industrial development in urban and metropolitan areas. The ratification and implementation of the spatial plan of balanced development lead to the withdrawal of other inconsistent laws and provisions. It is eventually time for all the different development policies to move in parallel with spatial and regional planning.

**Interviewer:** We will return later on political issues. I prefer now to concentrate on the activities of your organisation. We have talked so far about the new image and I want to ask you what activities you undertake in order to capitalize on this image. Also, is this the only field in which you are active?

**Interviewee:** We do not confine ourselves. We put emphasis on our extroversion through the searching needs of firms, and planning relevant strategies. Such activities may sound

somehow elementary and I know that, for instance, even in several Western regional policy makers may be able to undertake this kind of activities. In the case of Gyeonggi province, however, it is the first time that a regional policy makers undertakes such initiatives. We also aim to the continuous research of regional industry trends as well as to the establishment of strategic partnerships at the regional and national levels. The truth is that major industrial policy is decided at the national level, and the role of provincial government is to implement at the local level the central guidelines and plans of responsible central government's agencies. Provincial government also plays an important role in the development, management and promotion of the firms' products, while most regions do not participate very much in these processes. The difference here is that Gyeonggi province is stronger than other regional authorities not only because of the region's population but also because Gyeonggi is economic centre of South Korea. Nevertheless, this particularity does not relieve us from administrative difficulties, which emanate from the centralised structures and the low empowerment of regional authorities as a repercussion of the administrative structure. To be honest, the development of a long-term partnership between the national leadership of industrial development and our organization is a prerequisite for the production of desirable results.

**Interviewer:** How would you, therefore, describe your organization's influence?

**Interviewee:** The influence of this structure is peripheral so far, because we have less than five years as an autonomous agency under the municipality instead of being a simple department. The more the organization expands its turnover the more its influence will increase. I believe that organizations like ours are the most flexible structures in terms of regional authorities. We are open to the prospect of partnerships and have included members of industrial committee. Yet, currently the most important step is the

organization's transformation to a development corporation of the provincial government, which will start operating from the beginning of 2008. Nevertheless, when in the case of Gyeonggi there are numerous existing agencies such as Technopark, the GSBC, GRRRC and Gyeonggi Bio-centre, the existence of a provincial council could be really influential at policy level including the case of industrial planning and development. The existence of a GSTEP could compensate for the weak role of provincial government.

**Interviewer:** Do you therefore consider necessary the convergence of similar policy actors for industrial development in Gyeonggi province?

**Interviewee:** The national plan for the regional development and balanced development classifies our area as a Metropolitan Area. I am afraid that it will be politically difficult for this plan first to become a law of the state and then to be implemented. The reason is that the enactment of such a plan should lead to very serious regulations. Also, the political cost should be very high if you to decide to replace all the existing regional and prefectural governments with a new administrative city and innovation cities. We are now discussing beyond the realm of development, but such cities should be flexible and strong otherwise there is no reason for creating it. It is a fact that there is a fragmentation of powers. That is the right word for what is going on not only in regional authority but also in the landscape of industrial development. The problem in the case of Gyeonggi province is that this phenomenon is more intensive than anywhere else. As long as the area of Gyeonggi province does not have an administrative structure on industrial policy, it cannot be equally compared with other its international competitors. Under these circumstances and due to the fact that even if they decide to create an industrial policy structure it will take a long time, the GSTEP typically has a limited scope while representing only the Gyeonggi province. We must integrate and exploit all the diverse

elements of the agencies in the wider area of Gyeonggi and communicate them with the globally famous brand name of Gyeonggi to make economic competitiveness at the international level. Such a goal necessitates the existence of metropolitan control tower or at least of metropolitan partnerships, even at the simple level of communication among the various actors, as a sound option for a strategic approach in regional industrial development under a common branding identity. It is irrational for all regional and city governments not to promote the wider area of Gyeonggi, which is without doubt the most recognizable.

**Interviewer:** Why do you think there is confusion regarding the industrial policies of Gyeonggi province?

**Interviewee:** Because currently each one of the policy actors communicates with its own approach the industrial strategy of Gyeonggi province. Confusion is inevitable. I suppose that some city-government municipalities undertake similar individual initiatives regarding their own areas. Sometimes of course there are partnerships too. For instance, we recently signed a Robot industry cooperation memorandum with the Bucheon city government, so from now on we will stay in touch and we will examine the –possibility of mutual activities. I know you would like to know more about it, but it is a slow process which is hindered not only by the current timing after the elections but also by the financial problems of the Bucheon.

**Interviewer:** This sounds ok, but you have identified weaknesses in the role of regional actors, especially provincial government.

