

KOREA

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1. Introduction

According to many experts, in the future, change will occur at an unprecedented pace, and Korea stands at the center of this change. Located in East Asia, the world economy's epicenter of change, Korea is the world's last remaining divided nation as well as the world's only country to change from ODA beneficiary to contributor. With a trade volume of USD 1 trillion, it is also the world's 9th largest trader. All of these facts show that Korea has changed more rapidly than any other country. And with such rapid change, it is imperative for Koreans to take up new challenges and search of new opportunities for the sake of the current and future generations. For this reason, this paper seeks to examine the current global megatrends and changes expected to take place in Korea. It provides information on current global megatrends and forecasts that changes that will take place in Korea in the following areas based on strategic foresight announced by leading nations and institutions.

- Change in the global economic order
- Intensification of energy and environmental issues
- Advancement of science and technology and change in the industrial structure
- Change in the demographic structure
- Emergence of new conflict factors
- Change in social values and sentiments

2. Global Megatrends and Changes Expected to Take Place in Korea

Change in the global economic order

The globalization of socio-culture has become an important trend that has occurred after the globalization

of trade and finance, and globalization of politics and corporations.¹⁾ As market economy systems based on competition becomes the norm across countries and regions, the trend of economic synchronization is expected to further intensify, while corporations will increasingly find themselves fighting a free-for-all stretching across borders and that their growth will depend on their ability to adapt to globalization. Amid all this, the progression of interregional economic integration will pick up speed.

Interregional economic integration began in Europe and the US, the two centers of the global economy, in the 1990s and has since continued to expand on a global scale to even include developing nations. Countries will competitively seek Interregional integration, leading to the establishment of an order of competition among regional blocs.

Interregional economic integration will inevitably lead to economic polarization as industries that possess competitiveness benefit greatly, while industries that lack competitiveness will suffer. Meanwhile, the influence of China, India and other rapidly growing Asian countries (BRICs, TVT, E7) and the coalition of socialist regimes of South America will increase in the global economy, which was traditionally centered around the US, Japan, and Europe. Korea, being situated in East Asia, stands at the center of all this change. Although it is unlikely that East Asia will undergo a rapid transition into a single regional market due to China and Japan's struggle for hegemony, market exchange will continue to increase. Between 2000 to 2010, Korea's trade with China increased by almost sevenfold, from USD 31.3 billion to USD 220.6, while trade with the US grew only 1.5 times during the same period.²⁾ This gap is expected to be maintained in the future. Korea's efforts to expand its market will also continue: Free trade agreements with Chile (2004), Singapore (2004), ASEAN members (2007), India (2009), EFTA (2006),³⁾ Peru (2011), the EU (2011), and the US (2012) have been effectuated,

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1) Six Key Trends Shaping Future Society, OECD, 2009.12.

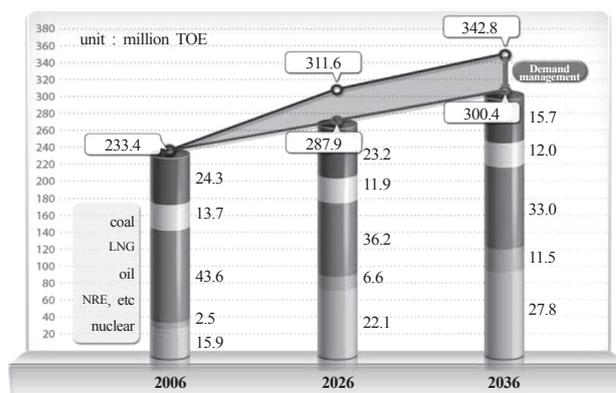
2) Export-Import Statistics, Korea Customs Service, 2012.2

3) European Free Trade Association : Switzerland, Norway, Iceland, Liechtenstein

while negotiations with Canada, Mexico, Australia, New Zealand, Columbia, Turkey, and the GCC⁴⁾ are underway. Thanks to such efforts, the country's trade volume grew from USD 77 million in 1950 to USD 1 trillion in 2011, and provided that there are no major disruptions, the upward trend is expected to continue, allowing Korea to reach a USD 2 trillion trade volume by 2020.⁵⁾ However, in order to achieve such a figure, Korea must place emphasis on resolving the socio-economic issues of developing new growth drivers, enhancing the competitiveness of small and medium-sized enterprises, and creating new jobs.

