

Studies on Development Policies for Regional Industry

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Abstract : After Korean War, Korea focused on catching up with the world economy by concentrating on some target industries around the Capital Region and southern coastal cities. Thus, the regional disparity between Capital Region and non-Capital Regions increased drastically. At last, when Korea acquired full-fledged autonomy in 1994 in the Civilian government (1993-1998) and experienced the Asian financial crisis in 1997-1998, local governments were awakened to the notion of region-oriented development, especially for regional industrial development. The purposes of this paper are to introduce regional industrial development policies since 1998 and to suggest some recommendations in terms of how to adjust regional development for industrial policies in the future.

In the introducing phase (Kim administration, 1998-2003), four provincial governments requested national funding to raise regional industries that are of strategic importance. At the same time, the central government recognized the need to nurture regional industries to overcome structural weaknesses. As a result, the Roh administration (2003-2008) gave a birth to a systematizing phase. As the ultimate regional policy objective, the balanced national development has been set and the Special Acts, Special Accounts, Committee, and National Plan have been established. Regional Industrial Promotion Project has been carried out very actively during this period. It had a good start albeit idealistic to a certain extent. Therefore, the current government has changed policy paradigm from balanced growth to regional competitiveness along with global paradigm shifts. In order to enhance regional competitiveness, regional development policies have been pursued in more efficient way. Leading Industry Nurturing Projects (LINPs) on Economic Region level, existed Regional Industrial Promotion Projects (RIPPs) on Province level, and Region Specific Industry Projects (RSIPs) on Local Area level have been implemented.

Now, it is appropriate to review regional development policies including industrial policies since 1998 and to adjust them for the future sustainable regional development. Because LINPs and RIPPs will be terminated in next two years, the 2nd stage projects are on planning to reduce the redundancies in two projects. In addition, business support program would be reformed from subsidizing technology development to building ecological business system. Finally some policy implications are provided in this paper, which is useful to establish the new regional industrial policies for both central and local

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government.

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1. Introduction

Korea has implemented various regional industrial promotion initiatives focusing on the nation's balanced development which are aimed at strengthening national competitiveness through the development of regional industry. The purposes of this paper are to introduce regional industrial development policies since 1998 and to suggest some recommendations how to adjust regional development industrial policies for the future.

Korea acquired full-fledged autonomy in 1994 in the Civilian government (1993-1998) and experienced the Asian financial crisis (1997-1998). With a greater authority on the one hand and economic ordeal on the other, local governments were awakened to the notion of region-oriented development. As a result, four provincial governments requested national funding to raise regional industries strategically important. At the same time, the central government recognized the need to nurture regional industries to overcome structural weaknesses. To this end, the government promoted the cultivation and development of strategic industrial clusters for each region. The projects undertaken based on the regional industrial policy had the following phases:

Asian Financial Crisis in 1997 brought a turning point to Korean economy in several aspects. As the

growth rate continued to decrease in late 1990s, Korean industrial structure had to not only shift to more knowledge based industries but also lessen regional disparities. Therefore, the Kim administration (the Government of Nation, 1998-2003) announced 'the mitigation of income disparities and regional economic disparities' as the national as well as regional policy agenda, as the first government from the Democratic Party. As a result, development projects for less developed areas and relocation projects of public institutions including several ministries were carried out. In addition, Specialized industries, so-called 'Strategic Industries', were selected in four provinces, which are textile in Daegu, footwear in Busan, optical electronics (and/or photonics) in Gwangju, and machinery in Gyeongnam Province. However, balanced regional development policies were not fully carried out due to the massive impacts of Korean financial crisis.

As the second government from Democratic Party, the Roh administration (Participation government, 2003-2008) basically succeeded most regional policies from the former government and developed a lot more and established regional policy system with legal foundation. The national agenda in regional development policy in the Roh administration was 'balanced national development'. The Balanced National Development 5 year Plan was launched to realize policy ideal. In

addition, the Roh administration built up the regional innovation systems. Techno-parks were established to play a role in a regional innovation system. Regional industries were promoted in more systematic way on a broader scale by introducing new industries in nine other regions. Through second-stage support program for previous four provinces, the project has been drastically expanded in all non-Capital Regions, especially enhancing for balanced national development.

However, the Lee administration (2008-) paid attention to the inefficiency in regional development policies that sought to deal with 'balance' in the former government, because there was a uniformity of balance and the scale

economies in regional policies. Since the world paradigm in regional policies has also shifted to 'mega-region' and decentralization, the Lee Myungbak government has changed the regional policy objective from 'balance' to 'regional competitiveness' through more decentralization by authority transfer to local governments with block grants and adjusted the spatial scope of regional policy from administrative districts to ones based on economic parameters: from province and county to Supra Economic Region, Economic Region, and Local Area. The following Table summarizes the key factors of regional industrial policies in each administration. One of distinctive characteristics in the policies is to emphasize the role of Ministry of Knowledge Economy (MKE)