**Interviewee:** They are not simple weaknesses; the problem of the regional administration is that it has very few powers especially in policy-making like science and technology

development. Generally in South Korea we have centralised administrative structures. Especially in the case of science and technology development, however, there is a strong established perception that science and technology is an exclusive responsibility of the central government, probably because of the existence of the Ministry of Knowledge and Economy, which has been the key organization since the 1970s. Even the new administrative structure that was established in 2004, I mean the Ministry of Education, Science and Technology (MEST), has not accomplished so far to undertake initiatives because it does not have enough powers.

**Interviewer:** In the case of your organization, have you faced any constraints because of its status as a body of regional administration?

**Interviewee:** I think that the new organization will be less susceptible to this kind of problems and more productive and flexible because it will have a more concise agenda and responsibilities. I can talk to you about all the activities that we hypothetically could do, but I think that nobody needs more promises that will never become true. The difference with the future scheme is that we are talking about a development of Gyeonggi province with a much more flexible innovation system both from the central government and provincial government itself.

Decision-making on regional development and industrial innovation is still highly centralized and vertically-integrated at the apex of the National Science and Technology Council (NSTC), the ministries, and public research institutions. In November 2010, NSTC transformed into a powerful permanent body as 'the control tower' of science and technology development policy in Korea. This change is based on 'Plan of constructing new national science and technology system and developing research institutes funded by the government' in July 2010 set by a private development committee and sponsored

by the central government to allow NSTC to be a permanent organization, strengthen its specialty, and reinforce its core functions for improving comprehensive R&D adjustment.

**Interviewer:** Can you tell me about a reform of the National Science and Technology Council and its impacts on this region?

**Interviewee:** It is a science and technology control tower. The NSTC was established in 1999 as the advisory body for science and technology blueprint. However, the NSTC took a limited role on decision-making. The Ministry of Strategy and Finance handled everything related with R&D strategies suggests budget spending limit and NSTC played a advising role under the decided strategies and limited budget. However, the role changed to the position of practically allocating and adjusting planning and budgeting.

As most government ministries have their own research policies and funding programmes, co-ordination of the Korean government's intervention and activities has proven difficult. The problem has been compounded by strong rivalries between the main ministries, which have resulted in some duplication of policies and programmes and insufficient inter-ministerial co-operation. In order to solve such kinds of limited co-ordination, the Lee Myung-Bak administration has tried to formulate top-down decision-making process since 2008.

Five functions of NSTC are formulating national science and technology strategies and plans; allocating and adjusting national R&D budgets, adjusting science and technology policies; managing performance of national R&D in all cycles; and designing NSTC's structure and organizing human resources. The NSTC suggests top science and technology direction and mid-term strategy goal to each ministry, and the Ministry formulates mid-term strategy and plan based on the suggestion. After that, the strategy and plan are submitted to NSTC. NSTC reviews the mid-term plan of a department, and MOSF decides



all R&D budgets. NSTC suggests budget allocation direction such as national R&D policy direction next year, investment ratios of each strategic part, large and small projects, infrastructure, competition, and stable budgets. MOSF presents the instruction and standard of budget allocation, and each department prepares and submits next year's plan (including budget of each plan). NSTC adjusts the project plan of each department, and leads adjusting overlapping projects among departments and linking among projects. Each department prepares and submits a concrete project budget based on the adjusted plan. Then, NSTC evaluates and adjusts the project budget submitted, and gives the result to MOSF. Ultimately, MOSF prepares government budget compilation based on the adjusted budget.

**Interviewer:** Let's talk about Technopark. Don't you worry that the Technopark could not be very positive about your organization?

**Interviewee:** I think they are happier now because they still have the right to participate in decision-making. I can imagine that they will tell you all the negative aspects of the GSTEP, but I doubt whether they will mention their own mistakes and false practices. Before I come here, I was working in KDI (Korea Development Institute) as well as in the Blue house (the presidential office), which plays the role of the top decision maker for the national development policy but represents the regional policy. When I was working there, I had not particular opinion about the Technopark and its imperfections. When I started working here, however, I realized that the regional actor in Technopark is mature because it has a very narrow way of thinking about the role of the regional policy making.

**Interviewer:** I have to admit that the picture you have given me is much more positive than what I was expected. I can also say that your description is much more optimistic than what I have been told so far, especially by people in Technopark.