Intensification of energy and environmental issues

The world's demand for energy and natural resources rises steeply due to the rapid growth of China and India, but the amount of energy and natural resources that can be exploited is finite. Thus, competition to secure energy and natural resources will intensify on a global scale. International oil prices have stabilized to below USD 100 per barrel thanks to the worldwide recession, but it is likely that they will continue to exhibit an upward trend when the global economy begins to pick up. Between 2007 to 2035, worldwide energy consumption will increase 49%, while total energy demand will increase 14% for OECD member states and 84% for non-member states.⁶⁾ Korea, being the world's 10th largest consumer of energy as well as the 5th largest importer of crude oil and 2nd largest importer of coal and LNG, relies on imports for 97.7% of its energy needs.⁷⁾ Such dependency on energy imports will be maintained in the future. However, the country continues to exert efforts to manage demand for primary energy and to improve energy efficiency, thanks to which the average annual growth of energy consumption will be at 1.1%, lower than the 1.6% under business-as-usual (BAU) conditions. Korea's energy consumption is forecasted to reach 340 million TOE in 2030, as it continues to lower its dependency on fossil fuels and



Source: National Energy Committee, 2008.8

Figure 1 Energy demand forecast and energy mix

greatly increase the use of clean energy (nuclear, NRE, etc.).⁸⁾ In 2008, Korea established the Korean National Energy Master Plan and has since executed policies to reduce the use of fossil fuels and increase the use of clean energy. Specifically, it plans to reduce its percentage of oil use from 41.6% to 35%, coal from 27.4% to 24.4%, and LNG from 14.8% to 13.7% in comparison to 2008 levels. On the other hand, it plans to increase the use of nuclear power from 13.5% to 23.6%, NREs excluding hydro power from 2.2% to 4.5%.

In addition to energy issues, environmental issues such as climate change are expected to become more serious in the future. Over the past 100 years (1906~2005), the average temperature of the earth's surface has increased 0.74°C, and according to a study by the UN IPCC, it will have increased by another 1.8~4.0°C by the end of the 21st century. As most countries have political systems in which an administration holds power only for 5 or 8 years, governments tend to use excessive amounts of resources in order to achieve recognition for economic growth in a short period of time, and this intensifies climate change.⁹⁾ Korea's increase in average temperature in the past 100 years is 1.5°C, higher than the global average. By 2100, the temperature of the Korean peninsula will rise by about

4) Gulf Cooperation Council : Saudi Arabia, Kuwait, UAE, Qatar, Oman, Bahrain

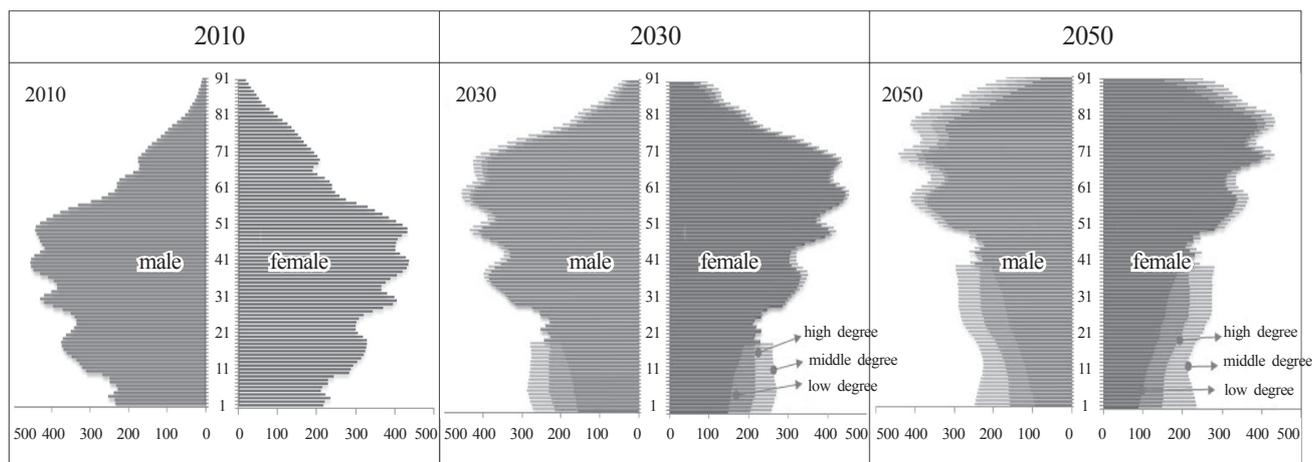
5) Ministry of Knowledge Economy, press release, 2012. 2. 3

6) International energy outlook 2010 - Highlights, EIA, 2010.5.