Table 1. Key Factors of Regional Industrial Policies in Each Administration

| | Kim Administration (1998-2003) | Roh Administration (2003-2008) | Lee Administration (2008-) |
|------------|---|--|---|
| Goal | <ul style="list-style-type: none"> • Inhibitory concentration of the Capital Region • Regional industrial promotion policy • Decentralization and dispersion | <ul style="list-style-type: none"> • The multi-nucleic balanced development paradigm of creation and generation • Promoting the development strategy of creation and generation in pursuit of autonomous development through endogenous and internal-driven development of all regions. • Promotion of regional industries | <ul style="list-style-type: none"> • Stimulating regional competitiveness by promotion of innovation-driven regional development strategies • Mega region-wide regional policies • Deepening decentralization • Enhancing Inter-regional cooperation |
| Background | <ul style="list-style-type: none"> • Centralization and concentration problem • Input-driven strategy • Integrated balance • Limitation for regional development because of overcoming national financial crisis • A local autonomy system | <ul style="list-style-type: none"> • Facing severe concentration of the Capital Region • Necessity of paradigm shift to a more balanced regional development policy • Dynamic balance • 3 strategies: Creation and innovation strategy, diversification strategy of balanced development, highly open national management strategy | <ul style="list-style-type: none"> • Necessity of paradigm shift to regional competitiveness, mega region, and decentralization for efficiency • Necessity of changes in spatial policy range to Supra Economic Region, Economic Region, local area • Necessity of interdependent policy planning by local governments |

| | Kim Administration (1998-2003) | Roh Administration (2003-2008) | Lee Administration (2008-) |
|--|--|--|---|
| Regional Industrial Policies and Program | <ul style="list-style-type: none"> Regional Industry Promotion Projects (RIPPs) 4 major specialized industries for 4 metropolitan cities and province Regional industrial promotion for 9 regions Regional R&D fund and support Promoting local universities Promoting regional development agency (RDA) | <ul style="list-style-type: none"> Innovation Policies: the establishment of regional innovation systems, Regional Innovation Councils at the local level, Regional R&D Budget Expansion Business, Nuri Business, Regional Innovation Forum Business, Connect Korea Business, Regional Innovation Agency (RIA) Industry Policies: 4 Strategic Industries by each regional authority, fostering regional Strategic Industries under RIPPs, innovative clusters (R&D Complex, Industry Complex) Balance Policies: Revitalization Business, Specialized regional development zone system Spatial Policies: Multi-functional administrative city, Relocation of public functions and construction of innovative cities and Enterprise cities | <ul style="list-style-type: none"> Industry Policies: <ul style="list-style-type: none"> - 2 Leading Industries (under LINPs) in each Economic Regions managed by Leading Industry office under - 4 Strategic Industries (under RIPPs) by each regional authority, fostering regional Strategic Industries, RIPP managed by techno-parks - Region Specific Industry Projects (RSIP) Spatial Policies: Multi-functional administrative city, Relocation of public functions and construction of innovative cities and Enterprise cities, Free Economic Zones and R&D Special Zones |
| Governance System | <ul style="list-style-type: none"> Central government initiatives (Top-down approach) mainly by Ministries such as Ministry of Commerce, Industry & Energy (MOCIE) and Ministry of Construction & Transportation (MCT) | <ul style="list-style-type: none"> Local government and private sector initiatives (Bottom-up approach): “local-led, central-supported” promotion system Autonomous regional development Majoring by Ministry of Commerce, Industry and Energy (MOCIE) with systematic cooperation with other Ministries | <ul style="list-style-type: none"> Majoring by Ministry of Knowledge Economy (MKE) with systematic cooperation with other Ministries More decentralized governance with block grants |
| Institutional Framework | <ul style="list-style-type: none"> Equal investment to all locality | <ul style="list-style-type: none"> Establishment of the Presidential Committee on Balanced National Development (PCBND) Regional Innovative Development Plan 5-Year Plan for Balanced National Development (2003-2008) <i>Special Act for Balanced National Development</i> Special Account for Balanced National Development | <ul style="list-style-type: none"> Modified PCBND to the Presidential Committee on Regional Development (PCRD). Establishment of the seven Economic Region Development Committee (ERDC) 5-Year Plan for Regional Development (2009-20013) Amendment of Special Act for Balanced National Development Special Account for Regional Development |

comparing to that of the Ministries of Land or Transportation.

2. Introducing Phase of Regional Industrial Policies

Korea maintained a centralized administrative system for a long time and has only adopted a local autonomy system since the early 1990s. The executive councils of local governments and local council members have only recently been elected through a popular vote. Despite the introduction of the local autonomy system, the autonomous power of local governments is still limited because of the limited devolution in government power and the lack of financial and managerial capability by local governments.

Over all, studies from many industrialized countries show that industrialization generally resulted in uneven regional growth. Korea also developed inequalities in household income between urban and rural areas, in addition to regional differences. Rural household income has rapidly decreased since 1995 due to the open market policy for agricultural products established by the World Trade Organization (WTO). As of 2007, the average income of rural households

accounted for only 72.5% of that of urban households. The rest of Korea has been heavily dependent upon the Capital Region for capital, technology, skilled human resources, and business services. Inequalities between the Capital Region and other regions in Korea can be attributed to fundamental differences in controlling resources, along with making public and business decisions. It is important to use GRDP data carefully to show the divergence of economic development between regions, because GRDP data does not reflect the actual income level of residents sometimes (Kim, 2009). The OECD and some researchers prefer to use income tax per capita to illustrate the disparity in personal income between regions. Unlike GRDP per capita, income tax data clearly shows the distinctive inequality of personal income between regions, particularly between the Capital Region and the rest of the country. For example, the income of the Capital Region is estimated to be at least 3 or 4 times higher than that of other regions (Kim, 2009).

