



# 2014 ON KOREA

## VOLUME 7

Korea's Domestic Economy

Korea's Expanding Nuclear  
and Defense Ambitions

Regional Security Lessons  
and Issues



ON KOREA 2014:  
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Volume 7

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The Korea Economic Institute of America (KEI) is a leading not-for-profit policy outreach and educational organization focused on promoting economic, political, and security relations between the U.S. and the Republic of Korea. Located in Washington, D.C., KEI aims to broaden and deepen understanding among American policy leaders, opinion makers, and the public about developments in Korea and the value of the U.S.-Korea relationship. Since its founding in 1982, the Institute has organized programs across North America and published research on a diverse range of issues, including U.S.-Korea trade and investments, the North Korea nuclear program, alliance issues, the role of Korean Americans in U.S. politics, and China's growing role in the Asia-Pacific region. Through its publications, outreach programs, social media outlets, and website, KEI provides access to in-depth and current analyses about the two Koreas and issues impacting U.S.-South Korea relations.

### ***KEI's current accomplishments include:***

- Publishing three celebrated annual compilation volumes—*On Korea*, *Joint U.S.-Korea Academic Studies*, and *Korea's Economy*—used by experts, leaders, and universities worldwide.
- Bringing Korea experts and government officials to colleges and civic groups to lecture on timely events related to the Korean Peninsula and region.
- Reaching thousands of global listeners through its featured podcast show, *Korean Kontext*, where Korean and American policy, civic, and cultural leaders are engaged in a casual conversation about recent events, their work, their personal lives, and advice to those interested in the field.
- Holding the annual Ambassadors' Dialogue program where the Korean Ambassador to the United States and the U.S. Ambassador to South Korea embark on a series of private and public outreach programs on U.S.-Korea relations.
- Hosting a premier luncheon program every year on Korean American Day to recognize the contributions of the Korean American community to the U.S.-Korea alliance and to honor prominent Korean Americans who have excelled in their field or career.

For more information about these programs and upcoming events at KEI, please visit our website, [www.keia.org](http://www.keia.org).

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## PREFACE

The Korea Economic Institute of America (KEI) is pleased to issue this seventh volume of *On Korea*, compiling the KEI Academic Papers released in 2013.

KEI Academic Papers are commissioned following a call for proposals to academic and policy communities in the United States, South Korea, and around the globe. The objective is to provide opportunity for recognized specialists and new voices to present fresh research and innovative works on Korea. Moreover, these papers provide great examples of the breadth and depth of issues centered on Korea and those that affect the U.S.-Korea alliance. These papers are original pieces written exclusively for this volume, and most of the authors also present their findings at KEI before a Washington, DC policy audience. KEI prepares each paper for publication and distributes it to more than 5,000 recipients in governments, the private sector, policy institutes, and educational communities around the world.

Economics is obviously a major focus at KEI, and the reader will note underlying economic themes in many of our papers. There are two papers dealing primarily with economic themes: Korea's focus on building its "creative economy," and the increasing problem of Korea's large household debt. Moreover, Korea's growth as a country and economy is seen in its desire to responsibly export nuclear technology and defense equipment. KEI was able to look at the nuclear issue further with a paper analyzing the dynamics with the U.S.-Korea civil nuclear cooperation agreement negotiations. In addition to these issues connected to economics, this publication also has two papers on security and diplomatic relations dealing with luxury goods in North Korea and comparing China-Taiwan relations and inter-Korea relations. All together, these reports make up this year's fascinating *On Korea* volume, which we hope you will enjoy.

For over 32 years, KEI has been dedicated to promoting objective and informative analyses and highlighting interesting policy research on Korea. We encourage students, scholars, practitioners, and policymakers to submit original papers to KEI for consideration in future *On Korea* volumes or other Institute publications. We also welcome your comments on this and our other publications, all of which may be downloaded from our website, [www.keia.org](http://www.keia.org).

The Honorable Donald Manzullo



President and CEO  
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February 2014





KOREA'S DOMESTIC ECONOMY

# BUILDING A CREATIVE ECONOMY IN SOUTH KOREA: ANALYZING THE PLANS AND POSSIBILITIES FOR NEW ECONOMIC GROWTH

Sean Connell

## ABSTRACT

In her inaugural address on 25 February 2013, Korean President Park Geun-hye announced her vision to create a “Second Miracle on the Han River” through a new policy focus on developing a “creative economy.” Much as economic democratization was a leading theme of Korea’s 2012 presidential election, Park has seized on the concept of “creative economy” during her first months in office as the core of her administration’s economic growth agenda. Though previous Korean governments have taken steps to support Korea’s transition to an advanced innovation-driven economy, the Park administration has significantly heightened the level of priority of these efforts in order to foster the innovation and new engines of economic growth that will drive Korea’s future prosperity. The success of these policies requires a focus by Korean policy stakeholders, including government, businesses, researchers, and consumers, on addressing fundamental challenges within Korea’s innovation ecosystem. These include regulatory, structural, educational, and cultural obstacles that constrain Korea’s ability to fully foster and utilize its innovative capacities. Getting these fundamentals right will support Korea as it seeks to foster new industries that will drive its future growth and competitiveness. This requires a long-term commitment beyond President Park’s five-year term in office, but actions can be taken in the near term to build the foundation for future successes.

**Key words:** *innovation policy, creative economy, Park Geun-hye, regulatory reform, Korean economic policy*

## INTRODUCTION

What exactly “creative economy” means, from a policy perspective in Korea, remains a topic of discussion.<sup>1</sup> Korean President Park Geun-hye herself defined “creative economy” in her inauguration speech as the idea of creating new engines of growth and employment through “the convergence of science and technology with industry, the fusion of culture and industry, and the blossoming of creativity in the very borders that were once permeated by barriers.”<sup>2</sup> This focus on new forms of convergence of information and communications technologies (ICT) with traditional industries, as well as culture and content, has been a recurring theme in her statements on the creative economy agenda. What is not ambiguous is the desired outcome: job creation. From the beginning, Park has articulated the creative economy agenda as a means to achieve the goal of economic democratization and creating new employment opportunities she pledged to pursue, including raising Korea’s employment rate to 70 percent.<sup>3</sup>

This paper examines the Park administration’s creative economy agenda and its potential implications for Korea. It will first review concepts of innovation, and considerations for approaching innovation within public policies aimed at promoting economic growth. It will then examine the broader economic context in Korea in which the Park administration is pursuing these goals, and which shapes and constrains Korea’s innovation ecosystem. Following a review of some of the major actions and policy proposals introduced by the Korean government to implement the creative economy agenda, it assesses these proposals and suggests areas for the Korean government and other policy stakeholders to focus attention, in particular getting the fundamentals right and addressing regulatory, structural, and cultural barriers to innovation.

## THE “CREATIVE ECONOMY” AND ROLE OF INNOVATION POLICIES

The term “creative economy” is perhaps most appropriately seen in the case of Korea as a guiding theme for economic policies, much like “green growth” was during the previous Lee Myung-bak administration. More significant is the Park administration’s decision to emphasize innovation front and center in Korea’s economic policy agenda, and its recognition of the importance of cultivating the most conducive ecosystem possible to foster the innovation needed to support Korea’s future growth. In examining the creative economy agenda, it is useful to consider ways in which innovation is defined and addressed more broadly within the context of public policy.

The Organization for Economic Cooperation and Development (OECD) has defined innovation as the “implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new

organization method in business practices, workplace organization or external relations.”<sup>4</sup> Innovation can also be described as a dynamic, interactive process encompassing a diverse range of interconnected areas, levels of society, and actors.<sup>5</sup> These include research and development (R&D), education, and physical and regulatory infrastructure, along with intangible assets such as intellectual property (IP), organizational management, tacit knowledge of human capital, workforce training, marketing, and design. Framework policy and economic conditions that shape the innovation ecosystem include, but are not limited to, labor mobility, tax burdens and incentives, trade and investment, IP protections and enforcement, standards-setting processes, regulatory burdens, and societal attitudes. Key actors in innovation include government, researchers, the private sector—ranging from entrepreneurial startup businesses and large firms conducting their own R&D to the scope of financial, legal, and other professionals whose services support these activities—and consumers, who ultimately determine which products, services, and business models succeed.

Countries pursue innovation policies to increase growth, competitiveness, and jobs.<sup>6</sup> The complex range of factors outlined above, coupled with the dynamic and disruptive nature of innovation, presents policymakers with the question of how to design and manage innovation policy instruments. The most effective role for governments to play in this process is increasingly viewed as shaping the framework conditions within which innovations emerge, and coordinating and facilitating among the broader networks of actors and policies described above, in order to foster the most conducive possible environment for innovation.<sup>7</sup> This is an important distinction for a country such as Korea in which the government has at times taken a direct, hands-on role in shaping the economy.

Entrepreneurship is an increasing area of attention within innovation policies, and there is growing consensus about the important role of entrepreneurs as “carriers of innovation” in introducing innovative products, services, and business models. The Kauffman Foundation, citing U.S. government data, has estimated that entrepreneurial companies generated nearly all net job creation in the United States between 1980 and 2005.<sup>8</sup> Perhaps significant for Korea, recent research on Japan’s economy found that from 1996 to 2006, virtually all new jobs created in Japan were by newly established companies or foreign invested businesses, rather than established Japanese companies.<sup>9</sup> The Park administration has placed strong emphasis within the creative economy agenda on encouraging entrepreneurship and startup businesses, though an important consideration for Korea is what kind of support is most appropriate, and conducive, for entrepreneurs and small and medium enterprises (SMEs).

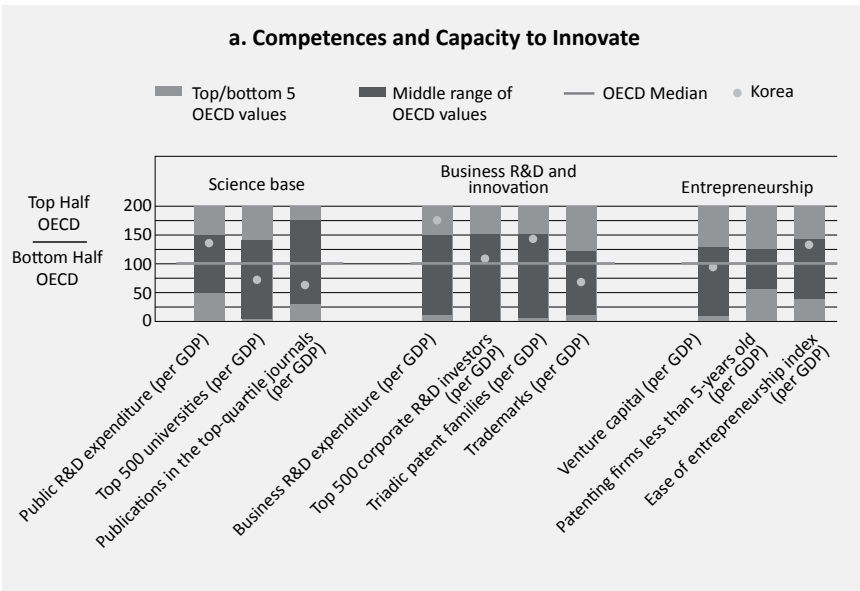
## THE CREATIVE ECONOMY AGENDA IN CONTEXT: MEASURING KOREAN INNOVATION CAPABILITIES

Korea has successfully made the leap to becoming an advanced economy that today rates highly across several internationally recognized indicators and measures of innovation. For example, Korea is now the world's fourth-largest source of triadic patents, an important indicator of the quality of its innovation capabilities. Korea's gross domestic expenditure on R&D in 2010 was equivalent to 3.7 percent of its gross domestic product (GDP), one of the highest levels among OECD member economies. Korea is a prolific source of ICT-related patents, and Korean companies including Samsung and LG Electronics are global leaders in this sector. Home to one of the world's most networked societies in terms of ICT, Korea has one of the strongest internet infrastructures of any country. The ICT sector represented 13.2 percent of total value added in Korea's economy in 2009, and accounted for 6.2 percent of Korea's business sector employment.<sup>10</sup> Korean students consistently rank at or near the top of international math and science assessments, and Korea has among the highest level of university graduates among OECD member economies.

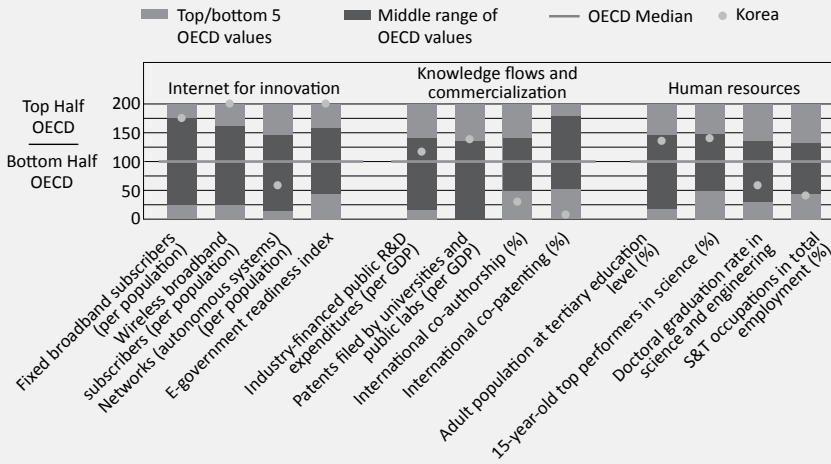
These impressive statistics, at first glance, may seem to call into question the need for a "creative economy" policy agenda. However, a broader examination of Korea's national innovation system shows some imbalances, which are illustrated in the graphs below:

**Figure 1: Comparative Performance of National Science and Innovation Systems, 2011**

Normalized index of performance relative to the median values in the OECD area (Index median = 100)



**b. Interactions and Human Resources for Innovation**

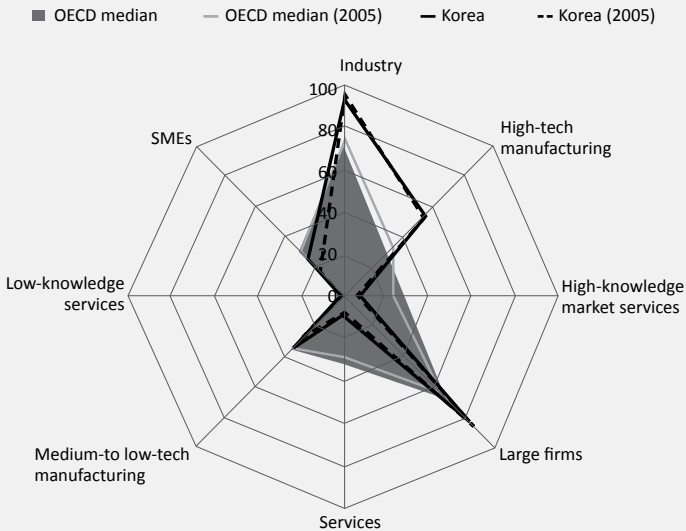


Notes: Fixed broadband subscribers data are government supplied estimates. Wireless broadband subscribers data are government supplied estimates. Terrestrial fixed wireless data are not available. For networks data, population data are for 2010.

Source: See Reader's guide and methodological annex of the OECD Science, Technology and Industry Outlook 2012 country profiles.

**Figure 2: Structural Composition of BERD, 2009**

As a % of total BERD

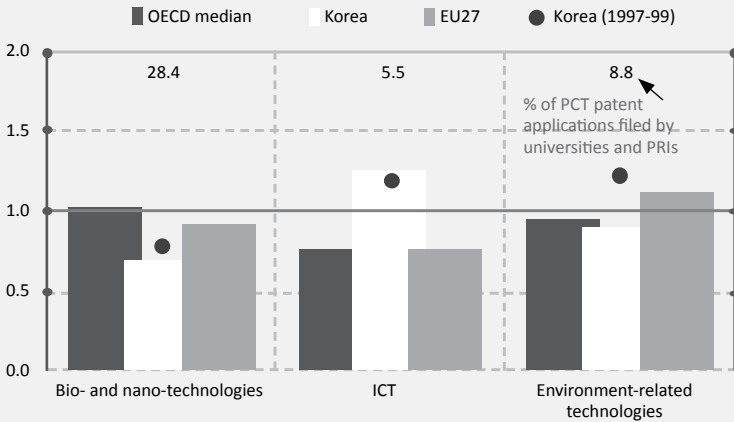


Notes: SMEs data do not include firms with no employees.

Source: OECD, ANBERD Database, April 2012; OECD MSTI Database, June 2012; OECD, RDS Database, June 2012

**Figure 3: Revealed Technology Advantage in Selected Fields, 2007-09**

Index based on PCT patent applications

**Notes:**

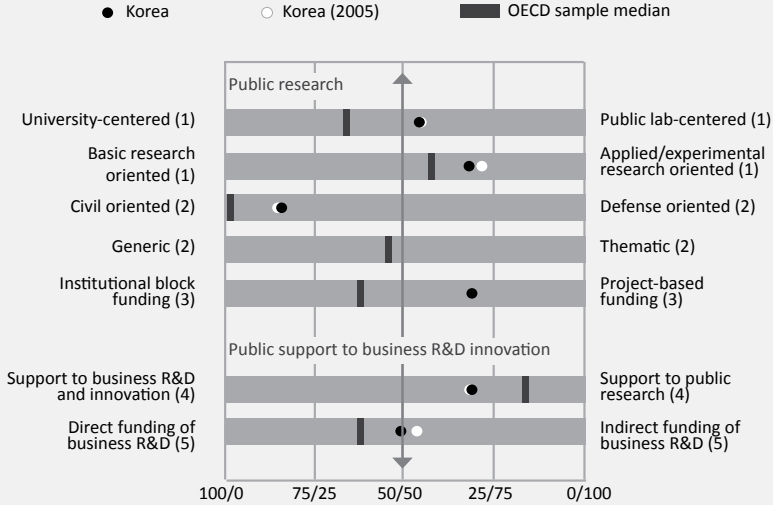
- Data relate to patent applications filed under the Patent Co-operation Treaty (PCT), at international phase. Patent counts are based on the priority date, the inventor's country of residence and fractional counts.
- The revealed technology advantage index is calculated as the share of country in patents filed in a given field relative to the share of country in total patents.
- Only economies with more than 500 patents over the periods are included in the figure.