**Interviewee:** I am telling you again that we must keep a balance in the allocation of praises and criticisms. I will tell you something that I am absolutely sure regional policy makers will also tell you. Whatever positive happens nowadays, it does not change the fact that Gyeonggi province was absent for many years from the provisions of national and regional development policy. If you also take into account a series of serious problems that go beyond the realm of industrial development, such as the degradation of urban environment, it would not be an exaggeration for somebody to argue that Gyeonggi province had been left behind many other regional development policies. The occasion of the local election benefited in many ways the whole city and above all through the building of important infrastructure. The issue, however, is that we have not still prepared and implemented a long-term strategic plan for industrial development, management and promotion that will emanate either from a regional partnership or from a agencies under the supervision of the central government.

**Interviewer:** Are you happy with partnership with other agencies?

**Interviewee:** We have no complaints. Problems emerge when there are conflicting interests of lack of financial resources which is not the case here.

**Interviewer:** I want to thank you very much for your time and help. We have already gone beyond one hour of discussion but there are a few issues I have not covered yet. Would you mind to make you a few more questions?

**Interviewee:** Go ahead.

**Interviewer:** Thank you very much. It looks like bureaucracy is not an exclusive complaint of the regional policy makers.

**Interviewee:** You can face bureaucracy everywhere; it is even more intensive between levels of the public sector. Regional policy makers have no easier processes in their relationships with the central government. We are talking about formal institutionalised relationships and processes, which have been decided by our political directors regardless we are talking about the MKE, MEST or any other ministerial authority. You have to accept it and learn to live with it. Policy makers from the provincial governments or regional authorities have at least the right to complaint or moan, although it does not mean that they will solve their problems. We cannot for instance issue a complaint press release, but I think that we are accomplishing better results through our internal efforts when we are dealing with the different levels of the state.

**Interviewer:** I understand what you are saying but I have the impression that you are not complaining for a lack of powers, at least in the case of GSTEP.

**Interviewee:** What really matters is not what responsibilities we have but how we can improve our performance. This organization is supposed to serve two roles, the first being the development of industrial development and the second being both the management and promotion of regional industries. These dimensions in other countries and regions are not only completely separated and independent but they also belong to different organizations.

**Interviewer:** Balance is the ultimate target but from what we have said I understand that you are currently more focused on technological development and management. However, if you wanted to focus more on technological development activities, how

would it be possible to take powers regarding spatial and territorial planning from other actors such as the Technopark?

**Interviewee:** This could only happen if an administrative structure was the common denominator for relationships between the actors of industrial development in Gyeonggi province. The ideal scenario would suggest the existence of a strong organization, in which all the responsibilities regarding regional industrial development would be accumulated. Such a scenario however is not possible at all if we take into account that even at the national level the MKE has not achieved since 2004 to absorb relevant responsibilities from other ministries such as the MEST.

**Interviewer:** Can you think of any other constraints?

**Interviewee:** People working at all levels of the public sector have an old-fashioned perception about industrial development. And you know better than me that innovation system is a very complex phenomenon which is treated nowadays not just like one of the sectors of tertiary economy but like a secondary discipline with various connections to other scientific fields. In Gyeonggi province this kind of knowledge still exists at a very limited level and I am not talking only about policy-making, where the lack of knowledge is really disappointing, but also in the fields of technological development and management, where at least it would be easier to copy successful examples from other countries or regions. We need better education, from people at the macro level who decide national industrial policy for the next ten years to each one of us at the micro level whose work is to make innovators feel welcomed.

**Interviewer:** To conclude this discussion, could you give me some suggestions for strengthening industrial policies and collaboration in Gyeonggi province?

**Interviewee:** I return once again to the necessity of flexible administrative structures which, according to my opinion should have the form of regional partnerships under the central government's supervision. Until then, we need to improve every single aspect that affects the value for budget of the industrial policy. Such a task could be facilitated by the selection of specialized and well-educated personnel and the further training of existing workforce. There are of course many additional activities that could contribute, such as the promotion and better utilisation of knowledge infrastructures through the employment of high-tech facilities or the organization of important events, but I think that the first suggestions are currently the most important ones.

**Interviewer:** And what about the future of the GSTEP?

**Interviewee:** We have to shape the form and role of our organisation within the next five years. We already know that the positive will of the municipality and the industrial public administration is not enough. The most influential factor is what the will of the national government will be, when we will be ready to undertake serious initiatives. It is very easy to theoretically discuss what should be done. Nevertheless, we have to be careful. If we undertake all these initiatives we must be also ready to receive criticism. The national agencies have to decide its own role in these processes, and I am afraid it will take some time. At least I am happy because in the case of Gyeonggi the GSTEP has made a difference during the last five years. We have to follow the territorial guidelines of the national government, but even president have said that regional authorities will be the dominant actors in the future. I can remember also a recent researches about the evolution of industrial policy and regional innovation systems in the European Union in which the European Commission admitted that industrial policy is planned according to the

requirements and targets of regional and local authorities in each regions. We must do the same, but it will not be easy.