Due to the concentration of industry/business, and regional disparities, most regions did not have adequate self-sustaining resources and motivation, and were dependent upon the growth of branch factories or small and medium-sized firms that were under the control of large enterprises or headquarters in the Capital Region. There was also

Table 2. Urban and Rural Household Income

(Unit: thousand KRW at current prices)

| | 1970 | 1980 | 1990 | 2000 | 2005 | 2007 |
|----------------------|------|-------|-------|---------|---------|---------|
| Urban Households (A) | 28.1 | 234.1 | 943.2 | 2,386.9 | 3,250.8 | 3,675.4 |
| Rural Households (B) | 21.3 | 224.4 | 918.8 | 1,922.7 | 2,541.9 | 2,663.9 |
| B/A ratio (%) | 75.6 | 95.6 | 97.4 | 80.5 | 78.2 | 72.5 |

Source: Korean National Statistical Office, *Social Indicators in Korea*

a serious lack of business activities and professional services in non-Capital Regions. Therefore, the economic and industrial bases in less prosperous regions were too weak to stimulate self-reliant economic growth (Kim, 2009). Furthermore, the relative decline of the local economy intensified with the continuous outflow of the rural population and the increase in an aging population in rural areas. Under these circumstances local governments could hardly take any initiative for stimulating the local economy. Most regional economic policies, industrial programs, and infrastructure investments were undertaken by the central government (especially by the Ministries of Land and Transportation).

Although Korea has pursued a knowledge-based economy on the basis of glocalization and innovation system policy since the late 1990s, one of the major problems in the Korean economy was the population concentration in the Capital Region. Inactiveness of local economies in the industrial sector contributed to population concentration in the Capital Region (including the Seoul metropolitan area) and reduced overall national competitiveness. To solve these problems, the Korean government enacted various policies for local industrial development: location support initiatives, such as developing industrial complexes, financial support, technology-innovation support, human resources development support, and marketing support programs for local small & medium size enterprises (SMEs) through both the central & local governments.

One key regional industrial policy was the Regional Industrial Promotion Projects (RIPPs). This policy, initiated in 1999, was predicated upon a cluster-based, innovation-driven type, and

industrial development strategy, which focused on concentrating an all-out effort of the region for high-tech, high value added, and high productivity business. In addition, the RIPPs stressed a close partnership between local enterprises and local governments, and the construction of a collaborative knowledge network through the Industry-University-Research Institute (Choi & Hwang, 2005). The purpose of the RIPPs was to promote the growth of a local SME-centered industry by choosing a Strategic Industry having a high possibility of growth in each region and then by providing support from the central government for the formation of an industrial cluster. The RIPPs have not been rated very highly in terms of their performance, even though they were created with the intention of aiding the growth of regional Strategic Industries by providing technology innovation and administrative support to regional enterprises (Choi & Hwang, 2005). This critical evaluation is mainly based on the weak linkage system of the planning function and evaluation management in carrying out the project. To solve this problem, and to perform the function of viable planning & evaluating the management of RIPPs in the 9 Provinces which were initiated in 2002, a Regional Innovation Agency (RIA) was established in each metropolitan city and province (Kim, 2009).

The RIA was founded to perform the function of planning and evaluating management for increasing the performance of RIPPs, under the supervision of the Ministry of Commerce, Industry, and Energy (MOCIE, now Ministry of Knowledge Economy, MKE). In addition, under the direction of, and with support from local government, with the primary objective of managing the outcomes of

Table 3. Regional Industrial Promotion Projects of 4 Regions in Korea

(Unit : Billion KRW)

| Stage | District | Total Amount Invested | Projects | Infra | TechDev | Training | Business Service |
|---------------------------------------|-----------|-----------------------|-----------|-------|---------|----------|------------------|
| First (1999~2003) National Account | Busan | 386.6 | Footwear | 19.6 | 42.5 | 6.2 | 27.4 |
| | Daegu | 680.0 | Textile | 152.3 | 30.5 | 36.7 | 12.5 |
| | Gwangju | 402.0 | Optical | 128.9 | 40.0 | 13.2 | 28.2 |
| | Gyeongnam | 428.4 | Machinery | 29.4 | 80.0 | 10.4 | 44.5 |
| | | | | 330.2 | 193.0 | 66.5 | 112.6 |
| Total | | 1,897.0 | | | | | |

Source: Ministry of Commerce, Industry & Energy, 2004

RIPPs, the RIAs were established and operated in 13 provinces where the projects have been carried out. In addition the RIA carried out evaluation management work jointly with ITEP, an organization of evaluation management under the auspices of the central government. It has not yet secured an independent legal authority in the operation of the organization in each province, and currently assumes a pro forma position within the affiliated organization of an existing institution such as a Techno-park. The major central government-leading programs that fall under this rubric include Techno-park construction projects by the MOCIE (Choi & Hwang, 2005).

The fundamental direction of government support for the RIPPs was focused on each project raising its innovation ability. The RIPPs began in 1999, in the first phase, in 4 districts, including Daegu, Busan, and Gwangju metropolitan cities, as well as Gyeongnam province. The structural reform of the textile industry in Daegu and of the footwear industry in Busan, the high value-added structural reform of the machinery industry in Gyeongnam, and the optical industry in Gwangju were included. Here, a total 1,897 billion Korean

Won (KRW) was invested for construction of public infrastructure, support for technology development, manpower education & training, and marketing support (See Table 3).

In this first stage of the RIPPs, four main sectors were developed to support local industries: infrastructure, technology development, training labor force, and business service. The total budget in the RIPPs between 1997 and 2003 was about 1.9 trillion KRW including 1.1 trillion KRW from the central government, private investment and local governments' funding. In terms of the budget volume, investment in the infrastructure sector was about 47%; investment in the technology development was 27.5%; investments in business service and training labor forces are 16.1% and 9.4% respectively (Kim *et al*, 2007).