Source: OECD, Patent Database, February 2012

As shown in these figures, Korean R&D is heavily weighted towards applied research, rather than basic research. In 2009, 71.1 percent of Korea's R&D was funded by the private sector, primarily large companies, which also conducted 74.3 percent of Korea's R&D.<sup>11</sup> Eighty-eight percent of Korean R&D was in the manufacturing sector, 48 percent of which was in the single category of radio, television, and communication equipment. R&D activity by Korean public research institutions and universities, venues where basic research is traditionally carried out, is comparatively weak: in 2009, Korean universities accounted for just 0.9 percent of R&D funding and conducted 11.1 percent of R&D. Because basic research is more likely to be conducted at universities and research institutes than by the private sector, this has important implications for Korea's innovation trajectory as the country reaches the technology frontier.<sup>12</sup>

In addition, R&D conducted by Korean SMEs and in the services sector—both of which are important generators of innovative products and services—is comparatively low. It is worth noting that R&D expenditures by SMEs have increased significantly in recent years, growing five-fold from 12 percent to 24 percent of Korean firms' total R&D expenditures in 2006, but still pale in comparison with those of large companies.<sup>13</sup>

Also noteworthy is Korea's relatively low levels of international collaboration on R&D.<sup>14</sup> For example, in 2010, 26 percent of Korean science articles and 4

**Figure 4: Overview of National Innovation Policy Mix, 2010**

1. Balance as a percentage of the sum of HERD and GOVERD.
2. Balance as a percentage of total GBAORD.
3. Balance as a percentage of the sum of total funding to national performers.
4. Balance as a percentage of the sum of HERD and GOVERD funded by government and higher education and components of (5).
5. Balance as a percentage of the sum of indirect funding of business R&D and innovation through R&D tax incentives and direct funding of BERD through grants, contracts and loans.

Notes: For 2011, public expenditure on civil-oriented research is a national estimate or projection. Estimates of R&D tax concession are drawn from NESTI data collection 2010 on R&D tax incentives. For 2005, public R&D expenditure excludes R&D in the social sciences and humanities.

Source: OECD, MSTI Database, June 2012; OECD RDS Database, June 2012; NESTI data collection 2010 and 2011 on R&D tax incentives; Van Steen, J. (2012), "Modes of Public Funding of Research and Development: Towards Internationally Comparable Indicators," OECD STI Working Papers, June.

percent of Patent Cooperation Treaty (PCT) patent applications were produced with international co-authorship.<sup>15</sup> Although a leader in ICT patents, Korea rates lower among OECD economies in patents for biotechnology, nanotechnology, and environmental technologies, sectors Korean policymakers and industries have targeted as future growth engines.<sup>16</sup>

These indicators reflect some of the broader challenges facing Korea as it seeks to foster new innovation-driven economic growth. The emphasis on applied research, comparatively low levels of R&D conducted by Korean universities, SMEs, and the services sector, and low levels of international collaboration, reflects the nature of much of Korea's R&D being conducted in-house by large company conglomerates (*chaebol*).<sup>17</sup> During Korea's period of rapid industrialization in the 1960s and 1970s, when the Korean government focused on rapid export-led growth through developing heavy industry through the *chaebol*, SMEs and the services sector were neglected. While *chaebol* dominate the Korean economy today, SMEs account for 99 percent of Korean businesses



and nearly 90 percent of private sector employment, and services comprise more than 60 percent of Korea's GDP.

SME growth and development has been limited in part by the relatively closed nature of Korea's vertically-integrated corporate structure, in which *chaebol* rely on in-house knowledge and resources, and conduct trade and business within conglomerate families, with fewer propensities for new competitor entry, spin-off businesses, and open innovation.<sup>18</sup> In these arrangements, compounded by lack of competition and enforcement of competition rules,<sup>19</sup> SMEs have served mostly as suppliers and subcontractors for large companies, rather than as resources and partners for innovation, and their ability to develop their own innovative capabilities have been limited. The resulting distortions of this economic structure were recognized by Korean government officials and analysts by the 1980s,<sup>20</sup> but successive efforts to create a support infrastructure for SMEs to bolster R&D activities failed to bridge these gaps.<sup>21</sup> Over time disparities have increased. SMEs are estimated to have only 35 percent of the productivity of large Korean companies—27 percent of the productivity in the case of manufacturing firms—and only 0.07 percent of small companies grow into large companies.<sup>22</sup> SME wages are about 62 percent of those of large companies, and service sector wages are 55 percent of those in Korea's manufacturing sector.<sup>23</sup> Additionally, government support programs for SMEs can create disincentives for SMEs to grow,<sup>24</sup> and government bailouts of SMEs in the wake of the 1997-1998 and 2008 financial crises may have exacerbated these challenges by increasing SME reliance on public funds.<sup>25</sup>

Indicators also point to relative weaknesses of Korea's universities in R&D, which reflect some challenges within Korea's education system. Korean experts have long urged improvements in the quality of education, urging less focus on rote learning and more on creativity and research, and have pointed to the emphasis in universities on teaching rather than research as a "bottleneck" for technology learning.<sup>26</sup> They have also cautioned the explosive growth of the private education industry, driven in part by the extreme competitiveness among students to pass admissions tests for Korea's most elite universities that are seen as guarantees for high-prestige employment with large corporations and the government. One consequence is that Koreans pay more for education than their counterparts in just about every other OECD nation.<sup>27</sup> At the same time, unemployment levels for university graduates have escalated while jobs with *chaebol* have become increasingly competitive, and SMEs—which lack the prestige, salaries, and benefits enjoyed by employees of large companies—face challenges filling jobs. Forty-three percent of SMEs responded in a 2011 Korean government survey that they face or expected to face a labor shortage, in part due to a lack of qualified applicants, low salaries and benefits, and high expectations of job applicants.<sup>28</sup>

For a country whose entrepreneurs of the 1950s and 1960s built the *chaebol* of today, Korea is perceived as a challenging country for entrepreneurship. People in Korea speak of considerable family and societal pressure on young people to pursue stable careers in government or large companies, versus small businesses or starting their own companies.<sup>29</sup> In 2012 the Global Entrepreneurship Monitor (GEM), which conducts the world's largest survey on entrepreneurship, found that 59 percent of Korean respondents viewed entrepreneurship as a good career choice, and 70 percent agreed that entrepreneurs in Korea received a high social status. However, the survey found comparatively negative views among Korean respondents of perceived opportunities, including starting a business where they live (13 percent), having the necessary skills and knowledge to start a business (27 percent), and a relatively high fear of failure (43 percent).<sup>30</sup> A recent survey conducted by the Hyundai Research Institute found starkly more negative views: more than 80 percent of respondents saw conditions for starting a new business in Korea as negative, and respondents in the 20-30 year age range were even less interested in pursuing a high-tech startup than older people were. The survey also found that 92 percent of respondents worried about a failed startup enterprise resulting in debt delinquency or a poor credit rating, and three-quarters said that Korea is a difficult place to recover from bankruptcy—reflecting an important barrier to entrepreneurship and risk taking.<sup>31</sup> The relatively negative outlook towards risk-taking and entrepreneurship reflects a range of cultural and structural factors that shape and constrain Korea's environment for innovation.

These aspects of Korea's national innovation system and economic structure have become more pressing challenges as Korea has reached the limits of its previous economic development approach predicated on catching up with other advanced economies. Korea's potential growth rate per capita, which slowed from about 7 percent in 1995 to a present level near 4 percent, is projected to further decrease to almost 2 percent during the 2030s. This decline reflects a decrease in productivity and labor inputs. Important contributing factors include Korea's inflexible labor market, which reduces employment mobility and has created an increasingly dualistic system of regular employees and non-regular workers lacking the same levels of salaries, benefits, protections, and training opportunities. Korea has one of the world's lowest fertility rates, coupled with low levels of women in the workforce. Wage growth has failed to keep up with GDP growth, contributing to rising economic inequalities, and addressing these challenges is an important priority for Korea to regain growth momentum.<sup>32</sup>

## THE CREATIVE ECONOMY POLICY AGENDA

The above challenges have long been recognized by Korean policymakers, and Park is not the first Korean president to talk about the importance of innovation or introduce initiatives to enhance Korea's science, technology, and innovation

capabilities to support new growth. What distinguishes the Park administration from its predecessors is its heavy emphasis on innovation, in the form of the “creative economy” concept, as the centerpiece of its economic policy agenda.

During Park’s first months in office, the Korean government has moved swiftly to develop and implement this agenda, including through three broad policy actions. These include, first, the establishment of a new Ministry of Science, ICT and Future Planning (MSIP), which was created by combining three previously separate government agencies and tasked with leading the development, coordination, and implementation of creative economy policies within the Korean government. MSIP’s policy objectives include creating an ecosystem conducive to facilitating startups, including through strengthening IP protections; strengthening Korea’s R&D and innovation capabilities; making software and content core industries of the Korean economy; promoting international cooperation and globalization of Korean businesses and technologies; and developing science, technology, and ICT to support social needs and improve people’s livelihoods.<sup>33</sup>

MSIP’s objectives reflect the “creative economy action plan” introduced by the Korean government on 4 June 2013, the second major action by the Park administration to advance the creative economy agenda. This plan targets creating new employment and industries based on creativity and innovation; strengthening Korea’s global innovation leadership; and establishing a society “where creativity is respected and manifested.” The plan incorporates six strategies to achieve these goals: establishing an ecosystem that promotes the creation of startups; strengthening the role of startups and SMEs within Korea’s economy and enhancing their ability to enter global markets; generating new industries as growth engines; fostering world-class creative talent; strengthening Korea’s science, technology, and ICT to increase innovation capabilities; and promoting a creative economic culture within Korean society.<sup>34</sup>

The creative economy action plan incorporates a set of “Measures to Develop a Venture-Startup Funding Ecosystem” announced by the Korean government on 15 May 2013 that focus on eliminating financial and regulatory barriers to entrepreneurs and SMEs. These target the goal of creating a “free-flowing virtuous cycle of enterprise creation, growth, investment withdrawal, and reinvestment” along the lines of Silicon Valley’s venture ecosystem, including by improving the environment for financing and increasing the availability of investment capital available to entrepreneurs. Specific proposals to achieve this include tax incentives and deregulation to stimulate angel investment and reinvestment by successful entrepreneurs in new startups; establishing new funds to support startups and mergers and acquisitions (M&As); introducing a crowdfunding scheme; and regulatory reforms to remove barriers to M&As related to technology. The proposals also include incentives for Koreans working overseas to invest in and provide mentorship to domestic entrepreneurs, and

creating an “entrepreneur visa” to encourage highly-skilled foreigners to start businesses in Korea.<sup>35</sup>

Other tasks outlined in the creative economy blueprint tackle several issues long identified as challenges to Korea’s innovation environment and broader economy. For example, to boost Korea’s innovation capabilities, the plan calls for increasing funding for basic research by 40 percent by 2017, along with improving the relatively weak linkages between universities, research labs, industry, and government, and support for researchers to commercialize innovative technologies. It pledges improvements in the infrastructure for generating, protecting, and using IP. To bolster the content and services industries, it targets improving industry productivity through ICT and software convergence and strengthening the software sector, including through measures to develop cloud computing, promote big data analysis and utilization, and expand education and training of Internet security professionals. The plan calls for increasing government procurement opportunities for new convergence technologies, reflecting the important role government procurement can play in bringing innovations to market, and localization support to startups with promising products to enter global markets. In education, it calls among other things for extracurricular activities to expose students to successful entrepreneurs and startup competitions in order to build their interest in entrepreneurship opportunities.

In tandem with these plans, the Korean government announced on 12 June 2013 a set of measures intended to enhance the productivity of SMEs more broadly.<sup>36</sup> These include initiatives to strengthen SME technology development capabilities, enhance their ability to train and retain skilled workers, and expand markets including through successful commercialization of new technologies. They aim to increase synergies between SMEs and large companies, and to improve the support infrastructure available for SMEs including through more effective collaboration among government agencies to monitor policy efficacy and eliminate burdensome regulations. As part of these measures, the Korean government pledged to increase public funding for technology development by SMEs to 18 percent of the national R&D budget by 2017, and to prioritize SMEs in transferring publicly-funded technologies from universities and institutes. To address chronic SME labor shortages, the plan includes scholarships for university students that commit to SME employment.

A third set of actions by President Park and her government has been active public outreach efforts to promote the creative economy agenda, and to champion the value of innovation and entrepreneurship. Park and senior government officials have made frequent site visits to promising Korean startups, and have held highly-publicized meetings with internationally renowned entrepreneurs such as Bill Gates, Larry Page of Google, and Mark Zuckerberg of Facebook to seek their ideas for actions Korea should take to foster the creative economy.

## THE CREATIVE ECONOMY AGENDA IN HISTORICAL PERSPECTIVE

Several aspects of the creative economy policy proposals have precedents in Korea. For example, in 1997 the Korean government enacted the Special Law on Science and Technology Innovation, with the goal of improving Korea's science and technology capabilities to the level of advanced economies. A related five-year plan that entered into effect in 1998 called for increasing the R&D budget to 5 percent of the total government budget by 2002, improving science and technology policy coordination, and increasing investment in basic research. It also included provisions to increase technology promotion funding, expand technology assistance programs for SMEs, introduce financing options allowing the use of technology and IP as collateral, and strengthen tax incentives for R&D and human resource development. At the time these laws were enacted, observers commented that they did not go far enough to address challenges with Korea's national innovation system, including removing institutional barriers and silo tendencies between institutions, which limit the diffusion of innovation and interactive learning; limited labor mobility; limited incentives to increase university-industry collaboration; and stricter protections for IP—criticisms that still echo today.<sup>37</sup>

Economic and other reforms implemented by the Kim Dae-jung administration following the 1997-1998 financial crisis included emphasis on boosting Korea's science and technology capabilities and R&D activities, and provided significant financial support for startup businesses. At a time when *chaebol* were restructuring and downsizing, Korea experienced a boom of high-tech startups, which grew from 100 to 5,000 companies just within 1999, but which collapsed in tandem with the U.S. dot-com crash.<sup>38</sup> The Park administration has pointed to a heavy reliance on loans as the primary form of government financial support for these startups as a contributing factor to their failure, which underlies its policy focus on improving the overall environment for investment in startup firms so that they do not need to be as reliant on loans. The Kim Dae-jung administration also established the Ministry of Science and Technology as a separate entity, though it lacked the power to effectively coordinate science and technology policies across other government ministries.<sup>39</sup> The Roh Moo-hyun and Lee Myung-bak administrations also emphasized the need to upgrade Korea's science, research and education capabilities and made similar efforts to increase R&D funding and enhance policy coordination within the government on science, technology, and innovation.<sup>40</sup>

## ASSESSING THE CREATIVE ECONOMY AGENDA

Park has described the creative economy agenda as a “paradigm shift” for Korea. The ultimate success of these policies requires such a shift, for it will involve changing the ways in which the Korean government and broader public measure

and perceive success, and the steps for getting there. The desired outcomes of the creative economy agenda are long term in nature, for which a commitment and time horizon beyond Park's five-year term as president are essential. To succeed, they will also necessitate tackling reforms that will be politically sensitive. Pragmatism and flexibility are required, for many successful examples of the "creative economy" that Park and her administration have highlighted were not preordained. Ensuring an enabling environment for innovation that does not hold back unanticipated surprises, even if they do not align with government or other expectations, is important.

Although implementation of the creative economy agenda is still at an initial stage and it is too early to assess its performance, below are three areas where leadership by the Park administration will be valuable in building momentum for this initiative and in enhancing Korea's environment for innovation.

**Regulatory Reform and Getting the Fundamentals Right:** It is important that the Korean government not lose focus on creating the most conducive environment possible for innovation. Regulatory, tax, labor mobility, and other reforms that will encourage businesses both small and large to enhance their innovative activities and capabilities, improve their productivity, and create new jobs will be beneficial.<sup>41</sup> As it proceeds with implementing its policy initiatives, it is important for the Park administration to recognize the limitations of the government's role and ability to shape the creative economy, and avoid market interventions that could inhibit Korea's economy to meet the challenge of rapidly changing technologies.<sup>42</sup> John Howkins, who is credited with coining the term "creative economy," has pointed out that governments "cannot enforce creativity."<sup>43</sup>

Park and her administration have stated that deregulation is the key to fostering the entrepreneurship that will drive the creative economy, and they have pledged to eliminate unnecessary regulations. At the same time, more than 500 regulatory measures have reportedly been introduced by the Park administration since taking office, after increasing significantly during the previous four years.<sup>44</sup> It is important for the Park administration not only to identify and eliminate regulations that constrain the broader innovation framework, but also be mindful of their potential to do so. One example of such kind of unexpected consequences are long-standing Korean cyber security laws mandating use of the ActiveX security software, which over time and in practice has constrained Korean consumers' ability to make online payments by *de facto* limiting them only to use of Microsoft's Internet Explorer web browser.<sup>45</sup> Additionally, proposed cloud computing legislation under discussion in Korea has generated concern within the global IT industry as attempts to regulate the cloud that could create new market barriers for both Korean and global cloud services providers.<sup>46</sup>

Park's creation of MSIP is a well-intended effort to increase policy coordination within the Korean government and overcome bureaucratic silos. However, it represents the third major reorganization of the Korean government's science, technology and innovation governance system within the past decade. These frequent changes, coupled with public expectations for quick outcomes, present the risk of adverse effects resulting from lack of continuity and merging together different institutions and their respective organizational cultures.<sup>47</sup>

The Park administration's focus on supporting SMEs and entrepreneurs and boosting the services sector, both in facilitating new opportunities and by strengthening IP and other protections, addresses important components of Korea's national innovation system that have not achieved their full growth potential. Implementing these provisions should be coupled with broader actions beyond the creative economy agenda to foster a more level playing field for SMEs in the domestic market. These include tackling unfair business practices, but also eliminating disincentives for SMEs to grow and by ensuring they do not become dependent on public funding. *Chaebol* have a vital role to play in advancing the creative economy agenda, and deregulation and incentives that enable them to expand their R&D activities are important. The Park administration has pushed *chaebol* to explore "win-win" opportunities to partner with SMEs in bringing innovative technologies to market, including as part of its economic democratization goals to reduce the gaps between large and small companies. Some large companies have announced plans to partner with and open new business opportunities for SMEs,<sup>48</sup> and moving forward it will be useful to monitor successful incentives and cases that could present models for best and effective practices.

Fear of failure represents a significant constraint to entrepreneurship in Korea, and the creative economy agenda. The Park administration has taken an early focus and emphasis in its plans to tackle this, particularly in regards to financing for SMEs and entrepreneurs. However, it is also important to consider other regulatory, legal, and institutional factors that increase the cost of failure and contribute to the risk aversion beyond cultural attitudes. For example, Korea's strict bankruptcy laws have been identified as a challenge,<sup>49</sup> and changing these laws in ways that would encourage more entrepreneurs to try launching a new business could be beneficial. Studies on the effects of reforms to Japan's bankruptcy laws in the 1990s found an uptick in entrepreneurial behavior in the following years.<sup>50</sup>

**Trade, Foreign Direct Investment, and Global Markets:** The Park administration has discussed within the creative economy agenda supporting promising Korean startups entering global networks, attracting funding and mentorship from overseas Koreans, and offering an entrepreneurship visa to attract foreign entrepreneurs to set up business in Korea. However, somewhat

missing from the Park administration's creative economy discourse has been trade and foreign direct investment (FDI), and the important role these can play in facilitating innovation, both through introducing new knowledge and technology spillovers and generating increased market competition.