**Interviewer:** Thank you again for spending so much time with me this afternoon.

**Interviewee:** You are welcome. Please, let me know if you need any more help in the future.

## Appendix 4 A summary of participant observation

This enables the researcher to use a variety of data collection methods like attending council meetings, getting access to minutes and files, conducting interviews of different kinds just as even a formalised questionnaire survey can be better designed and conducted after a period of participant observation.

No.	Date	Event ( <i>location</i> ) and Participants ( <i>Numbers</i> )	Contents
1	09-10 Sept. 2010	Gwanggyo Techno Valley Open day ( <i>Gwanggyo Techno Valley, Suwon</i> )	The second open day to visitors of what goes on behind the gates of the Gwanggyo Techno Valley, and an opportunity for others to ask questions and engage in discussions with related actors. Opportunities to get a close-up look at how Science and Technology Valley functions with society and at the lives of those who work there.
2	15 Sep. 2010	Public hearing on rebuilding the National Science and Technology council (NSTC) ( <i>Seoul Palace Hotel, Seoul</i> )	Discussion on progress plan and role allotment of NSTC and on national R&D projects for mid-tem period. Arranging of meeting by the MEST; A part of industry development plan and budget allocation plan of central government; Examination on expected problems
3	08 Oct. 2010	Conference on the Regional Innovation Policy ( <i>The K Seoul Hotel</i> ), STEPI (2), GSTEP (5)	The conference arranged by GSTEP. Found some controversial issues on regional interests and expected problems on NSTC
4	13-14 Oct. 2010	Workshop for Regional Research Support Units ( <i>Jaechun, Choongbuk</i> ), Choongbuk Technopark (1), Busan Technopark (1), GSTEP (2), KISTEP (1), Jeonbuk Technopark (2),	Discussion on the selection method of strategic industries & specialized sectors; Emphasis on discussion for the possibility & problems of coordination of strategic industries; Consideration in the selection of specialized sectors in strategic industries
5	15 Nov. 2010	Annual Audit of the provincial administration ( <i>the GSTEP, Suwon</i> ) Provincial council (10), Provincial government (6), GSTEP (6)	Criteria of the GTDP; Discussion on progress plan and budgets. Discussion on the budgets to deal with conflicts in connection to Technopark; Consideration of flexibility of GSTEP in the process of political bargaining; Deduction of the budgets to prevent conflicts in coordination process of strategic industries and in selection process of specialized sectors
6	17 Nov. 2010	Project meeting with Ansan Science Valley (ASV) ( <i>Gyeonggi Technopark, Ansan</i> ) Technopark (4), GRI (3), KTL (1), KITECH (1) Hanyang University (2)	Specifications of linkage of strategic industries upgrading and strategic clusters; Identification measure in Ansan area; Discussion on the selection method of strategic industries and specialized sectors. Emphasis on discussion for the possibility and problems of coordination of strategic industries; Consideration in the selection of specialized sectors in strategic industries.
7	23 Nov. 2010	Gyeonggi-EU Innovation Cluster Seminar, ( <i>the GSTEP, Suwon</i> ) GSTEP (4), Gyeonggi Technopark (1), BMBF (1),	Presentations on development strategies and scenarios of specialized sectors by respective strategic industry; Comprehensive summary on industrial policies in the region

		Technik GmbH (3), Veneto Innovazione spa (1), NRF (4)	
8	08 Nov. 2010	Meeting of IICC member firms and training on the technology funds in Gyeonggi ( <i>the GSTEP, Suwon</i> ) Provincial government (5), GSTEP (4), Gyeonggi Technopark (5) and firms	Discussion on the basic direction of IICC; Comprehensive discussion on expected problems in relation to central government; Opportunities of regional actors for new inputs to the development strategies; Linkage of GRDP upgrading
9	17 Dec. 2010	Gyeonggi Technopark Open day ( <i>Gyeonggi Technopark, Ansan</i> )	To promote a more objective and solid scientific culture in society, thereby contributing to the projection of a positive image of science; Presentations on rationales, characteristics, and relative merits of a Technopark plans of selection of specialized sectors by strategic industry (e.g. Techno Doctor)
10	10 Jan. 2011	Winter conference on Innovation Cluster ( <i>Daedeok Biz Centre, Daejeon</i> ) Daedeok Science Park officer (4), GSTEP (3), University (10), Others (20)	To hear industrial policies of other regions. In particular, photonics industry in Gwangju, which was introduced as an example of smart specialisation strategy of OECD, is considered as an exemplary success of regional policy.