7) Energy indicator 2009, IEA, 2011

8) 1st Korean National Energy Master Plan, National Energy Committee, 2008.8.

9) State of the Future 2: 2020, a Time of Crisis and Opportunity, Kyobo, 2009.12.



Source: Statistics Korea, 2011.12

Figure 2 Population pyramid in Korea

2°C, leading to fluctuations in precipitation (-25~30%) which in turn translates into more droughts and floods. In anticipation of such change, the Korean government has confirmed and adopted a greenhouse gas reduction plan to reduce emissions by 30% from BAU levels by 2020.¹⁰⁾

Advancement of science and technology and change in the industrial structure

After the year 2020, the fields of IT, BT, and NT will advance at an exceptional pace thanks to convergence,¹¹⁾ including convergence of technologies in the IT, NT, BT, and material technology sectors, and this will create new industries and trigger revolutionary socio-economic changes.

Information and communication technology will continue to advance, leading to the development of quantum computers and bio computers that transcend previous limits in performance, while paradigm shifts will lead to a reorganization of the industrial structure so that industries that used to grow individually become increasingly interconnected vertically and horizontally. Korea, in line with this trend, has continuously increased investment in R&D in a

wide range of convergence technologies. It actively supports the development of new medical diagnostic and treatment technologies, humanoid service robots, and nano-bio materials, and is executing policies to develop other convergence technologies.¹²⁾ The Korean government has established the National Master Plan for Convergence Technology, according to which it is cultivating demand-oriented professionals, facilitating open-participation joint research projects, and establishing systems for intra-agency collaboration. It also continues to establish and execute various policies to tackle economic changes such as the replacement and creation of demand caused by convergence of industries.¹³⁾ In addition, the growth of knowledge industries (IT service, consulting, corporate service) and service industries (finance, education, legal, health, welfare, culture, etc.) will be notable, while de-industrialization will pick up speed, prompting the need to prepare. The percentage of manufacturing in Korea's industrial structure will drop from 27.8% in 2009 to 21.7% in 2040, while the percentage of knowledge-based services will increase from 25.5% in 2009 to 40.1% in 2040.¹⁴⁾

10) Plan for Setting Mid-term (2020) National Greenhouse Gas Reduction Goal, Green Growth Korea, 2009.8.

11) The Global Technology Revolution 2020, In-Depth Analyses, RAND, 2006

12) Kim Yoon-Jong et al, Study on the Current Status and Strategies to Support National R&D Projects on Convergence Technology, Journal of the Korea Technology Innovation Society, 2009

13) National Master Plan for Convergence Technology ('09~'13), National Science and Technology Commission, 2008

14) The Socio-Economic Structure of the Future and Strategies for National Development, Korea Development Institute, 2010.

Change in the demographic structure

As of July 2010, the world's population is 6.85 billion people.¹⁵⁾ The UN has forecasted that the world's population will reach 9.15 billion in 2050, and that 98% of the increase will come from developing nations.¹⁶⁾ Accordingly, the working age population will continue to increase in developing nations. In contrast, the US, Europe, Japan and other developed nations will experience population aging due to rising life expectancies and falling birth rates. According to Statistics Korea, Korea's population stands at 49.41 million as of 2010, and is expected to reach 51.44 million in 2020 and peak at 52.16 million in 2030, after which it will drop to 51.09 million in 2040. Korea's population growth rate will continue to fall, from 0.84% in 2000 to 0.46% in 2010, 0.28% in 2020, 0.01% in 2030, and reach -0.39% in 2040. Factors such as socio-political phenomena and change in values will interact to result in birth rates and population aging, each at the lowest and highest in the world. The percentage of the elderly above the age of 65 will increase from 11.0% in 2010 to 24.3% in 2030, and reach 37.4% in 2050.

The decrease in the working age population due to low birth rates and population aging will have significant impact on the labor and financial markets as well as national finances, the results being a slowdown in economic growth, increase in social burdens, and degradation of the quality of life.