Korea's free trade agreements with the United States and European Union represent important opportunities to advance the creative economy agenda in this regard.<sup>51</sup> Full implementation of these agreements and the regulatory reforms they incorporate will benefit Korean businesses by reducing burdens, fostering a more competitive market, and bringing Korea in closer alignment with global standards. The agreements provide Korean SMEs and entrepreneurial startups new opportunities to introduce their innovative products and services in these important international markets. They also open the door to new FDI that could help foster the new creative industries sought by the Park administration. Several elements of these agreements, including eliminating barriers to market entry and FDI, increased transparency, and enhanced competition policies, among others, have been identified as keys for strengthening Korea's underperforming services sector.<sup>52</sup> The Korean government should be looking how most effectively to leverage these agreements, along with other trade agreements Korea is currently negotiating or may join in the future, to create synergies with its creative economy initiatives and help innovative Korean businesses enter global markets.

**Communicating the Importance of Innovation:** The Park administration has an important role to play in building public consensus around the creative economy agenda, including through communicating the value of innovation and entrepreneurship. It will need to clearly articulate how related policy actions and reforms, including some that may be politically sensitive, will advance the creative economy agenda, as well as manage public expectations about outcomes that could take years to manifest. While it is prudent not to define "creative economy" in the public consciousness as narrowly as the Park administration has sometimes risked doing with its emphasis on ICT convergence, overuse of the term for unrelated and counterintuitive projects could risk generating public perceptions of the term as an empty slogan.

Because many barriers to innovation in Korea are cultural in nature, the education sector should be a primary area of focus of the creative economy agenda. Efforts to overcome these constraints, create more tolerance for failure, and broaden perceptions and public definitions of what success means, would benefit through infusing these principles in to the education system early. Groups like the Korea Entrepreneurship Foundation are taking an active role in Korea to encourage this. To support change, sustained and consistent messaging from the president and other senior government and business leaders will be paramount.



## CONCLUSION

The Park administration's creative economy agenda represents an important and needed effort by the Korean government to build the foundation for Korea's future sustained growth and prosperity. It additionally presents new approaches and opportunities to tackle pressing social and demographic challenges increasingly confronting Korea. Moving forward, it is important that the Park administration not lose focus of its goal of ensuring the best potential ecosystem in Korea for innovation, entrepreneurship, and fostering creative new industries. Addressing regulatory, structural, and cultural barriers requires a long-term approach and commitment, and may not yield short-term results. This will require patience in implementing this agenda, and in demonstrating and communicating to the broader Korean public positive outcomes and new ways of measuring success more appropriate to Korea's future growth trajectory. While this would be challenging for any government, Korea has demonstrated time and time again a remarkable capability and dynamism to adapt to new paradigms, and the creative economy agenda will hopefully be no exception.

*The views expressed in this paper are those of the author and do not necessarily reflect the policy or position of the East-West Center or any organization with which the author is affiliated.*

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# THE IMPACT OF HOUSEHOLD DEBT ON KOREA'S ECONOMY AND SOCIETY

Jongsung Kim

## ABSTRACT

The topic of household debt has not only economic implications for consumers and the country as a whole, but it is also a significant factor affecting the social stability of its citizens. This problem also parallels the recent financial crises in the U.S., the aftermath of which still plagues its economy. Against this backdrop, this paper aims to review and investigate the trends and determinants of the rising household debt and declining savings in Korea so policies can be implemented to deter and effectively counter the problems that low savings and countervailing high debt will pose on the Korean economy. This study will add to the existing literature by providing new evidence of its implications toward the household debt problem in Korea. I argue that globalization, government policies and generous credit resulting from the low interest policy contributed to the increase in debt in Korea. The tight restrictions on commercial banks' lending practices will put the borrowers at a much worse position, exacerbating the low saving and high debt problem. Despite the volume and the seriousness of the household debt in Korea, the efforts to reduce it have not been satisfactory. To address the rising household debt problem, it is recommended that an active intervention should be implemented toward job creation, employment security and closer monitoring of the lending practice. It is also recommended to offer more information about the loans for indebted low-income class and to simplify the procedures to apply for those loans.

**Key words:** *Korea's household debt, savings, debt relief, national happiness fund*

## INTRODUCTION

The first years of 2000 marked the outbreak of the household debt in Korea as the most significant potential risk factor that can threaten the stability of the financial system, especially when it is linked to the economic slowdown and ongoing real estate slump after the global financial crisis.<sup>1</sup>

On April 22, 2013, Bank of Korea (BOK) Governor Kim Choong-soo remarked that “The nation’s household debt reached a limit” in his report to the Korean National Assembly. He was also recently quoted as saying, “The household debt has been rising faster than income and the nature of household debt has also deteriorated. Efforts should be exerted not only to reduce the volume of debt but also to improve the vulnerable structure of household debt.”<sup>2</sup> His remarks along with statistical evidence reported in the next paragraph signify the seriousness of household debt in Korea. Against this backdrop, this paper reviews the trends of household debt in Korea and investigates the background of its rise in recent years along with a discussion on the current policy measures taken by the Korean government to address the rising household debt.

As of 2012 4th quarter, the household credit<sup>3</sup> in Korea reached 963.8 trillion *won* (\$853.7 billion at the exchange rate of \$1=1129 *won* on June 12, 2013) that includes household loans of 905.9 trillion *won*, a 5.2 percent year-on-year increase and a purchase on credit of 57.9 trillion *won*, a 3.1 percent year-on-year increase.<sup>4</sup> Since the household disposable income rose 4.1 percent, the ratio of household debt to disposable income reached 136 percent, the highest level since 2003 when the related data began to be collected. Accordingly, the household debt per capita reached the highest level at 19.3 million *won*, almost 74 percent of GDP per capita, as the average household debt also increased to 53 million *won*.<sup>5</sup> The banking sector mortgage loan balance also rose to 316.9 trillion *won* at the end of 2012 from 264.2 trillion *won* at the end of 2009, an increase of 19.9 percent.

Korea’s household debt also poses potential threats to the nation’s economy when the debt is viewed from the international perspective. According to OECD statistics, which also include the financial debt of non-profit organizations, the ratio of Korea’s household debt to disposable income rose to 150.8 percent in 2010 from 116 percent in 2004 and 139 percent in 2007. An increase of 11.8 percent from 2007 to 2010 after the global financial crisis is higher than that of other OECD countries. In 2010, the average debt-disposable income ratio of 25 OECD countries for which data was available was 128.8 percent; in comparison, the average debt-disposable income ratio in the U.S. was 122.5 percent in 2010, the lowest since 2003 and a 13.9 percentage point decline from its peak (136.4) in 2007.<sup>6</sup> The ratio of household debt to GDP reached 81 percent in 2010, higher than the OECD countries’ average of 73 percent.<sup>7</sup>

A major consequence of Korea's rising household debt is the decline in household savings. Korea's household savings rate declined significantly after the financial crisis from over 20 percent in the mid-1990s to a mere 2.7 percent in 2011. This is only half of the average household savings rate of 5.3 percent among the 23 OECD countries where data was available. For the U.S., in comparison, the average household savings rate was 4.2 percent in 2011.<sup>8</sup> The sudden decline of Korea's household savings rate, which registers as one of the lowest along with New Zealand (2.3 percent) and Japan (2.9 percent), is unprecedented in terms of the time period of the overall drop in savings among the OECD countries.<sup>9</sup> The average household savings rate in Korea from 2000 to 2010 was 4.7 percent, which is less than one-fourth of the average savings rate (19.8 percent) from 1990 to 1999. The savings rate in Korea especially plummeted after two periods of economic distress: from 1998 to 2002 after the Asian financial crisis when the savings rate dropped from 21.6 percent to 0.4 percent; from 2004 to 2008 after the credit card crisis, the savings rate declined from 8.4 percent to 5.8 percent.<sup>10</sup>

From the macroeconomic view, the decline in savings rate caused from the rise in household debt turns a virtuous cycle into a vicious cycle among savings, investments and economic growth. Therefore, the lack of sufficient savings in an economy will retard economic growth in the future.<sup>11</sup> At the household level, the decline in savings will exacerbate the household debt problem and can create more credit defaulters and bankruptcies. The limited existing evidence which foreshadows only the tip of the magnitude of the problem also underscores the claim that the rising household debt, despite the government policies to rein in the problem, remains one of the predominant risk factors that could threaten the stability of the Korean economy.<sup>12</sup>

## TRENDS OF KOREA'S HOUSEHOLD DEBT

There are two ways to define household debt in Korea. First, if the household is the focus of analysis (as it is with this paper), the term for "household debt" is synonymous with "household credit (가계신용)," which is defined as the sum of household loans and purchases on credit. Second, however, for cross national comparison, the term for household debt is "individual financial debt (개인금융부채)," which also includes debt incurred by the self-employed and non-profit organizations in addition to households, better represents the household debt since such statistics are prepared according to an accepted global method (System of National Account).<sup>13</sup> This paper uses the first definition of household debt ("household credit (가계신용)") to be consistent with other related studies.<sup>14</sup>

Figure 1 shows that Korea's household debt has risen continuously since 2000, although the rate of increase varies from time to time, and has declined since 2010. The household debt problem in Korea has arisen as the result of the interplay among many factors such as accommodative monetary policy, lending

practices of financial sectors, booming real estate market, and untimely policy responses of the regulating authorities. Other contributing factors are decline of household savings due to the changes in demographic structure and the expansion of real estate ownership of baby boomers.<sup>15</sup> After the Asian financial crisis in the late 1990s, financial institutions shifted their business focus from lending to companies to private and household lending. Korea's household debt since then has grown over 10 percent a year on average, much faster than the nation's GDP growth rate.<sup>16</sup>

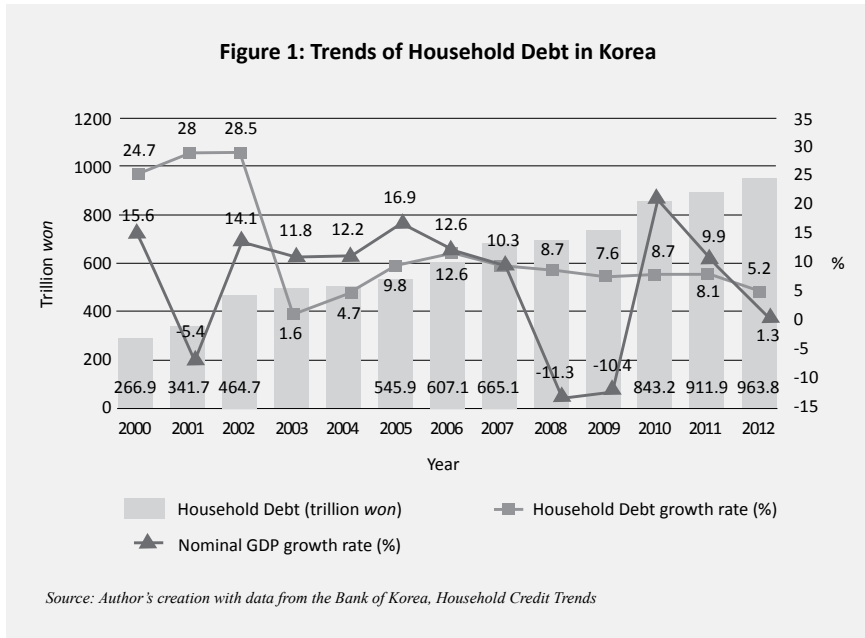
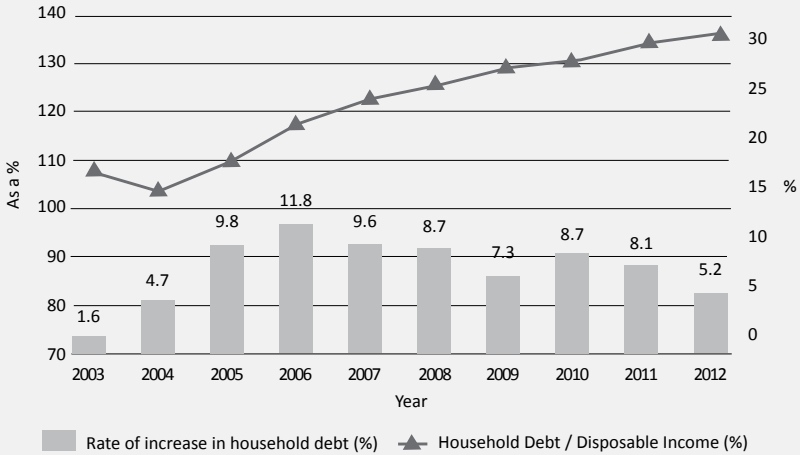


Figure 1 shows that the average growth rate of household debt from 2000 to 2012 is 12.1 percent, much higher than that of the nominal GDP at 7.6 percent during the same period. The growth rates of the household debt were much higher from 2000 to 2002 exceeding 25 percent. Excluding these years, the average growth rate of household debt (7.6 percent) becomes much similar to the average growth rate of the nominal GDP (7.5 percent). The annual growth rates of household debt from 1997 to 1999 are 20.9 percent, -13 percent and 16.5 percent. Including these years, the average growth rate of household debt from 1997 (when the Asian financial crisis hit) to 2012 is 11.3 percent.

Although the growth rate of the household debt has declined from 11.8 percent in 2006 to 5.2 percent in 2012 except in 2010, the amount of household debt has increased 58.7 percent during the same period and reached a level that was described by the current BOK Governor as a limit.

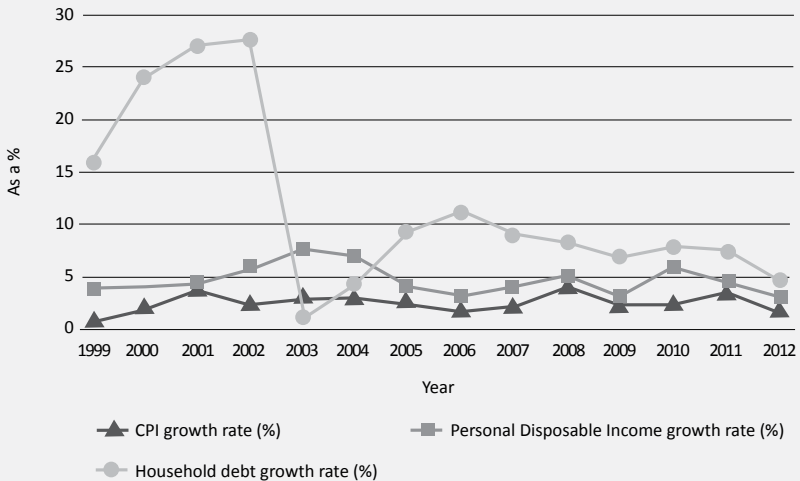


**Figure 2: The Share of Household Debt to Disposable Income**



Source: Statistics Korea

**Figure 3: Growth Rates of CPI, Personal Disposable Income and Household Debt**

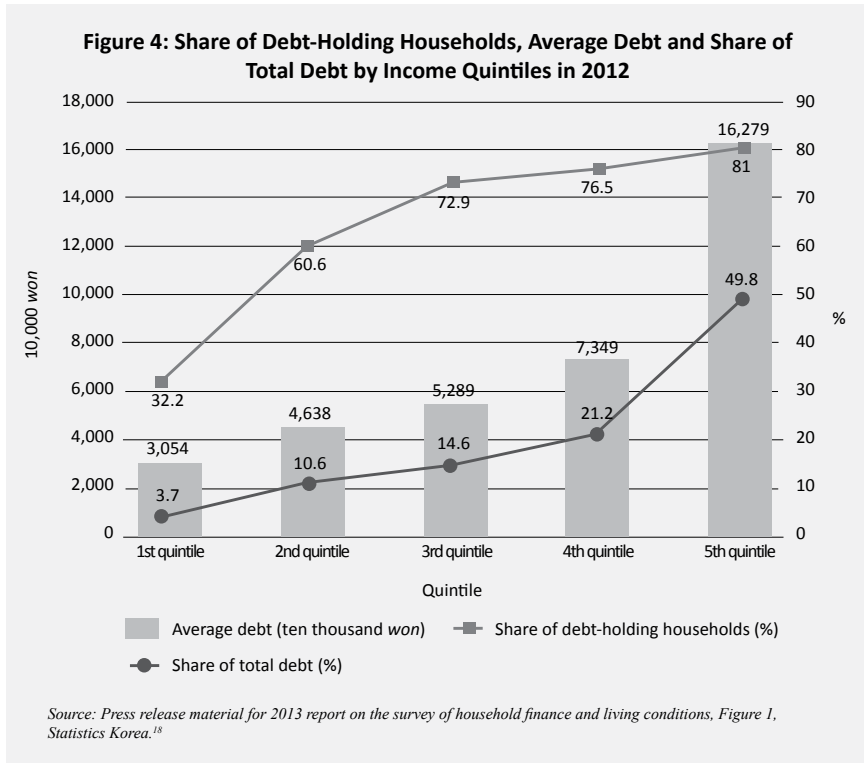


Source: Statistics Korea, and Economic Statistics System of BOK

Figure 2 shows the trends in the share of household debt to disposable income. The share has risen continuously from 2004 and reached the record high level of 136 percent in 2012. As shown in Figure 3, while the growth rate of personal disposable income has been greater than that of CPI since 2000, the growth rate

of household debt has exceeded that of personal disposable income since 2005, presenting evidence of households' economic hardship.

Despite the widespread concern over Korea's household debt, it is also argued that major credit default is not on the horizon since the debt is more concentrated in the high-income households as shown in Figure 4, which depicts the shares of households with debt, the volume of household debt, and the share of total debt by income quintiles in 2012.



In Figure 4, the household debt was concentrated in the 5th quintile (top 20 percent) that has ability to service the debt. Eighty-one percent of the households in the 5th quintile have an average debt of 162.7 million *won*. On the other hand, 32.2 percent of the households in the 1st quintile have an average debt of 30.5 million *won*. The 5th quintile's share of total debt stands at 44.5 percent whereas that of the 1st quintile was much lower at 3.7 percent. Based on this, some would argue that the household debt problem in Korea still is not at a serious level.<sup>17</sup>

Nevertheless, the rise of household debt also affects overall demand and consumption. There are three ways through which household debt leads to changes in private consumption.<sup>19</sup> First, consumption may rise as the households have more

purchasing power from incurring debt. Second, the wealth effect from the rising value of assets acquired with the debt may also raise consumption. However, the interest payment burden from the debt would lower the disposable income, leading to a decline in consumption. The third channel is less direct, involving expectations of the household-debtors. To the extent that people expect that the economy keeps on stagnating, they preemptively respond by lowering consumption. It is also important to note that when the bubble bursts in an overheated asset market, the ensuing rapid decline in asset value will result in a precipitous decrease in consumption. While household debt may raise consumption in the short run, its impact on investment is estimated to be negative, which along with low savings will dampen the long-run growth potential of an economy.