Since the late 1990s, Korea has been promoting regional industrial policies with the aim of creating clusters for innovation-oriented regional development. The evaluation of these first stage projects carried out from 1999 and 2003, showed that they contributed to raising the capabilities in regional industry and revitalizing the regional economy in three different ways. First, a

foundation for a structural reform of regional industry focused on pilot production facilities and research development equipment was established. Second, owing to the technology development, there was a noticeable increase in sales. The third, with the construction of a foundation and system for manpower development which corresponded to the needs of regional industries, various requirements for manpower had been met (Choi & Hwang, 2005). However, the lack of the entire system approach such as legal institution including Special Acts and Account, etc. to deliver specific programs or projects was drawback.

3. Systematizing Phase of the Regional Industrial Policies

In 2003, the Korean government introduced a new regional development policy that was different from previous ones. Since 2003, the Participatory Government (Roh Administration, 2003-2008) has carried out 'the balanced national development policy' as one of its highest priority political goals (Seong, 2007). In fact, it is the first implementation of regional development policy in Korea, because systematic regional policies based on Special Acts have been introduced, which was a breakthrough. The Special Act on Balanced National Development passed by the National Assembly in December 2003 provided a very important legal rationale for resolving the imbalance among different regions and to support self-sustainable localization. In accordance with the Special Act on Balanced National Development, the Presidential Committee on Balanced National

Development (PCBND) was established in April, 2003 played a pivotal role, and a five-year plan for the balanced national development was created in 2004. It was also important to note that the Balanced National Development Special Account was established in accordance with the act to secure stable sources of financing for balanced national development and national cluster creation. Regional policies were carried using special accounts and a newly-organized governance system.

For the balanced regional development, industry is the most important element of policy tools (Seong, 2007). This is due to the fact that regional industries are not properly fostered and many problems related to investments, jobs, and financial independence can arise. Based on such an understanding, the government had made each regional authority select and foster four Strategic Industries under the 1st Five-Year Plan for Balanced National Development. Each region has been promoting various industries, including high-tech industries, like information and telecommunication, biotech, and robotics, and key manufacturing industries, such as the automobile, shipbuilding, and machinery industry, as well as service industries, ranging from tourism to culture, film, and medicine (See Figure 1). As of now, the implementation of the policy for fostering regional Strategic Industries has been positively viewed. Another industry policy of great significance is the cluster policy. It is an effort to correct the errors of industrial and science and technology policies of the past, and it is an attempt to greatly heighten industrial productivity.

In 2000, when the first-stage projects in 4 Metropolitan Cities and Provinces had been carried

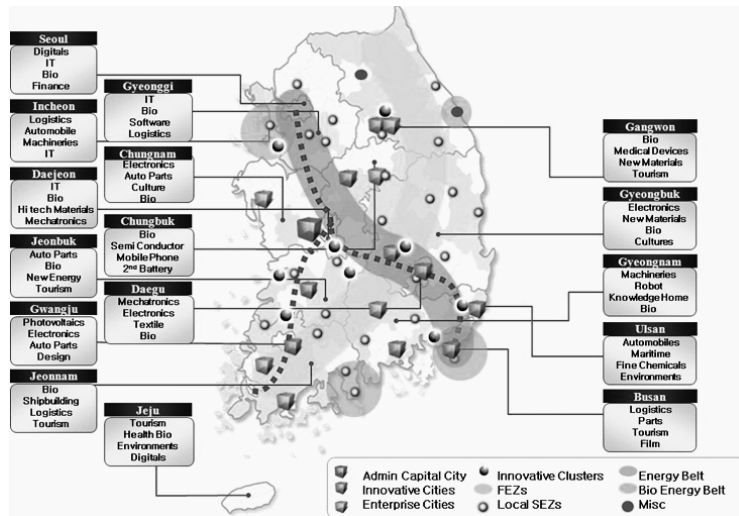


Figure 1. Strategic Industries in 16 Metropolitan Cities and Provinces

Source: Ministry of Commerce, Industry & Energy

out, the necessity of implementing RIPPs throughout the country in addition to the 4 regions was raised. Therefore, after a feasibility study, the projects were expanded to the 9 Metropolitan Cities and Provinces in non-Capital Regions. The time span of the project in 9 regions was five years from 2002 to 2006, and with the 9 regions a total of 1,547 billion KRW, including national and local expenditure, as well as private funding, were allocated to be invested (See Table 4).

The government pushed for regional industry promotion through its support for technology development, manpower cultivation, replenishment of innovation infrastructure, and business support services, etc. The projects were expected to enhance industrial growth, and industrial accumulation in the regions. 32 regional Strategic Industries were identified in 13 Metropolitan Cities and Provinces until 2008. As of 2005, they accounted for 17.9% of total

manufacturing industry in terms of the number of workers and 22.6% of total added value. With respect to financial support, the government provided a total of 2.56 trillion KRW over the past decade from 1999 to 2008. The four regions of the Daegu, Busan, Gwangju metropolitan cities, and Gyeongnam province were provided an annual average of 41.3 billion KRW per region and 14.6 billion KRW per Strategic Industry. With those projects, the amount of financial support ranged from 2.6 billion KRW a year for the Bio industry in Chungnam province, to 28.7 billion KRW a year (in the 2003-2006 periods) for the optical electronics industry in Gwangju metropolitan city. The central government also provided an annual average of 13.7 billion KRW per region and 6.5 billion KRW for each of the 19 Strategic Industries in the 9 regions (MOCIE, 2008). About half of the budget was invested in infrastructure, including regional innovation centers and equipment systems. In the