Korea's working age population grew from 13.70 million (54.8%) in 1960 to

35.98 million (72.8%) in 2010. The number is expected to peak at 37.04 million in 2016, after which it will continuously decrease, bringing the total working age population down by 10 million in 2050 to reach 21.87 million (49.7%) in 2060. The social problems caused by the resulting increase in foreign workers and multi-cultural families will speed up socio-cultural change.¹⁷⁾ In response to the changes in the demographic structure, in October 2010, the Korean government established the 2nd Basic Plan

for Low Fertility & Population Aging and announced that in an effort to resolve the low birthrate issue, it would drastically increase financial support for female workers - childcare support, etc.

Emergence of new conflict factors

As emerging countries achieve technological advancement in the process of their economic growth, more countries and organizations will have access to the knowledge required for producing nuclear, biological, and chemical weapons as emerging countries, raising the probability of weapons of mass destructions actually being used. Claims by North Korea and the such for nuclear sovereignty for peaceful use of nuclear technology will encourage other countries to seek nuclear development as well, raising fears of nuclear proliferation and triggering change in the world's political order. This will ultimately lead to increased instability and uncertainty in global politics. Korea still remains in direct confrontation with North Korea, and the two countries are still locked in an arms race. While Korea has exerted efforts to improve inter-Korean ties through the North-South Joint Communiqué as of July 4, 1972, the Korean National Community Unification Plan, the 1990 summit meeting, and the Kim Dae-Jung Administration's Sunshine Policy, the unstable armistice continues to be maintained. From North Korea's development of nuclear weapons and its sinking of the Cheonan, a Korean military vessel, confrontations small and large continue to occur, and these continue to create a situation where Korea cannot exclude the possibility of an accidental or intentional clash.

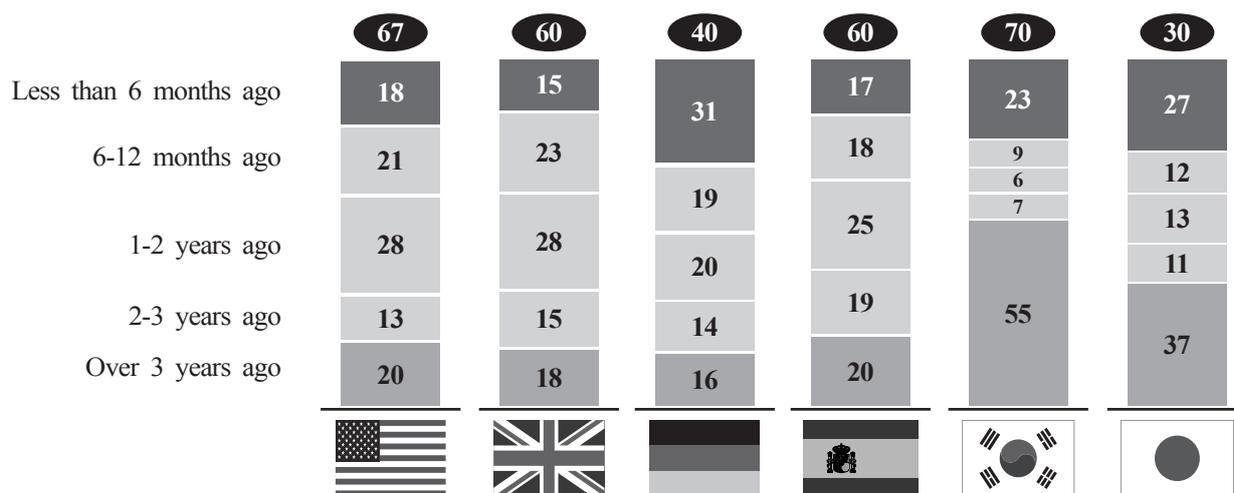
In addition, uncertainty over the possibility of the stabilization of the Kim Jong-Un Regime remains, making it likely for inter-Korean tensions to continue for the time being.¹⁸⁾ The Korean government's position is to maintain a leading role in inter-Korean issues and strengthen communication with neighboring countries that are directly involved, under the banner of a 'proactive reunification policy'. It also plans to

15) U.S. Census Bureau, 2010. 7.13

16) World Population Prospects, 2003

17) Estimated Future Population: 2010~2060, Statistics Korea, 2011.12

18) Eom Sang-Yoon, The Death of Kim Jong-Il and the Future of the Six-Party Talks, Sejong Commentary, Sejong Policy Studies, 2011. 12