In summary, despite arguments that it is not a problem, the household debt in Korea will affect the Korean economy in the following ways. First, the rising household debt will reduce savings and investment which can slow down economic growth and potential economic growth rate. Also the lower savings rates can make the Korean economy more dependent on foreign capital and susceptible to the fluctuations in the global financial markets. Second, as the household debt rises, private consumption and demand in the housing market will decline. This will also retard economic growth. Third, the mounting household debt may lead to insolvency when debtors are unable to repay their loans on time, creating instability in the financial system. Fourth, if the number of households struggling under heavy debt burden rises, the government may need to step in and increase its subsidies (or transfer payments), which will correspondingly raise the government debt.<sup>20</sup> Fifth, when the household debt is rising or has reached a critical point, the government will not be able to freely use interest rate policy to stabilize the economy to control inflation by increasing interest rates as such a move will put households into a more difficult financial position because they will be burdened with higher interest payments. Sixth, the rising household and government debt can make the Korean economy more vulnerable to exogenous shocks. To the extent that the existing size of household and government debt is viewed as a structural weakness, an event such as a global financial crisis will lead to insufficient foreign currency reserve due to capital flight, and fluctuations in exchange rates. This may negatively affect Korea's international credit rating. Lastly, the rise of household debt can also exacerbate the income inequality, creating uncertainty and instability in Korean society.<sup>21</sup>

## REASONS FOR THE RISE IN KOREA'S HOUSEHOLD DEBT<sup>22</sup>

The household debt in Korea has expanded through four channels. First, the policy change at the end of the 1990s created the liquidity effect, marked by an excess liquidity in 2003. After the Asian financial crisis in 1997, the target price level

for price stabilization was set too high and this led to a supply of excess liquidity. The accommodative monetary policy helped to maintain the interest rates at a low level after the financial crisis.

Second, after the Asian financial crisis, the Korean government at the end of 1997 “adopted the policy to encourage the use of credit cards to boost the economy through raising consumption”<sup>23</sup> and increasing the transparency of financial transactions, which would in turn provide an information source to allocate tax schemes that were fairer. This benign intent, however, led to a rise in credit card use and raised the competition among credit card companies that over-issued credit cards to non-qualified applicants. Eventually, this led to the credit card crisis at the end of 2003 when the delinquency rate of credit cards rose as the result of declining household income and repayment ability, worsened by the delayed recovery in the Korean economy.<sup>24</sup>

Third, the artificially created low interest rates induced large credit creation. The boom in the housing market linked with low interest rates also helped the household debt to expand.<sup>25</sup> The rising value of real estate, especially in residential housing, induced people to borrow heavily to purchase more real estate in expectation of profits. For example, the expansion of real estate ownership by Korean baby boomers, who were born between 1955 and 1963 and comprise one-fifth of the population, is cited as a reason for the rise of household debt in the 2000s.

Fourth, after the 1997 Asian financial crisis, Korean financial institutions lacking appropriate risk management systems, such as credit appraisal, shifted their focus from lending credit lines to firms to household loans, as firms became more risk averse. This was facilitated with the continuation of low interest rates from the accommodative monetary policy. What also fueled the expansion of household debt were loose regulations and the lack of systemic accountability, which contributed to the inability of Korean financial regulators to adequately supervise the banking sectors and also paved the way for other unregulated non-banking sectors that can freely lend for-profit loans. Such unrestrained household loans from non-banking financial institutions could create real estate bubbles.<sup>26</sup>

The notion of the so-called “realty invincibility” can also partially explain the rise in household debt in Korea. This is due to the Korean banks’ lending practices through which the debtors can acquire additional loans as their portfolio increases. This is accomplished through additional acquisition of assets (collateral) with an increased valuation (appraisal), which would have accumulated on the original collateral due to the constant and intense real estate market speculation.

As a result, the banking sector mortgage loan balance rose significantly. Mortgages and home equity loan programs in Korea typically have a few years of an interest only repayment period built in at the beginning, during which debtors pay only the interests on the loan until the end of the designated term at

which time the payment of the principal must be paid in full. This type of loan is equivalent to a balloon payment in the U.S.<sup>27</sup> However, in a highly speculative and burgeoning real estate market, the housing prices will inevitably rise during the repayment period. This will create an incentive for the borrower to take additional risks by purchasing more real estate with the increase in the asset valuation gained during the repayment period. The original asset then would be sold with a significant profit to pay off the original loan. The rising value of real estate also contributed to the expansion of real estate related project financing (PF) loans. It was reported that as of March 2009, the volume of PF by financial institutions as a whole stood at 81.7 trillion *won*. Financial institutions concentrated on the home equity loans, for which the risk management is easier since the loan only occurs with secure collateral. Since the housing price depends on the structural changes in the housing market, the lending practice concentrating on home equity loans creates structural vulnerability.<sup>28</sup>

If the returns from the booming housing market exceed the amount of loans and associated financial costs, the rising household debt (and declining savings) incurred in expectation of the future profits from the booming housing market would not pose a problem, since the gained equity will be sufficient to pay off the debt. But the recent housing market stagnation created some pessimism giving less credence to the past trend of a robust housing market. Despite the government policy to boost the housing market, which will be discussed more in detail later, the stagnating housing market does not show sufficient signs of upturn.

According to a recently released BOK report, 34.7 percent of the sample households replied that the price of real estate they owned declined (8.2 percent for significant decline), whereas the percentage of households that replied that the value of real estate they owned rose was 24.4 percent (5.1 percent for significant rise). Not surprisingly, the household debt problem is expected to exacerbate as 58.9 percent of the households replied that they are having a difficulty in their daily lives due to the repayment of principal.<sup>29</sup>

Especially vulnerable groups are the low-income class with bad credit, debtors with multiple loans, and small-scale self-employed merchants whose debt structure is worsening. As the result of stricter regulations on loan appraisal, those with relatively lower credit ratings are forced to take out loans from the non-banking financial institutions<sup>30</sup> that would charge higher interest rates.<sup>31</sup> According to a report from Korea's Financial Supervisory Service (FSS) released in 2012, as the banks shifted their lending practices to those with collaterals categorized as lower risk assets, the share of loans extended to borrowers with low credit ratings, i.e., those whose credit ratings are below category 7, declined from 14.5 percent in 2008 to 11.4 percent in 2012. The report also showed that the share of low-income class in taking loans from the non-banking sector rose from 43.2 percent at the end of 2008 to 47.3 percent in June 2012.<sup>32</sup> The

delinquency rate for the New Hope Dream Loan Program, designed to cater to individuals with poor credit ratings, also rose from 1.7 percent in 2011-end to 2.6 percent in September 2012.<sup>33</sup>

While some supervision of the financial sectors was actively implemented from the Early Warning System (EWS), especially centered on the home-equity loan, the strength of the supervision was not sufficient to rein in the expansion of household debt as it only focused on the Loan to Value (LTV)-oriented regulation and the different regulation systems for different financial sectors. Accordingly, in the early stage of increase in housing prices, the regulation centered on the LTV failed to effectively rein in the expansion of household debt. The failure of sequentially implementing the Debt to Income (DTI) regulation after the LTV regulation, due to the resistance from the financial sector and arguments against the use of DTI as it is an excessive policy intervention, is also regarded as a reason that the exploding rise of household debt was not preemptively suppressed.<sup>34</sup>

The LTV ratio is the most effective policy tool that the financial regulation authority can use to manage risks associated with the fluctuation in the value of real estate. The LTV ratio in Korea, except the savings banks and financial companies specializing in loan business, is still lower than that of other countries. However, the LTV ratio can be underestimated if it does not properly account for the Jeon Se deposit, a unique system in Korea where substantial deposit is required to lease a property. Currently, in the Seoul Metropolitan Area (수도권) that includes the city of Incheon and Gyeonggi Province, the LTV ratio is 50 percent on houses of price lower than 600 million *won* and 60 percent on others. Also DTI ratio is 50 percent in Seoul, and 60 percent in the Seoul Metropolitan Area.<sup>35</sup> Even the DTI-oriented regulation, which was fully implemented by the end of 2006, had little desired effect, as the regulations had to be adapted to accommodate the global financial crisis at that time.

Another concern is the pattern of debt transfer from household to government (i.e., welfare). If the rising household debt puts some households in an economically dire situation, the government may need to intervene and increase assistance and welfare payments such as college tuition breaks and other forms of subsidies. The rise of government welfare payment will also enlarge the government debt. In 2012, the government debt stood at approximately 774 trillion *won* or 35 percent of the GDP when only the government debt is considered. If the debt of government-owned (or subsidized) companies is also considered, the amount becomes approximately 1,255 trillion *won* or 65 percent of the GDP, approaching a dangerous level.<sup>36</sup>

## REMEDIES ATTEMPTED BY THE KOREAN GOVERNMENT

To alleviate the rising concerns regarding the household debt in Korea, many policies were implemented with a varying degree of success. Two such measures are “Comprehensive measures to induce a soft landing for household debts” in June 2011 and “Supplementary rules for non-banking household loan activities” in February 2012. Despite the government policies to rein in the household debt problem with which the growth rate of household debt has slowed, the household debt problem still remains one of the most significant risk factors threatening the stability of the Korean economy.

The rising household debt in Korea emerged as one of the major issues in the 2012 presidential election. During the campaign, candidate, now President, Park Geun-hye, made a pledge to launch a National Happiness Fund (NHF)—a form of debt relief fund—of 18 trillion *won* (approximately \$17 billion) to ease the debt burden of the low-income class, in particular the 3.22 million people who are unable to service their debts. This election pledge was fulfilled and the NHF was launched on March 29, 2013. The Fund “aims to help credit recovery of delinquent borrowers and heavily-indebted low-income earners with programs including restructuring debt, easing debt servicing burden on student loans, and converting high-interest loans to lower-interest ones.”<sup>37</sup>

The NHF gives debtors more time to repay their loans and reduce their interest rates for a limited time. In particular, loans with interests in excess of 20 percent were targeted to reduce their rates to 10 percent range for loans taken out from financial institutions that charge high interests, sometimes over 20 percent. Those who had been diligently paying off debts for the six months leading to the end of February 2013 may be entitled to this debt relief program with maximum loan amount of 40 million *won*.<sup>38</sup>

Obviously, this plan can create a moral hazard as the government will help the borrowers repay their debts. One expert added that “The NHF plan is quite unrealistic, because the government will have to issue bonds that are ten times greater than their original value.”<sup>39</sup> They are also skeptical of the efficacy of the NHF as the funding sources for the plan are too small and it is applicable to only a minority of people who took out institutional loans.<sup>40</sup>

The biggest criticism against the NHF policy is that the debt relief is a form of political populism that threatens the market order and creates conflicts among debtors who have sincerely tried to pay their debts. Some experts even say that the use of bankruptcy court or rehabilitation procedure is more advantageous than the use of NHF. In addition, individuals who are classified as the basic livelihood security recipients rarely have the ability to repay. One economist opined that although the NHF writes off a portion of the debt, 70 percent at the maximum, it would be more advantageous for some debtors to declare bankruptcy since the

redemption by installment for the balance, 30 percent of the debt at the least, would not be easy for the basic livelihood security recipients who eke out a bare existence from day to day.<sup>41</sup> Although it is not easy to distinguish those who would be better served by declaring bankruptcy, it is reasonable to expect that a basic livelihood security recipient who is dependent on a minimum daily wage for sustenance would have a very hard time repaying the debt even after 70 percent of the debt is written off.

The long redemption period of ten years was also pointed out as an obstacle to the success of NHF. If a NHF beneficiary fails to meet the terms stipulated by the NHF for only a year after successful compliance for nine years, the efforts would turn out to be in vain. However, the Financial Services Commission (FSC) responded that the longer redemption period lowers the amount of each payment installment. The FSC's support for the NHF is premised on the argument that the use of bankruptcy procedure will leave a record that may prevent the bankrupt from engaging in economic activities (and limit their financial transactions). The FSC further claimed that the same negative consequence is not true for those who utilize the NHF. While the NHF is not the fundamental solution to the household debt problem, the fund expects to ease some of the acute debt burden of the least privileged. For this reason, the NHF should be understood in light of social security and rehabilitation rather than credit amnesty.

The NHF and other related policies mainly focus on the rehabilitation of vulnerable social groups and credit recovery. However, not enough policy attention is paid to lower the total volume of the household debt. The competing effects of policies are also responsible for difficulties in implementing the right policies that address household debt by boosting economic conditions. For example, the recently announced "4.1 Real Estate Measures," for which a series of major bills related to real estate were already passed in the National Assembly, is viewed as a policy to stabilize and boost real estate transaction which will in turn stimulate the economy. This measure along with the lower interest rates announced by the BOK already began to boost the housing market.<sup>42</sup> As of May 20, 2013, the market price of high-rise residences apartments has been increasing in the last eight consecutive weeks in the Seoul Metropolitan Area and eleven consecutive weeks in the non-Seoul Metropolitan Areas, and reached a level higher than that of end-2012 by 0.18 percent.<sup>43</sup>

The "4.1 Real Estate Measure" is expected to raise home equity loans and household debt. The recently passed April 30, 2013 amendment to the Tax Reduction and Exemption Control Act exempts the transfer income tax for a newly-built housing unit for a household under the value of 600 million *won* or 85 square meters, acquired from April 1 to December 31, 2013, if the unit is to be transferred within five years of acquisition.



Proponents argue that this amendment is a desperate measure to normalize real estate transactions, adding that this limited-time measure aims to facilitate the disposal of housing for the poor and the middle/low-income class. Opponents of the amendment argue that the bill is inconsistent; they favor smaller housing units that meet space requirements in affluent areas over the bigger units that are slightly over the price restrictions in non-Seoul Metropolitan Areas that more urgently need assistance for this type of bill. Another line of criticism leveled against the bill is based on the short-term nature of the supposed remedy. One National Assembly member argues that the short-term benefit will be overshadowed by the long-run harmful effect, as the profit-seekers entering the housing market can destabilize the housing market.

Although condition in the housing market is one of many factors affecting the household debt, the controversies revolving around the “4.1 Real Estate Measure” depict the difficulties in addressing policy objectives including household debt. Also, due to the rise of household debt, the Korean government is not able to boost domestic demand by stimulating personal consumption.

## RECOMMENDATIONS

Although major sources of the household debt problem in Korea are factors related to financial and banking sectors, the remedies to alleviate the problem should be found in more fundamental areas in Korean economy and society. First, in order to address the household debt problem, job creation should be considered especially for the least privileged. Since secure employment is one of the most important bases for living and related economic activities including the payment of debt, more endeavors are called for to create decent jobs, better employment security, and employment training programs. Despite the low unemployment rate of 3 percent in 2012, “the quality of new jobs being created is declining” and many of them are concentrated in the service sector and are on short-term contract basis.<sup>44</sup>

To the extent that the NHF recipients have a hard time finding regular employment, the workers in the non-regular sectors (비정규직) need special assistance in finding employment, such as job fairs targeting low-income areas. Providing employment opportunities (through job creation) to the recipients of debt reduction (or debt relief) is also necessary to sustain the momentum of easing household debt. Unless the structural weakness of the household debt for the low-income class and other vulnerable individuals is addressed, the current stagnating economy<sup>45</sup> along with the slump in the real estate market will further exacerbate their ability to generate income and service debts.

Second, in order to control the size and composition of the household debt, policy attention should be paid to both debtors and lenders. For debtors, more financially supported policies such as microfinance and petty loans for the low-income class

are needed within the range that does not create or minimizes moral hazard. To relieve the indebted individuals with low income from the acute financial burden at least temporarily, policy efforts are necessary to adjust the loan structures by flexibly transferring high-interest debt into lower-interest debt as well as to extend the repayment period.

Although there are policies such as Smile Loan and Sunshine Loan already in place to alleviate the financial difficulties, problems occur since barriers to those policies are still high due to the lack of information and complex procedures for application for such loans. Opening more branches dealing with these loans, offering extended business hours, and disseminating loan application information more effectively (such as setting up a call center for credit management counseling) are recommended. Policies, such as the LTV and DTI regulations, should also be implemented in a timely manner to guide all forms of lenders to be careful not to overextend loans. Due to the lag between the implementation of policies and actual impact, preemptive measures are urgently called for, such as the adjustment of LTV and DTI ratios.

Finally, all the implemented policies must be monitored and data should be collected to see if these policies are actually working.

## CONCLUSIONS

The household debt in Korea has become one of the most significant potential risk factors that can threaten the stability of the financial system, especially when it is linked to the economic slowdown and ongoing real estate slump after the global financial crisis. This paper has reviewed and investigated the trends and determinants of the rising household debt and declining savings in Korea so that policies can be implemented to deter and effectively counter the problems that low savings and countervailing high debt pose on the Korean economy.

Korea needs to address the rising household debt problem in a more proactive manner by adopting the recommendations grounded in the more fundamental areas in Korea's economy and society. By doing so, Korea can alleviate this serious problem to its economy and society and provide greater strength and flexibility for the domestic and international markets.


## ENDNOTES

- <sup>1</sup> Korea Institute of Finance (2013), *White Paper on Household Debt in Korea*.
- <sup>2</sup> Kim, Choong-soo. "Academy Kangwon Lecture." Lecture, Chuncheon City, April 24, 2013. <http://www.yonhapnews.co.kr/economy/2013/04/24/0320000000AKR20130424112151002.HTML>.
- <sup>3</sup> Household credit is defined as the sum of households' borrowing from financial institutions and their purchases on credit.