Table 4. Regional Investment by Project Type

| | 4 regions | | 9 regions (2002~2007) | Regional Infrastructure program | Total |
|---------------------------|--------------------------------------|--------------------------------------|--------------------------|---------------------------------------|--------------|
| | 1 st phase (1999~2004) | 2 nd phase (2004~2008) | | | |
| Total | 7,023(100) | 9,496(100) | 7,462(100) | 1,619 | 25,600(100) |
| Innovation infrastructure | 3,302(47.0) | 3,075(32.4) | 5,212(69.8) | 1,194 | 12,783(49.9) |
| R&D | 1,930(27.5) | 5,162(54.3) | 1,810(24.3) | 367 | 9,269(36.2) |
| Corporate support service | 1,791(25.5) | 1,091(11.5) | - | 59 | 2,941(11.4) |
| Industry Planning Agency | - | 168(1.8) | 40(5.9) | - | 608(2.3) |

Source: *Ministry of Commerce, Industry & Energy, 2007; Kim, 2008*

9 regions, 75.7% of the budget was invested in innovation infrastructure, including 69.8% in regional innovation centers and 5.9% in Strategic Industry Planning Agencies, due to their weakness in their regional industrial innovation bases. In the four regions' second-phase project, 54.3% of the budget was invested in R&D (Kim, 2008).

In addition to Strategic Industries, some strategies set the basis of the Revitalization Business (RB) to promote autonomy and prosperity of the underdeveloped regions (Seong, 2007). The RB pursued the strengthening of innovation capabilities of the underdeveloped regions. The RB also developed the various forms of industries by combining and fusing primary (production), secondary (processing), and tertiary (distribution and experience) industries to maximize the competitiveness of agriculture and rural areas (Seong, 2007). Finally, to the RB end, rural urban interaction and cooperation were vitalized to promote the mutual prosperity of rural and urban communities including the quality of life.

In the 4 regions, the second stage projects were carried out from 2004. In the second stage, an

additional Strategic Industry was chosen which would then be promoted by actively utilizing an innovative infrastructure constructed in the first stage. The main direction of the second stage project, like that of the first stage, was formulating and revitalizing an industrial cluster through the strengthening of the cluster and networking among the innovation subjects, giving priority to the regional Strategic Industry (MOCIE, 2004). For that, a total 2,266.9 billion won would be invested from 2004 to 2008.

Under the balanced development policy, there was also the specialized regional development zone system (Seong, 2007). The system enhanced private-sector investment in certain areas by significantly relaxing regulations. The system encouraged private-sector investment in certain areas by significantly relaxing related regulations. Sixty-five regions nationwide had been designated as specialized development zones, as of the end of 2006, awaiting the inflow of private capital of approximately 2 trillion KRW (Seong, 2007). Each local government selected about ten traditional industries as Region Specific Industries for initiating the regional economy. Region Specific Industries

were selected by local governments, but they were proposed by basic self-governing bodies. Local governments were in charge of making development plans for the Region Specific Industries in light of an inhabitant-driven endogenous development scheme. In developing Region Specific Industries, the institution of Regionally Specialized Development District was utilized. Regional products were developed by using region specific resources in the unit of basic self-governing bodies (Kim, 2005). The results of the selected Region Specific Industries showed that food related industries were the most prevalent followed by tourism, culture, and agriculture.

The succeeding new government (Roh Administration) continued to focus all its capabilities on the development of regional industry by establishing clusters with regional innovation systems. As of the end of 2003, there were 525 small and large industry complexes in Korea. Industrial complexes comprised 71.6%, 49.2%, and 37.6% respectively of exports, production in manufacturing industries, and employment in manufacturing industries (Kim, 2008). However, most industrial complexes focused on production alone, and they were heavily dependent on the parent companies located in the Capital Region for R&D and corporate support. The government was planning to support R&D functions and corporate support services in production-focused industrial complexes, and to build a cooperative network among industrial, academic and research sectors, to transform them ultimately into innovation clusters. In order to achieve this objective, seven industrial complexes would be designated as pilot complexes and priority projects would be

implemented. The pilot project was then extended to other parts of the country.

At the core of the transformation of an economic structure into an innovation-driven one was the construction of regional innovation systems (RISs) (Kim, 2009). For the successful construction of RISs, the government organizes the Council of Regional Innovation as a representative agent of each region. This council, consisting of firms, universities, research institutes, local governments, civil associations, and regional press, would deliberate the vision, strategy, and major instruments for the development of the region in question. As of the end of December 2006, there were 14 Regional Innovation Councils with 780 active council members nationwide. Also, at the local level, there are 132 organizations with a total of 4,123 active council members (Kim, 2008).

Moreover, the support of the central government was also focused on the Strategic Industries of each region, and particularly on policies for strengthening technology innovation support centers, fostering technology staff, and bolstering research and development capabilities. Even though the same industry might be chosen as a Strategic Industry by MOCIE, the industrial development underway focused on different sectors in each region according to the regional situation, and the central government was focusing on the activation of links among the industrial clusters. Based on the cluster policy, structural sophistication of regional industries and the business creation in Strategic Industry sectors would be actively promoted. Together with this, efforts to attract foreign investment would be carried out in connection with the regional industries to help both foreign investors and each

region benefit fully from industry integration.

In sum, the most breakthrough changes in regional policy in the Roh administration are the innovation system building in regional policy by the Five year Balanced National Development Plan and establishing the Special Acts, Special Accounts, and Governance. In order to develop regional strategic industries, the government has targeted some industries based on regional specialties and raised in many-sided ways including regional innovation capability building. It was very meaningful trial but a bit too ideal in that the policies pursued somewhat uniform balance and lost some efficiency in the aspect of policy delivery.