Notes: a. In the process of comprehensive examination, the regional actors are very positive to express their opinions and are quite sensitive to some issues such as the selection criteria and direction of each other. Interviewees at Gyeonggi Technopark also show similar behaviours to protect their own turfs. They are anyway affiliated to certain lines. Nevertheless, they worry about the conflicts with the GSTEP and wonder if the interim report of Technopark is quite flexible to deal with the demands of MKE. In addition, there could be other conflicts between Daegu Metropolitan Government and other local governments. Professors and specialized researchers show relatively neutral positions. The representatives of strategic industries show strong attachments to their fields without exception.

b. Because of time constraints, the whole process is progressed within relatively short period of time. Thus, it seems to be quite difficult for the participants to secure enough examination and discussion periods.

c. The researcher was employed in the GSTEP as part-time researcher between 2 October and 15 December 2010.



## **Appendix 5 Provisions of the local autonomy of South Korea**

This appendix 5 contains a provisions of the local autonomy in South Korea. Local politics in South Korea has its basis in the nation's Constitution, adopted in 1949, which recognises local government as essential to democracy and establishes it as part of the nation's system of governance.

However, it was not until 1960 that the first local elections in Korean history were held. However, since the military coup in 1961 local autonomy had been suspended. In the wake of democratization in 1987 the Local Autonomy Act was revised in 1988, which ultimately led to the gradual restoration of local autonomy. Elections for local council were first introduced in 1990 and elections for mayors and governors were later introduced in 1995.

The form of Local Autonomy Act reflects democratic institutional principles such as separation of powers. It is helpful to pay attention the legislation by which the devolution of political and administrative power from the nation state to the regions has been implemented. The fundamental responsibilities of regions are stipulated in the Constitution as noted in this appendix.

The Constitution grants regional authority the power to action that are not explicitly prohibited or assigned elsewhere. Article 117 of the Constitution can be seen as a fundamental milestone in the relation between central government and provincial governments. It notes regional authorities have the right to manage their property, affairs, and administration and to enact their own regulations within the law. According to Article 118 of the Constitution, "the local government shall have a council" and "the organization and powers of local councils, and the election of their members; election procedures for heads of local governments; and other matters pertaining to the organization and

operation of local governments shall be determined by laws.” Every local government maintains the same form of government and there is no exception.

More specific, The Local Autonomy Act assigns responsibilities. The Local Autonomy Act was adopted in March 1994. The significant of the responsibilities of region as well as the important of public support was indicated in the Article 9 and Article 11.<sup>82</sup>

Article 9 also states that the following are local public services: 1) regional administration; 2) public services that enhance residents’ welfare; 3) industrial development of agriculture and commerce; 4) regional development and environmental facilities; 5) public services that promote education, sports, culture, and the arts; 6) environmental protection, including pollution prevention; and 7) civil defence and fire protection. These are the inherent functions of provincial governments (Table in below).

Table. Expenditure responsibilities of regional government

Core task	Details
Regional Administration	Ordinance, regulation, personnel management, budgeting
Residents’ Welfare	Welfare facilities; support for seniors, low-income people, and the disabled; public hospitals; garbage collection
Agriculture and Commerce	Irrigation, distribution of agricultural products, forestry, dairy business, small and medium businesses
Regional Development	City planning, construction and civil engineering, local roads, residential environment, housing, local economy
Education, Culture, etc.	Elementary and junior high schools, libraries, museums, art galleries, stadiums, local culture, and art
Environmental Protection	Water supply, sewage treatment, historic preservation, city parks, supervision of regional rivers, disaster protection, traffic utility systems
Civil defence and Fire Protection	Management of civil defence system, fire fighting

Sources: Article 9, the Local Autonomy Act.

Article 11 stipulates that the following public services should be outside the domain of provincial government’ responsibilities: 1) crucial to national defence (foreign policy,

<sup>82</sup> For the full text of the Local Autonomy Act, please refer to Korea Legislation Research Institute (<http://elaw.klri.re.kr>).

military defence, administration of justice, and national tax); 2) uniformly provided (monetary policy, financial policy, and trade policy); 3) managed nationwide (supply control of agriculture, fishery, and livestock, as well as trade); 4) provided nationwide (national development plans and management of national forests, national rivers, highways, and national parks); 5) subject to uniform standards (labour and survey standards); 6) coordinated nationwide (postal systems and railways); and 7) related to inspection, testing, research, navigation management, meteorological management, and nuclear engineering development, which require high technologies.