- <sup>4</sup> Bank of Korea. *Trends of Household Credit*, 2012. [http://www.index.go.kr/egams/stts/jsp/potal/stts/PO\\_STTS\\_IdxMain.jsp?idx\\_cd=1076](http://www.index.go.kr/egams/stts/jsp/potal/stts/PO_STTS_IdxMain.jsp?idx_cd=1076).
- <sup>5</sup> At the end of 2012, the number of households in Korea was estimated to be 17.95 million, and the population was 50.004 million. In household debt, the share of financial debt is 68%, a decrease of 1.1% from the previous year, and that of security deposit is 32%, an increase of 1.1% from the previous year.
- <sup>6</sup> Organisation for Economic Co-operation and Development, "Household Debt," in *OECD Factbook 2013: Economic, Environmental and Social Statistics* (Paris: OECD Publishing, 2013), <http://dx.doi.org/10.1787/factbook-2013-28-en>.
- <sup>7</sup> "Household debt ratio much higher than OECD average: report," *The Korea Times*, June 14, 2012, [http://www.koreatimes.co.kr/www/news/biz/2012/06/123\\_113021.html](http://www.koreatimes.co.kr/www/news/biz/2012/06/123_113021.html).
- <sup>8</sup> The momentum of the declining savings rate was temporarily lost after the 2003 credit card crisis occurred and the savings rate rose to 8.4% in 2004. For more details see *The effect of decline in savings rates* (2013), [http://hri.co.kr/upload/publication/20133775814\[1\].pdf](http://hri.co.kr/upload/publication/20133775814[1].pdf).
- <sup>9</sup> The trend of declining saving rates and policy task (2012), *Korea Institute of Finance*. This report offers seven reasons for the decline in Korea's savings rate. They are 1) the declining growth rate of disposable income, 2) weak employment prospects, 3) low fertility and the rise of aging population, 4) expansion of social security system, 5) the rise in consumption, 6) the decrease of borrowing cost due to lower interest rates and 7) the rising housing price.
- <sup>10</sup> Eun-mi Lee, "Reasons for the decline in the household savings rate in Korea and policy recommendations," *Samsung Economic Research Institute* (2011). <http://m.seri.org/fpdf/DB/rpt/20111204.pdf>.
- <sup>11</sup> The 1% decline in household savings rate is estimated to lower the investment by 0.25% and the rate of economic growth by 0.1%. For more details see Cheon-gu Kim, "The effect of decline in savings rates," *Hyundai Economic Institute* (2013). [http://hri.co.kr/upload/publication/20133775814\[1\].pdf](http://hri.co.kr/upload/publication/20133775814[1].pdf).
- <sup>12</sup> Other factors threatening the stability of the Korean economy include decline in workforce because of demographics, weak service economy, overdependence on international trade, high income inequality, and overconcentration of manufacturing and *chaebols* that inhibits the development of other firms.
- <sup>13</sup> Bank of Korea, 2012 Money Flow Tables (Tentative Report released in March 18, 2013) at <http://www.equity.co.kr/upfile/issue/2013/03/18/1363580815325.pdf>.
- <sup>14</sup> Since the household credit includes households' non-profit loans but excludes the debts held by self-employed which may also be a part of households' financial burden, the use of household credit may underestimate the size of household debt. On the other hand, the Money Flow Table on which the individual financial debt is calculated includes not only households and small-scale individual business but also the non-profit organization. Therefore, the use of individual financial debt may overestimate the household debt. As of 2012, the household credit was 963.8 trillion *won* and the individual financial debt was 1158.8 trillion *won*.
- <sup>15</sup> Korea Institute of Finance (2013), *White Paper on Household Debt in Korea*.
- <sup>16</sup> Lucy Williamson, "S Korea's surging household debt threatens its economy," *BBC Business News*, July 13, 2011, <http://www.bbc.co.uk/news/business-14133337>.
- <sup>17</sup> Press release material for 2013 report on the survey of household finance and living conditions.
- <sup>18</sup> The survey was conducted in April 1-18, 2013 and the full 2013 report on the survey of household finances and living conditions is scheduled to be released in November 2013.
- <sup>19</sup> Korea Institute of Finance (2013), *White Paper on Household Debt in Korea*.

- <sup>20</sup> The ratio of government debt to GDP continuously rose, without missing a year, from 18.4% in 2000 to 34% in 2012. The government debt was 111.2 trillion *won* in 2000 and 445.2 trillion *won* in 2012 (KOSIS, Statistics Korea).
- <sup>21</sup> Although the size and the extent of burden of the household debt may negatively affect the international credit standing of an economy if the debt causes financial institutions to fail, this is not the instance in Korea for its international credit standing at present is at its highest level since the Asian financial crisis. Korea Institute of Finance (2013), *White Paper on Household Debt in Korea*.
- <sup>22</sup> This section relies heavily on the 2012 KIF report Lee, Meyong-hwal, Gu, Bon-seong, and Gyu-bok Lee, "The analysis of the rise in household debt in Korea," *Financial VIP Series* (2011). [http://www.kif.re.kr/KMFileDir/129683015415186250\\_FVIP2011-23.pdf](http://www.kif.re.kr/KMFileDir/129683015415186250_FVIP2011-23.pdf).
- <sup>23</sup> *Ibid.*
- <sup>24</sup> Korea Institute of Finance (2013), *White Paper on Household Debt in Korea*.
- <sup>25</sup> Lee, Meyong-hwal, Gu, Bon-seong, and Gyu-bok Lee, 2012 KIF report "The analysis of the rise in household debt in Korea," *Financial VIP Series* (2011). [http://www.kif.re.kr/KMFileDir/129683015415186250\\_FVIP2011-23.pdf](http://www.kif.re.kr/KMFileDir/129683015415186250_FVIP2011-23.pdf).
- <sup>26</sup> Lee Seong-tae, Governor of the BOK in 2009.
- <sup>27</sup> According to a KIF report, the application of the risk weighting ratio of the home equity loan used in advanced countries also contributed to the banking sector's expanding home equity loan, which also raised the volume of household debt.
- <sup>28</sup> Korea Institute of Finance (2013), *White Paper on Household Debt in Korea*.
- <sup>29</sup> Bank of Korea Report on the survey of household finances and living conditions (2012).
- <sup>30</sup> All financial institutions except the BOK and deposit-receiving banks.
- <sup>31</sup> Hana Institute of Finance, "자금: 비은행권의 가계대출 확대에 주목할 필요," *Weekly Hana Financial Focus*, 1, no. 32 (2011): 16-17, <http://www.hanaif.re.kr/kor/pdf/focus111112/6.pdf>.
- <sup>32</sup> Ho Shin, "7등급 이하 대출 은행 3%p↓·비은행 4%p↑," YTN 24 Hour News Channel, November 2, 2012. [http://ytn.co.kr/\\_ln/0102\\_201211021326356909](http://ytn.co.kr/_ln/0102_201211021326356909).
- <sup>33</sup> The FSS opined that the delinquency rate of the New Hope Dream Loan Program is not that high in comparison with those of savings banks (a type of secondary financial institution) at 11.3% and credit card companies at 2.77%.
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KOREA'S EXPANDING  
NUCLEAR AND DEFENSE  
AMBITIONS

# SOUTH KOREA'S DEFENSE INDUSTRY: INCREASING DOMESTIC CAPABILITIES AND GLOBAL OPPORTUNITIES

Richard Weitz

## ABSTRACT

Since the end of the Korean War, the United States has been the largest supplier of defense systems to the Republic of Korea (ROK). The imperative of maintaining military interoperability with the U.S. armed forces often proved a decisive factor for ROK decision makers. However, ROK officials have tried to increase the amount of military equipment, technology, and services that South Korea acquires from non-U.S. sources, with a priority given to domestic suppliers. ROK procurement officials have concluded that U.S. companies do not always provide the best deals in terms of cost, performance, and timeliness. In addition, they are frustrated with the restrictions and terms typically associated with U.S. defense imports, especially limitations on the transfer and re-sale of U.S. technologies as well as the problems entailed in meeting South Korean demands for substantial offsets. ROK governments have also sought as much as possible to draw on the country's own burgeoning defense industries. At first, ROK defense companies' low private R&D spending, overcapacity and other structural inefficiencies, small number of exportable products, limited competitiveness in foreign markets, and bans on the sale of items with U.S. technology to third countries constrained their actual and potential contributions. But over time ROK firms have overcome many of these obstacles. In addition, the same factors that have enabled South Korea's industry to substitute for previously imported defense items have made them better able to compete for foreign sales: the growing sophistication and size of South Korea's civilian economy, the companies' improving human capital and productivity, mandatory technology transfers and offsets, and extensive ROK government support for the industry.

**Key words:** *weapons, arms, technology transfer, defense, military*

## INTRODUCTION

During the past decade, the ROK has become a global player with worldwide interests. ROK policy makers have raised their country's international profile by hosting high-level events, participating in international peacekeeping, and promoting South Korea as a model for combining democracy with rapid economic development. Seoul hosted the November 2010 G-20 Summit, the November 2011 High-Level Forum on Aid Effectiveness, and the March 2012 Nuclear Security Summit. South Korea has vigorously participated in the activities of various subsidiary and specialized UN agencies, as well as other international organizations. In October 2012, several years after a South Korean foreign minister was selected as UN Secretary General, the ROK was elected to hold a non-permanent seat on the U.N. Security Council for the 2013 and 2014 terms. South Korea is also a committed member of various international nonproliferation regimes, such as the Global Initiative to Combat Nuclear Terrorism, the Missile Technology Control Regime, and the Proliferation Security Initiative.

The United States and the rest of the international community have benefitted from South Korea's growing global leadership and engagement. The United States and South Korea are also coordinating more effectively and comprehensively on global diplomatic, development, and defense issues. South Korea has more development workers serving abroad than any other country after the United States. ROK and U.S. planners have discussed ways that their two militaries can support each other in humanitarian and disaster-relief missions, as well as other extra-Korean contingencies, by building on their existing Peninsula-based cooperation. Not only does the ROK accept the necessity for U.S. Forces Korea to contribute to its possible extra-peninsular missions, but also South Korea's own military modernization program, the Defense Reform Project 2020 adopted in 2005, has increased its capacity to participate in missions outside of Korea. South Korea now stations hundreds of its troops overseas, and has twice commanded multinational counter-piracy missions in the Gulf of Aden. The ROK has deployed a Provincial Reconstruction Team to Afghanistan and is helping train the Afghanistan National Security Forces as they prepare for the departure of most Western combat forces at the end of 2014.<sup>2</sup>

Despite its small size and limited population, the ROK's economy has become one of the world's largest. South Korea has joined the elite Group of Twenty (G-20) leading industrial countries and has negotiated free trade agreements with many foreign partners. ROK companies are expanding their presence in global markets as well. For example, South Korea has rapidly emerged as one of the world's leading suppliers of civil nuclear energy technologies and services. Many of these trends are also replicated in the defense sector. South Korea has built up one of the most impressive defense industrial bases among the newly industrialized states in the Asia-Pacific. The country's total



military expenditure surpassed \$31 billion in 2012, making it the third largest defense spender in Asia and the 12th largest in the world.<sup>3</sup> South Korea has become one of the largest markets for conventional weapons for its military, the world's eighth largest with some 680,000 soldiers, 2,500 tanks, 850 fighter jets, 100 helicopters, and about a dozen submarines and major surface warships.<sup>4</sup> According to the Stockholm International Peace Research Institute, during the 2008-2012 period, South Korea accounted for five percent of all global imports of major conventional weapons; of these imports, 77 percent came from the United States, 15 percent from Germany, and 5 percent from France.<sup>5</sup>

Yet, over time, South Korea has reduced the percentage of these weapons that it has purchased from U.S. sources, while raising the share of arms imported from non-U.S. companies and the proportion of weapons manufactured in South Korea. Meanwhile, ROK companies have become major players in the global defense industry, which has for decades been dominated by Russian, European, and U.S. firms. South Korea's annual arms exports reached \$2.4 billion in 2011 and the government hopes to achieve \$3 billion in arms exports in 2013.<sup>6</sup> The South Korean Defense Agency for Technology and Quality expects this figure to double to \$4 billion by 2020.<sup>7</sup> ROK defense exports compete internationally in the armored vehicle, shipbuilding, and aerospace sectors. Among other considerations, the ROK's changing role in international arms markets poses new challenges and opportunities for its foreign partners, including the United States.

## BUYING BEYOND THE UNITED STATES

Since the end of the Korean War, the United States has been the largest supplier of defense systems to South Korea due to the two countries' strategic ties, joint military commands and exercises, South Koreans' long familiarity with U.S. weaponry, and interoperability considerations. Initially, South Korea lacked a major defense industrial sector, and buying weapons from the United States was seen as a natural means of reinforcing the bilateral alliance upon which the new state of South Korea depended. Beginning in the mid-1970s, South Korea initiated an aggressive and increasingly ambitious defense industrialization program, with the long-term goal of establishing "a basic foundation for a self-defense capability for the twenty-first century."<sup>8</sup> The motives for this indigenous defense industrialization were not only military, but also economic and political. The ROK consciously pursued a parallel strategy of "security and development," that is, building up its heavy industry and high-technology sectors while striving for greater self-sufficiency in arms production.<sup>9</sup> Moreover, South Korea pursued an advanced arms production capability to enhance its international status and influence.<sup>10</sup>

By the 1980s, the South Korean defense industry was producing a variety of unsophisticated combat equipment, including small arms like the K2 rifle, short-and medium-range missiles such as the Hyunmu, short-range field artillery like 155mm

self-propelled howitzers, small-scale naval vessels like fast attack patrol boats, the Hughes 500MD helicopter, and the F-5E Tiger II fighter aircraft.<sup>11</sup> But the United States still had a dominant role in South Korea's developing defense industry due to these ROK firms' licensing and co-production agreements with major U.S. defense companies. In turn, U.S. corporations received large ROK defense contracts to co-produce these ROK weapons as well as supply more advanced systems that the ROK industry was unable to manufacture. U.S. firms also enjoyed the opportunity to import inexpensive defense components from South Korea's manufacturing plants, which typically had lower labor costs and other production expenditures.<sup>12</sup> One reason why the United States and ROK governments favored this close cooperation was that their militaries benefited from using the same weapons, making it easier to share logistics, tactics, and other military elements. The imperative of maintaining military interoperability with the U.S. armed forces has often proved a decisive factor in Seoul's defense procurement decisions. In recent years, significant U.S. sales and co-production of defense equipment have included: the K-1 (Type 88) Tank, SAM-X surface-to-air missile, P-3 maritime patrol aircraft, F-16 C/D fighters, UH-60 Blackhawk helicopters, the T-50 "Golden Eagle" advanced trainer jet, F-15K jet fighters, and the KDX III Naval Destroyer. These systems continue to form the backbone of the ROK's military.

However, during the past two decades, ROK officials have tried to increase the military equipment, technology, and services that South Korea acquires from non-U.S. sources, with a priority given to domestic suppliers. The policy of diversifying beyond U.S. defense firms began in the 1980s, but was accelerated when the Roh Moo Hyun government sought to enhance South Korea's ability to pursue policies independent of Washington, manifested in part by Roh's decision to seek wartime operational control (OPCON) of South Korea's armed forces.<sup>13</sup> More recently, commercial rather than economic considerations have been driving Seoul to buy more non-U.S. weapons. ROK officials have concluded that U.S. companies do not always provide the best deals in terms of cost, performance, and timeliness. In addition, the policy now reflects ROK officials' frustrations with the restrictions and terms typically associated with U.S. defense imports, especially limitations on the transfer and re-sale of U.S. technologies as well as the problems entailed in meeting South Korean demands for substantial local content and other offsets. Competing foreign governments and companies have often proven more forthcoming than their U.S. counterparts in agreeing to transfer sensitive military technology to South Korea to offset defense sales.

Over time, the ROK has increasingly acquired its weapons from other countries as well as manufactured its own weapons systems. At first, foreign defense firms complained about the difficulties of competing with long-established U.S. rivals in the ROK market. But in recent years, South Korean officials have resisted Washington's pressure to buy some expensive U.S.-made weapons systems, such as the PAC-3 air and missile defense system, the SM-3/Aegis ballistic missile

defense system, and the Apache attack helicopter, while making major contracts with other foreign competitors. In August 2011, the Ministry of National Defense's Defense Acquisition Program Administration (DAPA) announced it would procure antisubmarine helicopters. The British AgustaWestland AW-159 Wildcat helicopter and the U.S. Sikorsky SH-60 Seahawk helicopter were the main competitors. Given the advantage of interoperability and the traditional relationship between the United States and South Korea, it seemed likely that Sikorsky would win the contract. During the DAPA evaluation in September 2012, the SH-60 Seahawk helicopter had a higher rating. But the DAPA unexpectedly announced in January 2013 that AgustaWestland won the tender.<sup>14</sup> In 2012, the DAPA rejected the U.S. plan to sell four Global Hawk UAVs, worth \$1.2 billion, to South Korea. In June 2013, the DAPA announced that it would buy the Taurus KEPD-350, a joint venture between European groups MBDA and Saab, rather than Lockheed Martin's AGM-157, for its Joint Air to Surface Standoff missile project.<sup>15</sup> A major reason for the decision was the U.S. government's reluctance to relax restrictions on the export of its most advanced missile technologies.<sup>16</sup> Other notable European successes in the South Korean defense market include the SAM-X project, which purchased the German MIM-104C Patriot PAC-2; the K-2 Black Panther Tank; Korea Aerospace Industries (KAI)'s Surion (helicopter) research and development contract with Eurocopter; and the MBDA Missile System's Mistral missiles. Furthermore, on August 27, 1995, Israel and South Korea signed a Memorandum of Understanding on Cooperation in Logistics and the Defense Industry, which established a committee that meets regularly to exchange information about military technology. Between 2005 and 2010, Israel exported \$187 million worth of defense commodities to South Korea.<sup>17</sup> In January 2011, the ROK awarded Israel's Elisra Electronic Systems a \$29 million contract to supply Airborne Electronic Warfare (AEW) Suites and missile warning systems for the ROK air force's CN-235 aircraft. In addition, the ROK purchased Israel Aerospace Industries' Harpy loitering anti radar UAV and its Green Pine phased array long radar.<sup>18</sup>

## IMPORT SUBSTITUTION

While considering a wider range of foreign suppliers, the South Korean government has sought to purchase more defense items from the country's own burgeoning defense industries. More than a decade ago, the ROK's Defense White Paper 1999 affirmed a commitment to acquire "the ability to independently develop primary weapons systems for core force capability." The more recent Defense Reform Plan 2020, enacted in 2005, emphasized a self-reliant defense posture through increasing indigenous capabilities and defense R&D. The Plan aimed to grow the defense budget 11.1 percent annually through 2015 and 7.1 through 2020.<sup>19</sup> Although defense spending has not grown as rapidly as planned, private defense R&D investment increased from \$132.2 billion in 2005 to \$410.7 billion in 2008.<sup>20</sup> South Korea's defense R&D budget in 2010 was 1,795 billion

won, or approximately US\$1.5 billion, comprising around 6 percent of total military spending.<sup>21</sup>

At first, ROK defense companies' limited private R&D spending, overcapacity and other structural inefficiencies, small number of exportable products, limited competitiveness in foreign markets, and bans on the sale of items with U.S. technology to third countries constrained their actual and potential contributions. For a while, most arms manufacturing centered on licensed production of foreign military systems, such as the U.S. F-5 and F-16 fighters and the German Type-209 submarine. Production gradually progressed to indigenously developed equipment, such as the T-50, the K1/K1A1 main battle tank, and the KDX-I, II, and III destroyers. In recent years the ROK has built a broad-based defense industry with particular strengths in the aerospace, land ordnance, and shipbuilding sectors. At present, 80 percent of South Korea's arms are procured domestically, including main battle tanks, armored vehicles, warships, submarines, and many missiles and combat aircraft.<sup>22</sup> South Korea has recently developed its own anti-ship and land-attack cruise missiles, a new tank (the XK-2) and infantry fighting vehicle (the K21), and it plans to build its own class of attack submarines and a variety of advanced unmanned aerial vehicles (UAVs).<sup>23</sup>

The South Korean government has used defense contracts and other means to develop the country's private defense industry. Like Japan, South Korea has relied heavily on the country's small number of large industrial conglomerates (*chaebol*), such as Samsung, Hyundai, and LG, rather than state-owned enterprises to carry out national arms production. Local arms manufacturing is heavily concentrated in just a few *chaebols*: Hyundai Rotem builds main battle tanks; Doosan Infracore, armored vehicles; LIG Nex 1 (formerly LG Precision), missile systems and electronics; Samsung Techwin, jet engines and artillery systems; and Hyundai Heavy Industries, surface combatants and submarines. In addition, Korea Aerospace Industries (KAI, jointly owned by Samsung, Doosan, and Hyundai) produces all of the country's military aircraft, including the T-50, the KT-1 'Woong-Bee' intermediate trainer, helicopters, and some UAVs.