4. Expansionary Phase of the Regional Industrial Policies

In the Lee administration, the regional development policies entered a new phase due to the world paradigm change in regional policies. Efficiency in regional development was considered and thus the ‘mega region’ idea has been introduced in the UK, France, and Japan to increase the effectiveness in implementing regional development policies. In addition, the objective of regional development has been shifted from ‘balance’ to ‘competitiveness’. In order to enhance regional competitiveness, France has tried to set local hubs as competitive growth poles. These paradigms took the form in ‘the 5 year Regional Development Plan’.

As stated, new regional policy framework has been realized in three-layers: Supra Economic

Region, Economic Region, and Local Area. The Supra Economic Region strategy is to create five Belts for an open economy to interact with foreign countries: three Coastline Belts, one Border Belt, and Inland Belt. Thirty Leading Infrastructure Building Projects in this layer are key projects. The Lee administration would like to facilitate economic exchanges and cooperation between regions and encourage a win-win development through functional connection within Supra Economic Regions by establishing interregional infrastructure. The Economic Region strategy is to regroup 16 Metropolitan Cities and Provinces into 7 Economic Regions. Most regional industrial policies pursued in this layer are mainly industrial policies lead by the MKE: 1) nurturing Leading Industries in each Economic Region, 2) building human resources by hub universities matching with the Leading Industries in each Economic Region. The Local Area Strategy is basically consistent with the development strategy for lagging areas. To improve the standard of living in 163 Local Areas, five top-down exogenous tasks and five bottom-up endogenous development tasks were carried out: Four-rive revitalization project, resource recovery facility in Incheon, Gumi Multicultural Family Support Center, Geochang Special Education Zone, etc.

Again, regional industrial policies are carried out by the MKE primarily in three dimensions: LINPs in Economic Regions, RIPPs in provinces, and Region Specific Industry Projects (RSIPs) in Local Areas. In terms of budget size, the LINPs is the largest. In 2011, the budget for the LINPs is about 385 billion KRW in the mega region account, which is mainly led by the MKE. Following this is the amount earmarked for the RIPPs with 269 billion KRW in

Table 5. Budget for Regional Industrial Policy

(Unit: billion KRW)

| | Leading Industry (Economic Region) | | Strategic Industry (Province) | | Region Specific Industry (Counties: local area) | |
|-------------------------------|---------------------------------------|------|----------------------------------|------|--|------|
| | 2010 | 2011 | 2010 | 2011 | 2010 | 2011 |
| Special Account (Mega Region) | 275 | 385 | 331 | 269 | 109 | 112 |
| Local Account | | | 202 | 171 | 37 | 34 |
| Private Account | | | 18 | 16 | 51 | 36 |
| Total | 275 | 385 | 551 | 456 | 197 | 182 |

Source: *Ministry of Knowledge Economy*

the mega region account, and 456 billion KRW in the local account and private investment account. The amount for RSIPs is relatively smaller than the other two, 112 billion KRW in the mega region account and 182 billion KRW in total in 2011. Local governments participate in both the RIPPs and RSIPs by matching budgets. The center-of-gravity in the budget has moved from the RIPPs to the LINPs, as the paradigm for regional policies shifts to the mega region for more effectiveness, efficiency and industrial competitiveness.

First of all, the RSIPs established in the Roh administration have been succeeded in the Lee administration. The root of this project was the 'Development Project for Lagging Area' in the Kim administration and has been evolved into the 'Regional Innovation System (RIS) Project' and until now. The purposes of this project are to create decent local job through region specific industry and to promote local economies. According to the MKE, the performance of this project is considerable. Shown in the following table, the technology commercialization has been doubled between 2007 and 2010 (See Table 5). The sale volume increased 71.6 billion KRW in 2007 to 433 billion KRW in 2010, which is about 600% of

growth. The number of employees has been also doubled, 1,271 in 2007 to 2,377 in 2010. The case of Daejeon Lens RIS team, the consortium team of five organizations developed the materials for eye glass and thus substituted imports and thus produced OVIUS glass.

The RIPPs have been successful since 1998, and four industries were selected in each province, as shown in Figure 1. The 18 Techno-parks have a very important role to playing in nurturing the Strategic Industries in R&D project funding, education programs, and business support. Initially, 6 pilot Techno-parks were developed in 1997, and then at present, 18 Techno-parks throughout the nation have been designated as of 2010. A Techno-park aggregates the industrial infrastructure and provides the integrated business support through the collaboration network with local universities and research institutes. Four main functions of techno-parks are policy planning, business support with incubating, R&D support, and training human resources. As the performances of RIPP, new industries such as Optical electronics is developed successfully in Honam Economic Region. As a result, photovoltaics and LED industries have been

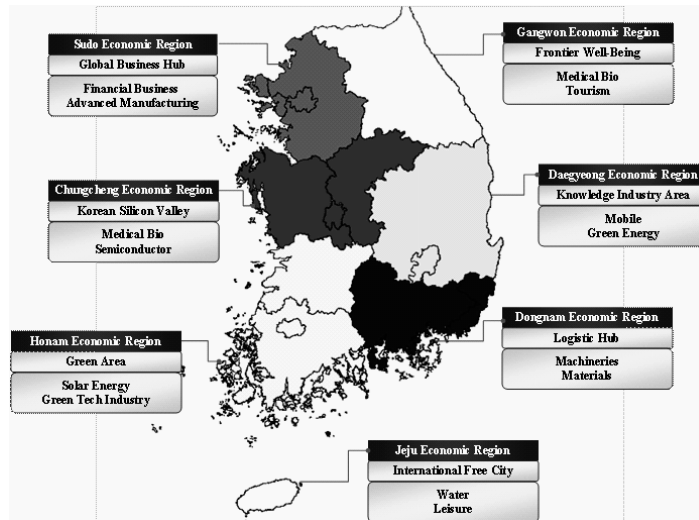


Figure 2. Leading Industries in Economic Regions

Source: *Ministry of Knowledge Economy*

concentrated in this region, which is very nationally competitive now. Most performances in the RIPPs could be reflected into the performances of Techno-parks, which is a regional innovation organization.