Notes: Figures in dark circle = SNS subscription rate / Unit for other figures, %
 Source: McKinsey

Figure 3 SNS service subscription rates for selected countries

extend and maintain dialogue channels with North Korea through continuous humanitarian support and civilian-level exchange, while building political/military trust, providing assistance for North Korea’s economic recovery, and increasing cultural exchange to ensure mutual prosperity. Through such multi-faceted efforts, the Korean government seeks to set the foundation for reunification.¹⁹⁾

If inter-Korean issues are external conflict factors faced by Korea, youth unemployment and conflict between Koreans and immigrants over jobs are likely to emerge as new conflict factors. When counting students preparing to enter the job market, and the unemployed who have given up seeking jobs, Korea’s unemployment rate is 15.4%, which is very serious. Strife between youths and the elderly is likely to occur if baby boomers retire in a situation where youth unemployment remains an issue. In addition, Korea not only has a high percentage of low-income workers, it has a very high relative poverty rate, and its people tend to have low tolerance toward foreign workers. The number foreign of workers in Korea is expected to reach 3.5 million in 2040, and will account for approximately 8% of the entire

population.²⁰⁾ Therefore, conflict between foreign and Korean national workers is likely to intensify as more foreigners enter Korea to work.

Change in social value and sentiment

The global trend of change in terms of community is a change from a communal society into an individualistic one. Following Korea’s transition into an industrial society, traditional communities have ceased to exist, and members of the Korean society have increasingly become individualistic. The number of small and nuclear families, single and elderly households, elderly living alone continues to increase in Korea, and this trend will intensify the spread of individualism, weakening of traditional family values, increased attachment toward offspring, and prevalence of egoism.

The advancement of mass media, IT technology and communications encourages the spread of individualism, and ‘weak’ relationships with ‘familiar strangers’ made via the Internet and mobile devices will have more impact on our lives than ‘strong’ relationships such as that between family members. More than 900 million people around the world are

19) 2012 Ministry of Unification Report, Ministry of Unification, 2012. 1
 20) Future Vision 2040, Korea Development Institute, 2010. 6

currently subscribed to social networking services, and that number is expected to exceed 1 billion in 2012. Germany had the highest percentage of new subscribers within the last 6 months, at 31%, followed by Korea at 23%. In terms of SNS subscription rates, Korea ranked at the top with over 70% of the population being subscribers, followed by the US at 67% and the UK at 60%.²¹⁾ Meanwhile, the proliferation of digital media and preference toward digital over analog has promoted problems such as excessive individualism, Internet addiction, and the loss of human qualities behind anonymity. In order to overcome the limitations created by the spread of individualism, it will be necessary to build a new framework for social integration that helps maintains solidarity by emphasizing each individual's role as a member of society, respecting individualistic tendencies, and encouraging voluntary participation and division of roles.

Korean society's view towards the role of women is also changing rapidly. The continuous enhancement of women's human rights will significantly increase women's opportunities to receive education and participate in political and economic activities. The resulting enhancement of women's politico-economic status is regarded as one of the most effective solutions to social issues such as the working age population shortage, and increase in crime against women. The change of women's roles in society is also expected to lead to the introduction of products

and services aimed at freeing people from domestic duties and provide more job opportunities for married women.

3. Conclusions

It is highly probable that change in the future will not occur in a direction that we have anticipated. However, just because it is impossible to accurately predict the change, it is not prudent that we should not prepare for change at all. Korea must embrace change with a positive attitude, and thus create new opportunities and establish a culture that encourages a rising up to challenges. Fortunately, studies have shown that Korean youths tend to be optimistic towards that future. According to a survey conducted by the Korea Development Institute in 2010, over 80% of Korean high school students answered that Korea will become more successful than it is now in 30 years.²²⁾ In other words, Korea's next generations are welcoming change and are making appropriate preparations to grasp new opportunities that arise.

Such preparations are important, as the future will change in the direction that we exert our effort and passion. Just as humanity was able to set foot on the moon because it had dreamed to do so, we can build a new future if we dream and yearn to do so. That is why we must pay more attention to the future, set goals to build the kind of world we seek, and continue to work hard to achieve those goals.

21) i-Consumer Korea survey report, Mckinsey, 2011. 6

22) The Socio-Economic Structure of the Future and Strategies for National Development, Korea Development Institute, 2010. 3