The South Korean government has been heavily involved in the arms production process by providing direct and indirect subsidies to manufacturers, underwriting defense research and development planning, and designating firms (such as KAI) as monopolistic suppliers of critical military equipment.<sup>24</sup> Defense research and development (R&D) in South Korea is managed by the Agency for Defense Development (ADD), which has a staff of several thousand people, mostly engineers, technicians, scientists, and other personnel engaged in research and development. ADD undertakes the R&D of weapons systems and core technologies, manages the development of dual-use and core technologies, and conducts operational testing and evaluation of developmental systems. It is

responsible to the DAPA, which oversees armaments acquisition in South Korea, including determining requirements, approving R&D projects, and assessing testing and evaluation results. ADD works directly with the local defense industry on prototyping and production of ADD-development weapons systems, as well as with industry think tanks, universities, and research institutes on basic and applied research and on core technology development. ADD is comprised of seven R&D institutes (precision-guided munitions, command, control, communications and computing [C4], intelligence, surveillance and reconnaissance [ISR], 'neo-technologies,' ground systems, naval systems, and aircraft systems) and one test center. Each R&D institute operates its own network of research laboratories.<sup>25</sup>

As in Japan, South Korea's increasingly advanced civilian dual-use industries have facilitated the growth of the country's defense sector. The ROK's improving civilian information technology, heavy machinery, shipbuilding, and aerospace sectors have made it easier to manufacture more advanced defense systems. In addition, the South Korean government has helped the defense industry by demanding that foreign partners transfer technology and provide other assistance to local firms. Under new procurement policies, foreign contractors are required to provide a guarantee in advance that the proposed technologies will be approved by the respective government or regulatory agencies for transfer to South Korea prior to the approval of the offset contract. So far, most U.S. defense contractors have acquiesced to ROK demands to maintain their strong foothold within the country, but their continued cooperation on technological restrictions may prove difficult as ROK firms compete more directly with U.S. industries in third-party markets.

## SEEKING GLOBAL MARKETS

The same factors that have enabled South Korea's industry to substitute for previously imported defense items have made them better able to compete for foreign sales: the growing sophistication and size of South Korea's civilian economy, the companies' improving human capital and productivity, mandatory technology transfers and offsets, and extensive ROK government support for the industry in the form of billions of dollars for domestic military contract and R&D efforts. ROK governments have favored exports as another means to give other countries a stake in South Korea's security as well as an opportunity to create more high-tech jobs and lower unit costs for the ROK armed forces through larger production runs. For example, the Lee Myung-bak administration's goal was to make the defense industry an "engine of growth" that would make \$4 billion in yearly exports and employ 50,000 people by 2020.<sup>26</sup> From 2001-2008, military aircraft (especially F-16 fighters, K-1 trainers, and T-50 advanced trainers) accounted for the largest percentage (32.1 percent) of the ROK's total military exports, followed by ammunition (22.3 percent), off-set based exports (18.3 percent), and artillery and other ground force equipment (18 percent).<sup>27</sup>

The United States has been the main purchaser of South Korean arms exports, especially ammunition and parts and services for older U.S. combat aircraft. Turkey has been the second largest buyer, procuring self-propelled howitzers, trainer jets, and technology for a new main battle tank.<sup>28</sup> South Korean firms have also contributed to meeting the surging demand for arms in Southeast Asia, where China's growing military power and assertive territorial stance has been alarming Beijing's neighbors. The sale of the KAI's KT-1 Woongbi and T-50 Golden Eagle supersonic trainer aircraft, jointly developed by KAI and Lockheed Martin, to Indonesia in 2011 made South Korea only the sixth country to export supersonic jets.<sup>29</sup> Indonesia has also purchased armored personnel carriers, infantry fighting vehicles, self-propelled howitzers, 16 T-50 trainers, and three Type 209 1,200-ton submarines made by Daewoo Shipbuilding & Marine Engineering, and also agreed to contribute one-fifth of the costs for developing South Korea's experimental next-generation fighter jet.<sup>30</sup> South Korean firm LIG Nex1 also plans to sell the latest antisubmarine technology to Indonesia, including the Blue Shark lightweight torpedo, which is a submarine torpedo that can be deployed by helicopters, ships, and aircraft.<sup>31</sup> In recent years, Malaysia has spent from \$100 million to \$400 million annually on South Korean arms.<sup>32</sup> In 2012, South Korea held its first military talks with Vietnam to expand defense cooperation and has bolstered ties with the Philippines.<sup>33</sup> Thailand has also expressed interest in the Surion utility helicopter, developed jointly by KAI and Eurocopter, and the T-50 Jet.<sup>34</sup> In October 2013, India signed a contract to buy eight countermeasure ships from South Korea's Kangnam Corp to replace some aging vessels purchased from Russia.<sup>35</sup> Meeting Indian demands for technology transfer, under the offset agreements, two ships will be built in Kangnam's naval shipyard in Busan and India's Goa Shipyard will manufacture the remaining six.<sup>36</sup> Furthermore, President Park Geun-hye and Philippine President Benigno Aquino III signed a defense industry cooperation in October 2013 that calls for enhanced exchanges in military technology, defense information, and more visits between their military personnel and analysts.<sup>37</sup> The Philippines is also looking to spend \$650 million on South Korean frigates.<sup>38</sup> Earlier this year, South Korea signed a defense cooperation agreement with Saudi Arabia, perhaps portending an ROK breakthrough in the profitable Middle East arms market that would build on previous large sales to Iraq.<sup>39</sup>

The FA-50 light combat aircraft is proving to be an especially popular export item in Southeast Asia, with Indonesia in 2011 and now the Philippines seeking an inexpensive plane for close-air support missions. The FA-50 is a light attack variant of the T-50. It can be armed with air-to-air and air-to-surface missiles, machine guns, and precision-guided bombs and its Israel Elta System EL/M-2032 PULSE Doppler radar has a range of 100 kilometers.<sup>40</sup> Earlier this year, the Philippines announced that it would purchase 12 FA-50s for \$443 million to make up for its lack of fighter aircraft since retiring its fleet of F-5s in 2005.<sup>41</sup>

To meet its goal of selling 1,000 FA-50 and T-50 Golden Eagle supersonic trainers during the next 30 years, KAI sees South America as an expanding market.<sup>42</sup> The DAPA, along with ROK firms, have recognized the potential business opportunities in South America, as these governments seek to replace aging military equipment to enhance security capabilities to keep in pace with economic development.<sup>43</sup> Since 2006, South American countries have imported \$48.9 million worth of ROK defense gear including trucks, flak vests, ammunition, and communication devices.<sup>44</sup> In 2010, DAPA Commissioner Chang Sooman and Colombian Defense Minister Rodrigo Rivera signed a memorandum, which the ROK hopes will help them break into Colombia's emerging defense industry. Colombia is potentially interested in the ROK's tanks, armored vehicles, and guided missiles.<sup>45</sup> In November 2012, KAI signed its first aircraft sale in Latin America, when Peru agreed to purchase 20 KT-1 trainers worth \$200 million.<sup>46</sup> Another Korean firm, Daewoo Shipbuilding Marine Engineering Co. (DMSE) is seeking a bid to modernize a Peruvian naval ship.<sup>47</sup> Historically, Colombia has had close ties with the U.S. military in order to combat the illegal drug trade, but the ROK's willingness to transfer key technology has enabled Colombia to look for alternative suppliers instead of their traditional client.

In what the ROK administration hopes will be the first of several defense sales to Europe, Polish President Bronislaw Komorowski said he wanted to purchase the T-50 when South Korean President Park visited Poland this October. They also agreed to form a bilateral defense cooperation agreement that could see Poland considering ROK suppliers for planned upgrades to its arsenal of submarines, patrol aircraft, and helicopters.<sup>48</sup> KAI plans to compete directly with Lockheed Martin for the U.S. Air Force T-X program contract; the Pentagon could pay several billion dollars for the 300 aircraft.<sup>49</sup> One technique ROK defense firms may employ to further boost their exports is to partner with other developing countries seeking to develop their own defense industries. For example, South Korean firms have shared military technology with Indonesia and partly funded their joint development of jet fighters (KFX/IFX) and 1,400-ton submarines.

However, South Korea's defense industry experienced a significant setback in 2012 when Israel selected Italy's Alenia Aermacchi M-346 rather than the Korea Aerospace Industries' T-50 Golden Trainer for a \$1 billion contract for 30 new supersonic fighter training aircraft.<sup>50</sup> Another problem has been that China has objected to some ROK defense sales to the Philippines and may continue to protest ROK defense exports to Vietnam or other countries that have territorial conflicts with Beijing.<sup>51</sup> Furthermore, the ROK's defense industry remains heavily focused on meeting domestic demand. In contrast, other Western countries expend more of their defense production. Exports only account for 7 percent of defense-related trade in Korea. In 2011, South Korea exported \$2.3 billion worth of military equipment, but the defense industry trade deficit amounted to \$8 billion, second only to India.<sup>52</sup> In addition to South Korea's heavy domestic consumption, ROK firms still lag

behind global leaders in some core technologies, which they have to import; these include aviation electronics, flight/armament controls, stealth/composite materials, rotor design, and certification technology related to aviation.<sup>53</sup> Defense analysts also call on the ROK government to improve the cost system, exempt exports from royalties, and work with the defense industry to establish a one-stop support service, and take other initiatives to expand exports.<sup>54</sup>

## POLICY IMPLICATIONS

It is important not to exaggerate the extent of these changes. The United States' grip on the international arms market is declining, while South Korean defense firms are experiencing growth, but the United States still remains the largest international arms dealer, with a 30 percent share of total arms exports in 2012, worth more than \$200 billion, while South Korea imported nearly 12 percent of U.S. arms exports.<sup>55</sup> Furthermore, the United States is the world's largest supplier of combat aircraft (62 percent of total exports), which happens to be South Korea's major military import.<sup>56</sup> South Korea is the world's fourth largest arms recipient (5 percent) and 55 percent of its total imports are military aircraft.<sup>57</sup> Almost 77 percent of the ROK's military aircraft comes from the United States.<sup>58</sup> The ROK also relies heavily on U.S. firms for surveillance and reconnaissance technology.<sup>59</sup>

South Korea's unexpected decision earlier this year to annul its tender to purchase 60 advanced fighter planes highlights how U.S. companies will often remain the supplier of choice for the most advanced weapons systems. Boeing's F-15 Silent Eagle, an upgraded version of the F-15E, the dominant model in the ROK Air Force, seemed set to win the \$7.7 billion tender in the F-X fighter acquisition program. This is the most expensive defense contract ever offered in the ROK, derived from the need to replace its aging fleet of F-5 and F-6 fighters. Boeing's was the only bid to fall under the proposed parliamentary budget ceiling, and would be cheaper to maintain thanks to the ROK's earlier Boeing purchases. Boeing also pledged \$2 billion in technology transfer and to buy \$1.5 billion in South Korean aircraft parts as well as build a sophisticated LVC simulator. But the South Korean military insisted on considering the more advanced Lockheed Martin F-35A (aka the Joint Strike Fighter), which is the only genuine fifth-generation fighter (fully stealthy) among those planes on offer. Lockheed Martin also pledged to engage in joint projects with South Korean companies worth more than \$5 billion, transfer considerable technology to ROK manufactures, and launch a military communication satellite that would be under South Korean control.

The government will now develop a new budget and tender, which may require raising the spending ceiling, lowering the number of planes ordered below 60, or delaying the desired entry into the fleet of the first plane after 2017. Although the conventional combat aviation threat from North Korea is minimal, the ROK



military might want the ability to attack North Korean nuclear weapons, mobile missiles, or long-range artillery with conventional manned aircraft as well as its arsenal of ballistic missiles and armed drones. In any case, the ROK Air Force's points of comparison are China and Japan—the latter country is buying the F-35 while China is developing its own stealth fighter. The other F-X competitor, EADS, offered a strong supplementary package along with its Typhoon plane, which included pledging to invest \$2 billion in the KFX (Korea's next jet fighter) project and produce only 7 Typhoons in Europe and the other 53 in South Korea, which would bring technology and jobs to ROK industries. The Typhoon—co-developed by three firms from the four partner countries of Britain, Germany, Italy, and Spain—can perform complicated maneuvers at supersonic speeds but lacks some stealth capabilities, now considered an essential attribute of any top-line air force despite the higher unit costs.<sup>60</sup> Since the collapse of the deal, Lockheed Martin has taken orders for the F-35 from the Netherlands, Britain, Turkey, Australia, Italy, Norway, and Japan. Given the increased production of the F-35, it is possible that Lockheed Martin will reduce the price of its tender bid.<sup>61</sup> Boeing, for its part, insists that it has not given up and remains engaged with South Korea over the possible sale of F-15 fighters.<sup>62</sup>

Furthermore, in late October 2013, the ROK announced its intention to purchase 112 Raytheon GEM-T Anti-Tactical Ballistic Missiles from the United States as it develops the KAMD (Korean Air and Missile Defense) program.<sup>63</sup> The GEM-T is an updated version of the PAC-2 system currently in South Korean service.<sup>64</sup> Pushing forward with KAMD means committing to an independent ROK missile shield, although South Korean officials insist that it will operate in close concert with its American counterpart on the peninsula.<sup>65</sup>

In any case, the recent fighter and missile defense contracts are misleading in that such high-end deals, where only a few Western firms can meet the strenuous demands, will be increasingly rare. To keep the United States a defense partner of choice in more competitive tenders, the U.S. treatment of South Korean defense companies could prove critical for the future bilateral defense industrial relationship. The Pentagon purchased more than \$1.1 billion worth of South Korean goods and services in fiscal year 2011, which marked a 12.6 percent increase from the \$991 million for FY2010. South Korea's share of U.S. military procurement rose from 3.5 percent to 4.7 percent during the same period, making the ROK the Pentagon's seventh largest foreign national vendor. However, the defense trade remains heavily balanced in favor of the United States, with South Korea's Defense Acquisition Program Administration continuing to buy major U.S. systems. ROK procurement officials may limit purchases of the U.S.-made F-35, or demand extensive offsets, due to this imbalance. Increased U.S. purchases of South Korean defense articles could lessen pressures on ROK officials to buy non-U.S. military products. Such purchases should also increase support for controversial U.S. defense industrial initiatives, such as its ballistic

missile defense program, and help reduce tensions over ROK-U.S. negotiations regarding how much host-nation support South Korea should provide the U.S.

U.S.-ROK competition on third-party defense markets presents less of a problem in terms of alliance relations since the solution is to make U.S. defense exports more competitive in general rather than just against ROK corporations. Although unable to match the quality of some U.S. defense exports, South Korean companies can often win contracts based on their lower costs and greater ability to transfer military technology to potential buyers. Obviously, there are countries, like the Arab monarchies, who can afford to pay the highest prices for the best quality weapons, and also hope their purchases generate influence in Washington. But many other countries will find South Korean weapons systems of sufficient quality for their needs, and also gain from the ROK's less restrictive technology transfer policies. But in these respects, South Korean firms are joined by Russian and increasingly Chinese defense companies, which can capture defense markets where the buyer is seeking "good enough" weapons at substantially lower costs than their U.S. competitors and with more generous technology transfer provisions.<sup>66</sup> In addition to ensuring a level playing field by denying foreign competitors access to unfair subsidies, proprietary information, or proliferation loopholes, meeting this challenge will require U.S. defense corporations to lower their costs, increase their reliability, and support the Obama administration and Congress in their efforts to reform U.S. defense export laws and regulations to make it easier for U.S. firms to transfer widely available military technologies to foreign buyers while still protecting U.S. defense secrets.

## CONCLUSION

Since the end of the Korean War, the United States has been the largest supplier of defense systems to South Korea due to the imperative of maintaining substantial military interoperability with the U.S. armed forces. However, ROK officials have increased the amount of defense equipment, technology, and services that South Korea acquires from non-U.S. sources, with a priority given to domestic suppliers, as part of a general effort to diversify South Korea's international ties and strengthen the country's self-reliance. At first, ROK defense companies' limited private R&D spending, structural inefficiencies, small number of exportable products, limited competitiveness in foreign markets, and bans on the sale of items with U.S. technology to third countries constrained their actual and potential contributions, but over time ROK firms have overcome many of these obstacles. In addition, the same factors that have enabled South Korea's industry to substitute for previously imported defense items have made them better able to compete for foreign sales: the growing sophistication and size of South Korea's civilian economy, the companies' improving human capital and productivity, mandatory technology transfers and offsets, and extensive ROK government support for the industry. Ensuring that U.S. suppliers remain important partners of South Korea requires addressing ROK complaints that U.S. companies often

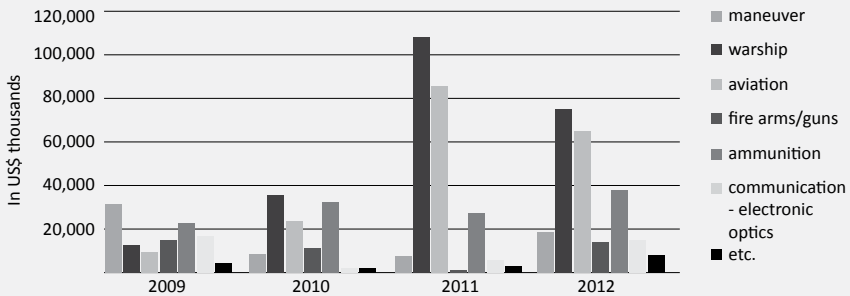
fail to provide the best deals in terms of cost, performance, and timeliness, and limit South Korea's access to technologies that are readily provided by alternative suppliers. Although South Korea's rising arms exports present a challenge for U.S. arms exports, they also offer U.S. firms and the Pentagon opportunities to purchase high-quality ROK defense items and thereby reinforce the traditional U.S.-ROK military alliance as the alliance between the United States and South Korea continues to transform and strengthen.