The LINPs have been carried out based on the Economic Region. In order to build up Leading Industries, the Leading Industry offices played an important role: mostly in selecting R&D projects and providing funding and business supports. The LINP was introduced in 2009 and is now in its 3rd year. As shown in Figure 2, the Chungcheong Economic Region selected the Bio-medical and semiconductor industries as their Leading Industries to realize a ‘Korean Silicon Valley’, etc. Just like RIPP, there is no budget allocation from the central government to the Capital Economic Region in the LINP. According to the Korea Institute for Advanced Technology (KIAT), the performance of the LINPs is very impressive. The

sales of companies supporting the LINPs was increased by 14.5% from 2006 to 2008. Companies in the Daegyeong Economic Region were especially successful, growing 23.8% annually in this same time period. The lowest growth rate is still over 10%. Sales growth rates dropped due to the global financial crisis at the end of 2007. However, companies in the Daegyeong Economic Region grew 16.2% annually, which is a big jump. On the other hand, companies in Dongnam Economic Region suffered the biggest impact from the crisis. Companies also reduced operating costs by 291 billion KRW in the domestic market over last three years, and 46 million USD in the international market through R&D supported by Leading Industry projects.

Most regional industrial policies are carried out through the MKE with specific projects. More specifically, a couple of important projects except Leading Industry, Strategic Industry, region specific

industry, and inter-provincial cooperation nurturing projects are introduced here. First, 'the enhancing competitiveness of industrial clusters project' is designed for industrial complexes. Main contents of this project are to build up the collaborative network among industry · university · research institute, to induce inter Economic Region cooperation, and to accelerate accumulation of knowledge based industries. Second, 'local investment promotion project' is designed to help local companies by subsidizing small portion of salaries in limited term. For example, government provides financial support when local companies hire advanced human resources for new investment and provides incentive package to companies relocating from the Capital Region to non-Capital Regions only if those companies are involved with industrial restructure in the Capital Region. Because some companies discharging air or water pollution are urged to relocate. Third, 'the Regional Innovation Center project' was established in 1995 and has been carried out so far to raise the innovative capabilities in local universities and companies by providing facilities such as labs for research and development. The fourth, 'the university support project for collaboration between local universities and local small and medium enterprises' was launched in 2005. To encourage collaborative cooperation between universities and SMEs, it provides business supports in technology development and company tailored employment education associated with 17 local universities in the non-Capital Regions.

Another main task of MKE in fostering regional industries is to restructure industrial complexes established since 1964 in Korea, which is so called

'quality of working life (QWL)'. According to the Korean Industrial Complex Corp (KICOX), there are 901 industrial complexes in all over the country including 40 national and 434 local complexes at the end of 2010. Industrial complexes have played a pivotal role in Korea's development. In 2010, the total sales of the enterprises in industrial complexes are 699 trillion KRW, which is about 62% of the sales in national manufacturing industry. Those firms covered 72% of exports, which is about 280 billion USD. The number of employees in industrial complexes is 1.47 million, 43% of total employees in Korea. For example, in 1960s, textile and sewing industries were occupied in Guro national industrial complex in Seoul. In 1970s, industrial complexes in South East coastline has been established and focused on steel at Pohang, electronics at Gumi, machineries at Changwon. Parts and material industries were developed in 1980s and automobile were nurtured in 1990s. Since 2000s, the IT industries were developed in industrial complexes around the Capital region. However, since the business environment has been changed, it is necessary to restructure old industrial complexes. There are 48 industrial complexes are over 20 years old in 2009 of which basic facilities such as parking spaces, loading docks, and local roads are in bad situation. Moreover, the demand for amenity facilities such as gyms, green fields, leisure centers and innovation facilities such as universities and labs, etc. is getting bigger. As a result, Guro Industrial Complex established in 1964 in Seoul has been restructured since 1997 to 2008. Its main industry sector has been changed from textile to digital with the changes in legal institution. Therefore, the Lee administration stated to promote the restructuring

project for these old industrial complexes and selected four industrial complexes in 2009 as initial stage: Banwol-Sihwa established in 1977, Namdong established in 1980, Gumi established in 1969, and Iksan established in 1970. The restructuring process was started in 2010 in four sectors: 1) business support such as business center, R&D center, logistics center, and convergent center for research and business, 2) infrastructure such as sewage system, waste recycling system, road expansion, parking space, etc. 3) amenity facilities such as employee dormitory, gym, child care, leisure center, 4) industry restructure such as knowledge center. The knowledge center is actually a labor intensive production complex for urban low income residents. Since Banwol-Sihwa and Namdong industrial complexes are located suburb in Seoul, more facilities related infrastructure and amenity are demanded. On the other hand, innovation facilities such as the university-enterprise conversion center are demanded more in Gumi located in Gyeongbuk and Iksan located in Jeonnam.

In sum, the Lee government has attempted to enhance regional competitiveness by nurturing regional industries with scale economies and appropriate spatial scope, which is to improve efficiency in policy delivery and is on-going.