**Table 1: ROK's Defense Articles Exports [in US\$ thousands]**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Exports	24,061	41,782	26,234	25,323	84,493	103,144	116,592	118,797	238,195	235,284
Maneuver	2,428	5,406	2,362	1,849	3,783	36,066	32,458	8,490	7,174	19,144
Warship	7,506	14,997	358	0	2	92	13,698	36,548	108,223	75,162
Aviation	6,305	10,352	16,413	10,169	44,028	25,895	9,893	23,780	84,979	65,283
Fire Arms/Guns	3,971	89	2,482	6,581	2,672	10,190	15,907	11,490	1,203	14,582
Ammunition	2,712	8,114	2,611	5,017	28,805	25,796	23,142	33,376	27,295	38,592
Communication - Electronics Optics	25	1,754	76	434	1,125	4,022	17,192	2,591	6,338	14,821
Etc.	1,114	1,071	1,932	1,272	4,077	1,082	4,302	2,522	2,984	7,700

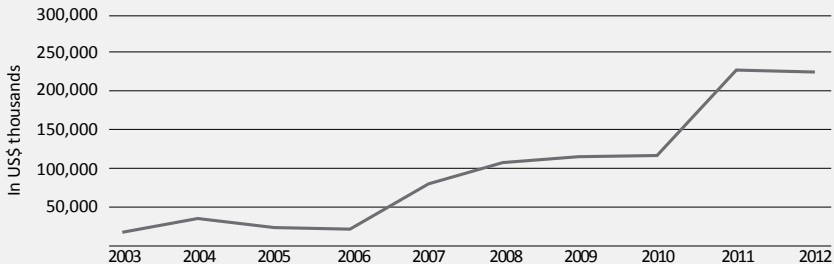
Source: Defense Acquisition Program Administration of ROK.

**Figure 1: ROK's Defense Articles Exports**



Source: Defense Acquisition Program Administration of ROK.

**Figure 2: ROK's Defense Articles Exports**



Source: Defense Acquisition Program Administration of ROK.

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# REACTOR RACE: SOUTH KOREA'S NUCLEAR EXPORT SUCCESSSES AND CHALLENGES

Chen Kane and Miles A. Pomper

## ABSTRACT

South Korea hopes to become a major exporter of nuclear plants. Its success in building up its domestic nuclear industry, winning a \$20.4 billion contract to build four nuclear power plants in the United Arab Emirates (UAE), building Jordan's first research reactor, and providing training programs and best practices to nuclear newcomer states indicates that established vendors should take this determination seriously. If South Korea draws the right lessons from its experience with the UAE and builds upon its competitive advantages in the international nuclear energy market—low cost, high credibility, high performance, strong political backing, attractive financing, and U.S. technology at a low cost—it could record similar success in the future.

**Key words:** *Nuclear Cooperation Agreement, nuclear exports, pyroprocessing, enrichment, reactors*



South Korea hopes to become a major exporter of nuclear plants. Fresh off winning a highly competitive \$20.4 billion contract to build four nuclear power plants in the United Arab Emirates (UAE), building Jordan's first research reactor, and providing training programs as well as sharing best practices with nuclear newcomer states, the ROK in 2010 announced that it would seek to export 80 nuclear reactors by 2030.<sup>1</sup> Subsequently, the 2011 Fukushima nuclear accident in Japan, the global financial crisis, and the limitations of South Korea's nuclear industry have forced the ROK to scale back these ambitious objectives. Nonetheless, South Korea remains intent on securing additional global reactor contracts in countries such as India, Vietnam, Poland, Saudi Arabia, and South Africa, as well as bigger markets such as China and the United States. If South Korea draws the right lessons from its experience with the UAE and builds upon its competitive advantages in the international nuclear energy market, it could record similar success in the future.

## NUCLEAR DEALS

The UAE selected in 2009 a consortium led by Korea Electric Power Corporation (KEPCO), a South Korean government-owned electric utility, for a contract to design and construct four APR-1400s in Barakah. The APR-1400 design is an advanced version of the Combustion Engineering (now Westinghouse) System 80+. Shin-Kori Units 3 and 4, currently under construction in Korea, will serve as the "reference NPPs" for Barakah 1 and 2.

Jordan has been collaborating with South Korea on building Jordan's first research reactor and training Jordanian personnel. In March 2010, Amman signed a \$130 million agreement with South Korea to supply Jordan's first nuclear research reactor. The Korean Atomic Energy Research Institute (KAERI) and Daewoo would construct the reactor at the Jordan University of Science and Technology (JUST). The reactor is expected to be online and operational by 2016. France's Areva will supply the nuclear fuel for the reactor core and a reload batch.<sup>2,3</sup> South Korea has agreed to finance most of the project, providing a \$70 million soft loan, with 0.2 percent interest rate and repayment over 30 years, which includes a feasibility study on environmental impact.<sup>4</sup> The ROK also plans to establish a nuclear training and technology center at JUST where Jordanian nuclear engineers and technicians would be trained by South Korean experts.<sup>5</sup>

South Korea is also considered a leader in nuclear energy training and human development. KEPCO International Nuclear Graduate School (KINGS), established in 2012 KEPCO in cooperation with George Mason University, plans to enroll foreigners as half of its student body, stating, "Raising talents from potential export countries such as Turkey, Jordan, Vietnam and Indonesia will produce valuable networks we need in the future."<sup>6</sup> The 62 students accepted in 2013 came from fifteen countries.<sup>7</sup> Additionally, South Korean companies

and agencies such as KAERI, KINS, Korea Nuclear International Cooperation Foundation (KONICOF), and Korea International Cooperation Agency provide training for nuclear newcomers. South Korea also plans to open an International Nuclear Security Academy next year to help train other countries in nuclear security practices.<sup>8</sup>

Of the two deals South Korea secured so far, the UAE deal is far more significant in terms of its financial impact, as a symbol of South Korea's emergence as a global nuclear player, and the precedent it sets for other potential nuclear deals. As such, it is worth examining the factors that led to the UAE contract.

## WHY THE ROK WON THE UAE DEAL AND LESSONS FOR THE FUTURE

The ROK's successful bid for the UAE contract can be ascribed to political, technical, business, financial, and cultural factors.

### ***Political Factors***

The nuclear deal was not the first large contract the ROK won in the UAE. The countries have been cooperating in strategic sectors, including oil production, finance, and health care. The close ties Korea has cultivated with the UAE in trade and infrastructure projects were of great importance in winning the bid. The UAE is the second-largest oil and natural gas exporter to Korea, and the Emirates have become South Korea's largest export market in the Middle East.<sup>9</sup>

Moreover, the Korean government was adept at using various policy channels to support the Korean consortium, including leadership at the highest levels, including then-Korean President Lee Myung-bak. That Lee was the former CEO of Hyundai Engineering and Construction, a central actor in the Korean consortium, added credibility to the diplomatic exchanges and the Korean bid.

It is also not uncommon to add diplomatic "carrots" to a nuclear bid to make it more attractive. In the South Korea case, in addition to the nuclear deal, the countries also agreed to cooperate on renewable energy, education, shipbuilding, information communications technology and human resource development, as well as the strategic storage of six million barrels of Abu Dhabi oil in Korea. As part of the military cooperation, the ROK military committed to provide two years of special forces training to its UAE counterparts. The two countries will also hold joint military exercises and exchange defense industry technology and high-ranking military officials.<sup>10</sup>

South Korea's close relationship with the United States and Westinghouse's participation in the Korean consortium also played a key role. The UAE appreciated the fact that the South Korean nuclear design is of U.S. origin and

Westinghouse would be involved in the project, making it difficult for the United States, its primary security benefactor, to object to the deal.<sup>11</sup>

### ***Technical Factors***

With 23 nuclear reactors in operation, KEPCO is renowned for having the highest “capacity factor”—the proportion of time that the reactor is generating electricity—and the lowest “unplanned shutdown” rate in the world, at only 0.3–0.5 times per month compared to 3.2 times per month in France (based on South Korean reports).<sup>12</sup>

South Korea also appealed to the UAE’s desire to initiate and complete the project quickly, which not only shortens the time until electricity would be available but also reduces construction and financing costs—the primary cost-drivers in nuclear energy production.<sup>13</sup> Korean companies have proved themselves able to build nuclear power reactors in a relatively short time and follow a predictable schedule. South Korean engineers have developed methods to speed up construction through the use of special quick-drying, high-quality concrete and management techniques that allow tasks to be performed simultaneously.<sup>14</sup>

The overseas capacity of Korea’s nuclear industry will undoubtedly be judged based on its performance in the UAE, its first project outside of South Korea. While the APR-1400 is a new reactor that has not yet been completed in Korea and will have to be modified in order to comply with the regulatory and geographic specificities of the UAE, so far construction is on schedule, or even ahead of schedule, and Korea seems confident it will complete the project before the deadline.<sup>15</sup>

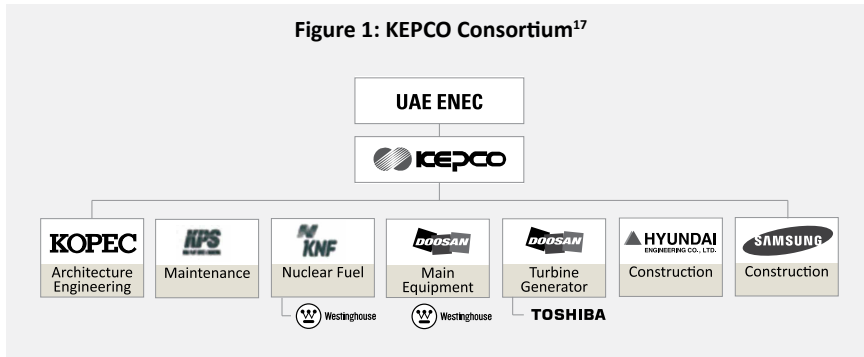
### ***Business Model***

KEPCO and its core group of subcontractors (see Figure 1) have worked together for years on the domestic Korean nuclear power program using a model similar to the one that the UAE is planning to implement. These factors compared favorably with the lack of coordination between Areva and EDF, EDF’s late inclusion into the bid, the high cost of EPR technology, and the fact that Areva planned to outsource some aspects of the reactor construction.<sup>16</sup>

In addition, while in the initial French bid construction and operation risks were divided between Areva, TOTAL and GDF-SUEZ, in the Korean consortium all these risks are borne by KEPCO. This risk allocation puts responsibility on one organization, it reduces the litigation risks in case of delays or performance problems and increases the incentives for the contractor to meet the project delivery objectives.

As a nuclear newcomer, the UAE was looking for a supplier that would be willing and able to support local personnel development with extensive training, human

resources development and education.<sup>18</sup> According to the UAE, one of the main criteria in awarding the contract to South Korea was the ROK's "commitment and detailed planning for human resource development in the UAE in support of the development of a sustainable, domestically-sourced nuclear energy workforce that is dominated by competent national talent."<sup>19</sup> The ROK has also been assisting the UAE with upgrading its quality assurance standards and capabilities as well as training Emiratis both in the UAE and in South Korea.



### **Financial Factors**

As part of the Korean deal, the Korean government attached a letter of intent to the agreement to finance the project. The financing package includes investments, direct loans and external debt guarantees for the special purpose vehicle as well as preferred loans for domestic suppliers.<sup>20</sup> The 23-year deal carries very low interest rates of 1.75 percent to 2.6 percent, with full government guarantees on the various project risks.<sup>21</sup> KEPCO's profit is intended to come out of the payment for the construction of the nuclear plant, a 60-year contract for equipment replacements and potential equity interest. Additional follow-on contracts for long-term operation and maintenance of the Barakah plant, worth as much as another \$20 billion over 60 years, are being discussed with KEPCO and other vendors. Moreover, while the UAE has not declared publicly that it will standardize its nuclear reactor design and choose ROK as the supplier of future reactors, a senior UAE official indicated that this would be the case.<sup>22</sup>

The ROK has relatively low execution costs, a distinct competitive advantage. The APR-1400s built in South Korea are the most inexpensive nuclear reactors in the world (the overnight cost<sup>23</sup> is about 60 percent lower than that of the EPR in France and that of the AP1000 in China).<sup>24</sup> It is estimated that even after taking into account the 10 percent cost of capital and the various adaptations of the reactor design to fit the UAE unique circumstances, the cost of the UAE APR-1400 came in only about 30 to 40 percent above the declared cost of the APR-1400 under construction in Korea—still a very attractive price.<sup>25</sup>

It is not surprising, therefore, that the price tag of the South Korean bid was significantly lower than that of the other bids. While it is unknown what the final bid was for each of the proposals, it was reported that the South Korean price was unmatched.<sup>26</sup> The Korean low price was in fact criticized within South Korea, with the opposition party claiming it was commercially unviable and that future buyers would expect similar terms.<sup>27</sup>

### **Cultural Factors**

At least from the South Korean side, there is a feeling that the two countries have similar historical backgrounds: both have experienced a colonial period, both are newly developed countries with “similar value systems,” and both have a concern for the preservation of traditional “ethics and manners.”<sup>28</sup> The UAE leadership appreciated the fact that KEPCO formed a “war room” in the second basement of its Seoul headquarters in which 75-80 executives from the consortium coordinated the proposal and sales push for more than seven months.<sup>29</sup>

## FUTURE EXPORT POSSIBILITIES

How well will these advantages translate into other ROK nuclear exports? Recently South Korean nuclear insiders have acknowledged that the worldwide decline in nuclear reactor demand after the Fukushima disaster and the global financial crisis, as well as shortages of qualified personnel, mean a more realistic expectation for South Korea to export ten nuclear plants (which can contain several reactors) by 2030.

South Korea’s nuclear reactor exports will be shaped by the broad pull of global nuclear demand, the demand of individual potential customers, and how well South Korea stacks up against competitors in meeting those demands. According to the IAEA, 68 reactors are currently under construction in thirteen countries.<sup>30</sup> Of the seventeen reactors commissioned over the past five years, twelve are located in Asia.<sup>31</sup>

Most nuclear plant customers choose to buy their plants based on their political relationship with the supplier and the economic criteria of reactor price (including financing), scheduling, and quality. In the future, the key question for South Korea is whether it will be able to meet these criteria for future customers in the same way it did for the UAE in the 2009 deal. For the economic criteria, two particular areas of importance will be financing and the availability of key resources needed to meet cost, scheduling, and quality goals. On the political side, Seoul’s ability to maintain and improve relations with the United States and with certain regional players is likely to prove essential.

**Reactor Price, Financing, and ROK Profit Margin.** South Korean nuclear insiders have said that the ROK does not expect to offer as generous prices, and

especially financing, to future customers as it did to the UAE, with one terming the UAE deal “the golden case that will not happen again.” Yet, other customers are likely to seek to pay similar prices as the UAE deal, potentially placing the ROK in a difficult position given the limits of its financial resources.

Of particular challenge on that aspect is that South Korea is competing against Russia, which has been able to participate in build-own-operate (“BOO”) approaches to reactor construction and financing. First employed in the nuclear sector as part of Russia’s deal to sell four nuclear reactors to Turkey, BOO schemes have been employed for project finance in many other sectors, including other types of electricity generation. Under these arrangements, a government buyer only guarantees to purchase the electricity produced by the reactor at a certain price taking no equity in the reactor itself. Therefore, more of the project’s other risks, particularly the financing risks, are born by the nuclear vendor.<sup>32</sup> For a country like Korea already facing financing limitations, BOO schemes may prove impossible.

To be sure, this kind of business scheme has no proven record of success in the nuclear sector. So far, only Russia has made such an attempt, building four nuclear reactors in Turkey, but the arrangement was pushed by the Russian government as part of a broader energy cooperation agreement. Rosatom, as the implementer of the project, is a reluctant participant, doubting the project could prove profitable.

**Resource Availability: Personnel.** Another concern that could prove an obstacle in future ROK export deals is a shortage of sufficient Korean personnel given the number of domestic reactors under construction and the need to staff the UAE plant. It is estimated that KHNP alone will involve 415 to 1,798 people in the UAE nuclear project between 2012 and 2020.<sup>33</sup> According to Park Goon-cherl, president of KINGS, “Korea is running far short of high-skilled manpower for industrial use of nuclear energy.”<sup>34</sup> For future bids, the ROK would need to enhance its personnel and likely need to partner with personnel from other countries including Japan and the United States.

A crucial question will be the degree to which South Korean exports will have to compete for personnel, financial, and manufacturing resources with the construction of domestic plants. Previously, South Korea planned to increase the nuclear share of electricity generation to 59 percent by 2030. For this purpose, five nuclear units are currently under construction and four more units are planned to be completed between 2018 and 2021.<sup>35</sup> However, the Energy Ministry in October 2013 published recommendations by a study group of 60 experts that recommended reducing the portion of electricity generated by nuclear power to 22-29 percent, compared to 41 percent proposed by President Park Geun-hye. If the new administration decides to hold off on initiating further construction of domestic nuclear plants this could free resources for exports.

**Safety.** Following the 2011 Fukushima nuclear accident, South Korea hosted safety reviews by both domestic authorities and the IAEA at all of its operating reactors. As a result, the government has pledged an investment of \$1 billion over the next five years to further bolster nuclear safety.<sup>36</sup> Nonetheless, South Korea's nuclear energy program has recently come under scrutiny after several safety scandals, such as the discovery of microscopic cracks in tunnels that guide control fuel rods and forgery by eight companies of 60 quality and safety certificates for 7,000 parts of "non-core" components used in two reactors between 2003 and 2012.<sup>37</sup> During 2012 and 2013 the country's nuclear reactors experienced multiple temporary unplanned shutdowns through a serious summer heat wave with harsh results. Due to maintenance, other glitches and the fraud investigation, seven of South Korea's 23 nuclear reactors were closed, the heads of KEPCO and KHNP resigned and 100 personnel have been indicted for falsifying documentation.<sup>38</sup> While Emirati officials assessed that the UAE's nuclear plants are "unlikely to be affected by the safety issues dogging Korean reactors," safety, ethic, and organizational culture problems will certainly have to be seriously addressed by the South Koreans to reassure potential future clients.<sup>39</sup>

**Political Factor—the U.S. link.** As noted above, the ROK's links to the United States, both politically and commercially were important to winning the UAE deal. The connection to Westinghouse provided a testament to the quality of ROK reactors for the UAE which took a risk in becoming the first buyer of the ROK's nuclear power plant exports. Politically, the U.S. connection allowed the UAE to avoid offending its primary security benefactor and provide a U.S. company with a piece of the economic pie.<sup>40</sup> This indicates that the ROK may have a better shot at winning deals in those countries that enjoy similar strategic relationships with the United States such as Saudi Arabia. This is particularly important for the ROK because its major competitors have a more global reach and can offer greater security or other "carrots" while South Korea is considered a "middle power" in global terms.

At the same time, however, it leaves South Korea vulnerable to any disruption in the U.S.-ROK nuclear relationship. In April, South Korea skirted but didn't eliminate this threat when it agreed to a two-year extension of the current bilateral civil nuclear agreement which had been set to expire in March 2014.<sup>41</sup> The countries have now two more years to try again to reach agreement on a new nuclear cooperation agreement.

The decision to extend the agreement is very important to South Korea's ability to cut export deals over the next three years. In addition, a failure to reach an agreement could have had major implications for both the South Korean and U.S. nuclear industries: South Korea is dependent on U.S. nuclear material and technology while many U.S. reactors are built with Korean components. An inability to reach an agreement could also have been perceived as a major blow to the alliance.