5. Summary and Challenge

The emphasis on local autonomy, and the fallout from the Asian financial crisis brought about the necessity for a 'regional development' concept and thus the regional industrial promotion projects

were successfully introduced in 1998. Accordingly, the Roh administration (2003-2008) established regional development policy framework: Special Act of the Balanced National Development, the Special National Account, the Balanced National Development 5 year Plan, and a system of governance. Especially, during the Roh administration, Strategic Industries have been nurtured in each region through the innovative establishment of Techno-parks. The hottest catchwords in this period were 'innovation' and 'balance'. However, due to the uniformity and inefficiency in balanced national development policies, a new paradigm of regional competitiveness was triggered. Therefore, the Lee administration adjusted the objectives of the regional development policy from 'balanced' to 'regional competitiveness'. Therefore, the spatial scope of such regionally-oriented policies has been switched: 'Leading Industries' in Economic Regions, Strategic Industries in Provinces, region-oriented special industries in Local areas. In addition, this decentralization has been speeded-up with the introduction of a larger volume of block grants to give more policy-making authority to local governments. As stated by the World Bank (2009), development policies were focused on national dimensions up to 1998 and point-wise regional development carried out around economic density to improve the overall national economy.

There are fundamental budget constrain in regional development policies. The budget for regional industry nurturing is quite small comparing to the entire budget, which means that tail cannot wag a dog. Nevertheless, regional development policies in more specifically regional

industrial policies are very important in enhancing local governments' capabilities and still evolving. The current government faces a couple of challenges. First of all, the Lee administration prepares the 2nd stage of the LINPs. Since the 1st 3year long Leading Industry project will have terminated in early 2012, the 2nd 3year long projects are planning by the MKE. The most important changes comparing to the 1st stage of the Leading Industry is how to support. It means that the business friendly supports should be approached ecologically. Regional industrial policy should build up the ecological business system to enhance more organic and business tailor-made support, by mutual interaction, which make it possible for creative development. Second, it is necessary to accelerate decentralization through more authority transfer regarding regional development policies. In order to have full-fledged autonomy in regional development policies especially in planning and carrying, the central government needs to guide local governments and wait for a while until local governments mount their own policies. Third, it is important to communicate actively between governments, agencies, and any other entities conducting integrated regional development policies rather than sectoral policies. Fourth, it should be consider job-creation development policies to enhance of small and medium enterprises (SME) networking large firms including high skilled labors. The last, policies regarding on targeting specific industries has been successful so far, but not sure for future. Maybe some indirect policies such as firm oriented business support based on ecological industrial system would be an alternative. Therefore, it is time to consider the next phase of regional

development industrial policies with policy consistency.

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지역산업 육성정책에 대한 고찰

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요약: 우리나라는 한국전 이후 세계 경제를 따라잡기 위하여 수도권과 동남권 일부 지역을 중심으로 경제개발 정책을 추진하여 왔다. 그 결과 수도권과 비수도권 간의 지역격차가 점차 커지게 되었고 문민정부의 출범 이후 지방자치제의 도입과 함께 비수도권 지역에서 해당지역의 발전에 대한 관심을 갖기 시작하였다. 국민정부의 출범과 동시에 4개(부산, 대구, 경남, 광주) 지자체에서 지역산업 진흥사업을 추진하기에 이르렀고 이것이 지역정책의 출발점 되었다. 이후 참여정부에서는 지역정책의 기반을 마련하였다. 국가균형발전을 실현하기 위하여 국가균형발전특별법 제정, 국가균형발전특별회계 신설, 국가균형발전 위원회 설립 및 국가균형발전5개년계획 수립 등 일련의 제도적 기반을 구축하였다. 지역산업 육성을 위하여 기존의 4개 지역 외에 9개 지역을 추가하여 4+9의 전략산업 육성사업을 추진하였다. 이후 현 정부에서는 세계적인 지역정책의 변화에 맞추어 보다 효율적인 정책집행을 위하여 획일적인 균형보다 지역경쟁력 강화로 정책목표를 수정하였고 지역정책의 공간범주 또한 규모의 경제에 맞게 초광역개발권, 광역경제권, 기초생활권으로 구분하여 차별화된 정책을 추진하였으며, 지방분권 강화를 위하여 포괄보조금 성격의 예산을 늘였다. 지역산업을 육성하기 위하여 광역경제권 수준에서 선도산업 육성사업, 시도 수준에서는 전략산업 육성사업, 기초생활권에서는 지역특화산업 육성사업을 추진하여 미래의 성장동력 확보 및 지역경제 활성화를 도모하였다.

이러한 지역정책의 중심에는 지식경제부가 주도적인 역할을 수행하고 있으며, 산업 육성을 통한 지역발전을 추진하고 있다는 점에서 다른 나라와는 차이를 보이고 있다. 이제 지역산업 육성으로 시작된 지역정책이 어느덧 13여년이 되어 정책의 성과를 바탕으로 정책 방향이나 추진전략을 되짚어 볼 때가 되었다. 본 연구는 그 동안 추진되어 온 지역산업 육성정책을 전체적으로 검토하고 향후의 정책 수립을 위하여 문제점과 수정보완 방향에 대하여 정리하였다. 우선 2012년과 2013년에 종료되는 선도산업과 전략산업 육성사업의 재편이 검토 중에 있다. 두 사업에서 선정된 산업들의 중복은 물론 지원프로그램 간의 중복 등의 문제가 표출되었기 때문이다. 또한, 단순한 기술개발 지원 등과 같은 재정보조보다는 산업생태계 구축 등 간접적이지만 기업의 자생력을 강화할 수 있는 지원 방안이 필요하다. 마지막으로 부처별로 분할된 각각의 부문별 정책이 아닌 지역산업정책 추진 주체간의 원활한 소통을 바탕으로 하는 포괄적인 지역산업 육성 정책을 마련하여야 할 것이다.

주요어: 지역발전, 지역산업정책, 지역균형, 지역경쟁력

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