The key stumbling block in the talks has been South Korea's desire that the U.S. grant advanced consent to enrich and reprocess (pyroprocess)<sup>42</sup> "U.S. origin" nuclear fuel. U.S. law since the late 1970s has sought to discourage nuclear Nonproliferation Treaty (NPT) non-nuclear-weapon states like South Korea from engaging in such "alteration in form or content," which can produce fissile material (enriched uranium or plutonium) that can be used either in nuclear weapons or civil nuclear fuel.

Leaving aside the domestic justifications ROK mentioned for reprocessing and enrichment,<sup>43</sup> one factor some South Korean technical specialists offer for the program is their belief that if the country adopted pyroprocessing for handling its own nuclear fuel it could then supply the reprocessing service to other countries, bolstering its reactor exports or at least enabling KEPCO to avoid the deep discounting that it was forced to offer in the UAE. Such a service, however, is unlikely to be viewed by ROK politicians as politically viable. It is Seoul's difficulties in finding appropriate locations to store or dispose of its own spent fuel which have fueled some of the ROK's interest in pyroprocessing. This political opposition is likely to be even higher in highly nationalist South Korea when it comes to accepting foreign spent fuel for reprocessing. And the service is only likely to prove attractive to other countries, however, if South Korea was willing to accept the high-level waste that would remain after pyroprocessing—a political non-starter in the ROK.<sup>44</sup>

Some ROK officials are also interested in enrichment as a nuclear export component to reap both direct profits from selling enrichment services and perceived additional profits from being able to offer more of a "full-service" package when it sells nuclear reactors.<sup>45</sup> Notwithstanding whatever domestic benefits Korea would reap from such an enrichment capability, South Korean investments in a domestic nuclear enrichment capability make little commercial sense. South Korea would likely find it difficult to compete with established enrichment suppliers who can add additional centrifuges at a much lower cost than building whole new facilities with indigenous ROK technology (Japan has struggled for years to build a domestic enrichment capacity). Nor have the existing suppliers expressed a willingness to transfer technologies to the ROK, even if they could maintain control. In addition, outside of some former Soviet clients who initially had little choice but to buy all front-end services bundled together (uranium mining, conversion, enrichment, and fuel fabrication), utilities prefer to strike separate deals for each service in order to obtain the best price. Not to mention the global enrichment market is a much smaller market in any case than the nuclear reactor market.<sup>46</sup>

While the extension decision does not solve the fundamental disagreements between the two countries on pyroprocessing and enrichment, it does buy time. Negotiations are underway, yet, even under a successful negotiation of a new



agreement, South Korea is still likely to chafe at some elements of U.S. involvement. In particular, the U.S. government is still likely to have a stronger say over ROK nuclear power plant exports than some ROK proponents of “nuclear sovereignty” may like.

KEPCO formed a consortium with Westinghouse and its Japanese partner Toshiba Power Systems because there are technologies that South Korea has not mastered and some technologies that are patented by those companies. The inclusion of U.S. components and technology in the plants and the fact that commercial-scale light-water reactors (i.e., APR-1400) Korea plans to exports are based on a Westinghouse design means that U.S. approval is required for such re-export under sections 123 and 131 of the Atomic Energy Act.<sup>47</sup> In addition, Westinghouse would likely need to seek Part 810 Authorization (named after the relevant section of the U.S. code) from the U.S. Department of Energy and other U.S. agencies before it and its employees can conduct nuclear-related business abroad.

The re-export of major U.S.-origin nuclear reactor components may also require the ratification of a nuclear cooperation agreement between the U.S. and the importing country. Such a requirement may prove a challenge, at least with regard to new nuclear aspirants, until the U.S. decides whether to include obligations to forgo enrichment and reprocessing in future nuclear cooperation agreements. It would also prove problematic for ROK future nuclear export if the U.S.-ROK cooperation agreement was to expire. Any uncertainty and potential delay as a result of an expired nuclear cooperation agreement would undoubtedly be a major source of concern to future Korean customers.

## CONCLUSIONS

Analyzing the reasons that the UAE has chosen South Korea as a supplier for the first four nuclear units highlights several advantages the ROK enjoys. First, South Korea has developed a distinct competitive advantage in terms of low cost, high credibility, and high performance. Second, South Korea sacrificed some of its potential profit margin to pass on its low costs to the customer and make the deal happen. In addition, it has benefited from strong political support from its government and president, and the deal included attractive financing. Third, South Korea provided U.S. technology at a low cost and closely cooperated with Westinghouse, preventing any rupture in the UAE’s relations with its key security benefactor.

So far, South Korea has signed nuclear cooperation agreements with 28 states.<sup>48</sup> But based on South Korea’s competitive advantages, it is fair to conclude that its most likely prospects, with the lowest risk factors, are in the Middle East—with lesser possibilities in Southeast Asia, South Africa, and even the United States (if it secures U.S. license approval for the APR-1400).

As the UAE experience shows, the Middle East looms as a particularly attractive market for South Korea. Like the UAE, several other countries in the region are faced with growing electricity demand and want to limit the potential economic and environmental costs of using fossil fuel for power generation, and are engaged in, or seriously considering, the development of civil nuclear power. In the Middle East, the main nuclear energy program after the UAE's will be Saudi Arabia, with plans to generate 17.6 gigawatt of power progressively by 2032. In December 2011, the Saudi government announced it would invest more than \$100 billion in the construction of sixteen nuclear power plants.<sup>49</sup> Even if only some of these investments materialize, Riyadh is clearly looking at an ambitious and diverse program where financing will not be a decisive factor and is a country where U.S. ties could prove helpful.

In addition, the ROK has proven experience and prominence in running and operating mega projects in this region, especially in the energy sector. Korean construction companies have played a leading role in new infrastructure—including quality assurance, desalination and grid upgrades—in many Middle Eastern states. Indeed, in 2012 South Korean firms dominated six of the top ten EPC Middle Eastern oil, gas, and petrochemicals contracts, and Doosan is leading numerous thermal water desalination projects in the region.<sup>50</sup> The fact that South Korea understands and operates successfully in Middle Eastern cultures is a great asset and much appreciated by most governments in the region. This could work to South Korea's advantage in securing future nuclear deals.

The experience South Korea will gain from adapting its APR-1400 to the specific security and geographic characteristics of the UAE,<sup>51</sup> as well as providing training, quality assurance and grid upgrade support, will provide South Korea with another competitive advantage over potential competitors. This will further strengthen South Korea's existing advantages such as low cost, high credibility, high performance, strong political backing, and attractive financing.

To be sure, financing, political relationships, and other factors mean that South Korean sales in the Middle East are far from a sure thing. Recently, Russia won another contract in the Middle East to construct two nuclear reactors in Jordan. Russia agreed to take on 49 percent of the plants' \$10 billion construction and operation costs while financial negotiations, possibly under the BOO model, are still taking place. Similarly, Turkey chose a Japanese/French team to build a \$22 billion, 4,800 megawatt, reactor site .

If and when it does win such Middle Eastern contracts, however, South Korea may reap benefits beyond the nuclear sector. Even though the UAE deal came with a very small profit margin, South Korean firms won a host of other deals as a direct or indirect result of the main agreement. Trade between the two countries grew 24 percent to \$22 billion in 2011, with UAE exports to Korea

rising by 21.2 percent in 2011 and Korean exports to the UAE growing by 32.4 percent.<sup>52</sup> Another benefit the ROK secured as a result of the nuclear deal is a more stable supply of oil and gas. For example, the two countries agreed to store six million barrels of oil from Abu Dhabi in Korea and to enable Korea to use it in emergency situations. South Korea was also able to significantly increase (from 5 to 15 percent) of the ratio of its oil and gas imports secured through development and production by Korean firms.<sup>53</sup> It is easy to envision similar benefits from other Middle Eastern gas and oil producers in the event that South Korea wins nuclear bids in these countries.

## RECOMMENDATIONS

First, reaching agreement on a long-term nuclear cooperation agreement with the U.S. is crucial for future ROK nuclear exports. Seoul should use the two-year grace period granted by the extension to carefully weigh its strategic interests. Any uncertainty in the future and potential for delay related to the status of the 123 agreement would undoubtedly be a major source of concern for future customers. On the other hand, focusing on particular technologies such as enrichment or pyroprocessing should be seen as less important than finding a “win-win” solution where the two countries can work together to address Seoul’s core concerns: short- and medium-term storage for spent fuel, sufficient fuel supplies for South Korea’s nuclear fleet, and enhancing South Korea’s nuclear export potential. In particular, the ROK and U.S. should continue to build on recent initial discussions on how the U.S. can support future ROK nuclear exports.<sup>54</sup>

Second, instead of emphasizing enrichment and pyroprocessing as attractive options for future customers, South Korea should strengthen its competitive advantages. South Korea will be better off expanding into using nuclear energy for desalination, as well as offering training and maintaining qualified and experience engineers, managers, technicians and sales specialists. It could invest in the construction of additional centrifuge capacity at existing enrichment plants in return for guaranteed output.

Third, to minimize Korean reliance on the U.S., the ROK should consider promoting Small Modular Reactors and KAERI’s “SMART” small nuclear reactor for export to small countries: smaller reactors that are cheaper, easier to manage and more adaptable to weak transmission networks and, therefore, better address the needs of many newer nuclear clients. Additionally, the SMART reactor design is not based on American technology, and it was certified by the Korea Institute for Nuclear Safety (KINS) in July 2012.<sup>55</sup> This reactor would allow countries with a limited electricity network to access nuclear energy and could be particularly attractive to some countries in the Middle East due to its advantages in thermal heating, desalination, and lack of U.S.-origin technology.

Fourth, Korea should concentrate on countries that can afford nuclear energy, especially those in the Middle East that can provide the ROK with greater energy security. So far, South Korea has been targeting emerging economies that have limited financing capacity, and that have made supplier-provided project financing a key criterion; however, a more viable scheme for Korea would be to offer financing through export-import banks. In the long run, a market reform of domestic electricity tariffs in the ROK (that is ending substantial domestic subsidies to industry)<sup>56</sup> would be helpful to support KEPCO's financial capacity for overseas tenders and permit it to offer to take equity shares in future nuclear export tenders and thus reinforce the financial position of the Korean consortium.

Last, while it is so far unclear whether the safety scandals South Korea experienced last year will hamper its efforts to sell nuclear technology globally, quick and decisive action will be important to ensure that it does not damage the ROK's image as a leading nation in nuclear quality and safety.

Should Seoul follow these recommendations, South Korea has the opportunity to make its nuclear reactor exports to the UAE the first of many.

## ENDNOTES

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- <sup>11</sup> This indirect support manifested in three aspects. The U.S. could have blocked the Korean bid as the Korean nuclear technology is still partly based on American

- technology and needs to comply with U.S. nuclear technology export control laws but chose not to do so. Also, it seems the U.S. communicated to the UAE its preference for an international tender (as opposed to an over-the-counter agreement) which favored the Korean bid. Last, the U.S. might have directly sought to support the Korean bid as a strategic choice. See Michel Berthélemy and François Lévêque, “Korea nuclear exports: Why did the Koreans win the UAE tender?,” April 2010, CERNA Working paper 2011-04, [http://hal-ensmp.archives-ouvertes.fr/docs/00/58/53/16/PDF/Korea\\_CernaWP\\_version.pdf](http://hal-ensmp.archives-ouvertes.fr/docs/00/58/53/16/PDF/Korea_CernaWP_version.pdf).
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# DECISION TIME: U.S.-SOUTH KOREA PEACEFUL NUCLEAR COOPERATION

Fred McGoldrick and Duyeon Kim

## ABSTRACT

Washington and Seoul are negotiating the replacement of their 1974 civil nuclear cooperation agreement that expires in March 2014. Section 123 of the U.S. Atomic Energy Act (AEA) requires exports of U.S. nuclear material and equipment be made pursuant to a peaceful nuclear cooperation agreement, and that cooperating partners agree to stringent nonproliferation conditions as a condition of U.S. supply. The AEA also requires a proposed agreement lie before Congress for ninety days of continuous session before it may enter into effect. Given the Congressional calendar, an agreement realistically should be submitted to Congress by spring or early summer of this year. The clock is ticking, and the negotiators are stuck on two contentious issues: South Korean demands for U.S. approval to 1) enrich any natural uranium supplied by the U.S., and 2) reprocess (or in the case of South Korea, pyroprocess) used fuel produced from nuclear material covered by the agreement and reuse the recovered nuclear material in its peaceful nuclear power reactors. Since enrichment and reprocessing (or pyroprocessing) can yield both fuel for peaceful nuclear energy and material for nuclear weapons, the U.S. strongly opposes the spread of these technologies, particularly in areas of proliferation concern and instability such as the Korean Peninsula. Concerns are mounting that the allies may not be able to resolve their differences before the present agreement expires. How the two sides deal with these issues could have important implications not only for their nuclear trade but also for the U.S.-ROK-alliance, future U.S. peaceful nuclear cooperation agreements, the global nonproliferation regime, and the North Korean nuclear threat.

**Key words:** *economic reform, Special Economic Zones (SEZs), Kim Jong-un, June 28 measures, labor and minerals*

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## INTRODUCTION AND BACKGROUND

The U.S. and ROK nuclear industries have been interdependent since Westinghouse constructed South Korea's first nuclear power plant that began operations in 1978. Since then, U.S. firms continued to remain closely involved in Korea's nuclear industry. At the same time, Korean companies like Doosan supply a variety of goods to U.S. nuclear power plants and companies constructing plants overseas. Westinghouse, which is now part of the Japanese firm Toshiba, is involved in the South Korean contract for building four reactors in the United Arab Emirates.

U.S. exports of nuclear material and equipment to South Korea are presently subject to the U.S.-Republic of Korea agreement for peaceful nuclear cooperation. The agreement contains a number of nonproliferation assurances by the ROK. It, however, does not contain reciprocal nonproliferation controls since South Korea was not a nuclear exporter and did not supply nuclear equipment or technology to the United States when the pact was concluded in 1974. The South Korean nonproliferation assurances to the United States include a guarantee that the ROK will not use materials and items subject to the agreement for atomic weapons, for research or development of atomic weapons, or for any military purposes, and International Atomic Energy Agency (IAEA) safeguards will be applied to the materials subject to the agreement. The 1974 agreement also provides that the reprocessing or alteration in form or content of US-supplied materials may be performed only in facilities acceptable to both parties upon their joint determination that IAEA safeguards may effectively be applied to such nuclear operations. This provision constitutes a so-called "prior consent right"<sup>1</sup> to reprocessing. The agreement also contains a U.S. right to approve the retransfer of any items subject to the agreement to a third country. It does not provide the U.S. with the right to approve enrichment since the purpose of the agreement was to supply already enriched uranium.

The allies must conclude a new agreement before it expires in March 2014 in order to prevent a halt to U.S. nuclear exports to South Korea. Any new agreement must contain a range of new nonproliferation assurances and guarantees contained in the 1978 Nuclear Non-Proliferation Act (NNPA) that amended the U.S. Atomic Energy Act (AEA).<sup>2</sup> The amendments to the AEA are aimed at significantly expanding the nonproliferation guarantees, assurances, and rights that nuclear trade partners must give to the United States in all future agreements. These include peaceful, non-explosive use assurances, guarantees that IAEA safeguards will apply to all the peaceful nuclear activities of the recipient state ("comprehensive safeguards"), the perpetuity of those safeguards even if the agreement terminates, and assurances of adequate physical protection. Also included is a range of U.S. rights to approve sensitive nuclear activities such as enrichment, the reprocessing or alteration in form of content of used nuclear fuel, and storage of weapon-usable materials—plutonium and highly enriched uranium (HEU).

Unlike the existing agreement, a new U.S.-ROK agreement will contain reciprocal nonproliferation guarantees, thus removing the one-sidedness of the current agreement. On the other hand, the conditions required by the AEA for new agreements go considerably beyond those contained in the current bilateral agreement. For example, the existing pact does not contain a U.S. right of prior approval to enrichment or storage of plutonium or highly-enriched uranium (HEU). In addition, the requirement for prior consent to reprocessing and alteration in form or content is quite far-ranging in scope. The AEA requires that these prior consent rights apply not only to U.S.-supplied nuclear material but also to non-U.S.-supplied material irradiated in a U.S.-origin reactor. Thus the prior U.S. consent rights required by the AEA are much broader and more intrusive than that of the current U.S.-ROK peaceful nuclear cooperation.

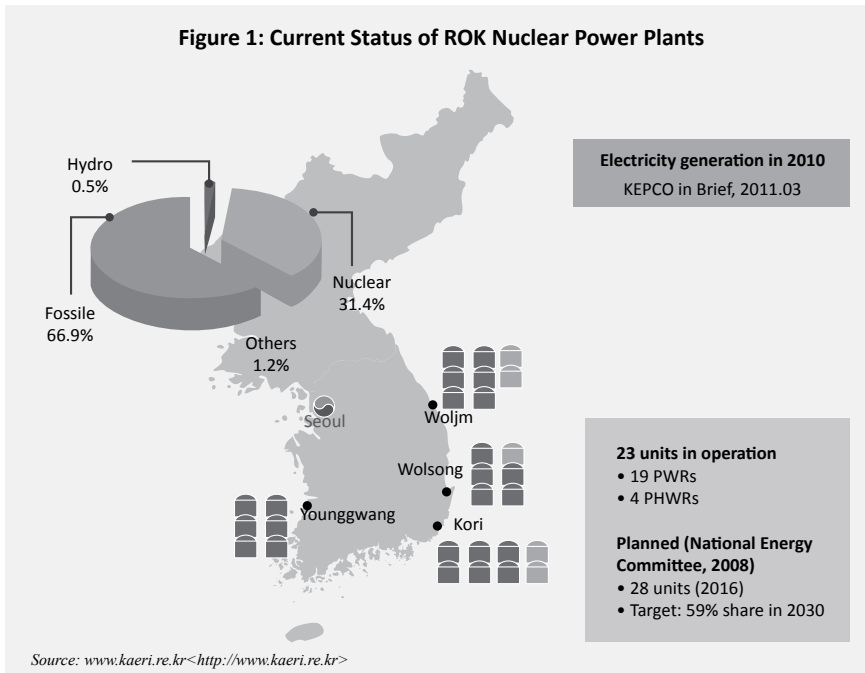
### ISSUES FOR A NEW U.S.-ROK PEACEFUL NUCLEAR COOPERATION AGREEMENT

The two governments agree on most of the nonproliferation conditions required by the AEA. However, they have been unable to resolve their differences over U.S. exercise of two consent rights mandated by the AEA. In particular, the ROK appears to want the U.S. to give it a one-time consent to enrich U.S.-origin uranium and pyroprocess used nuclear fuel subject to the new agreement for the life of the agreement. But the U.S. has been resistant, given its long-standing opposition to the spread of enrichment and reprocessing technology. U.S. views on these technologies are shaped by concerns that they can be used to produce nuclear weapons as well as to manufacture fuel for peaceful nuclear reactors. In addition, safeguarding reprocessing plants to detect the diversion of plutonium for nuclear weapons is deemed both costly and technically challenging.

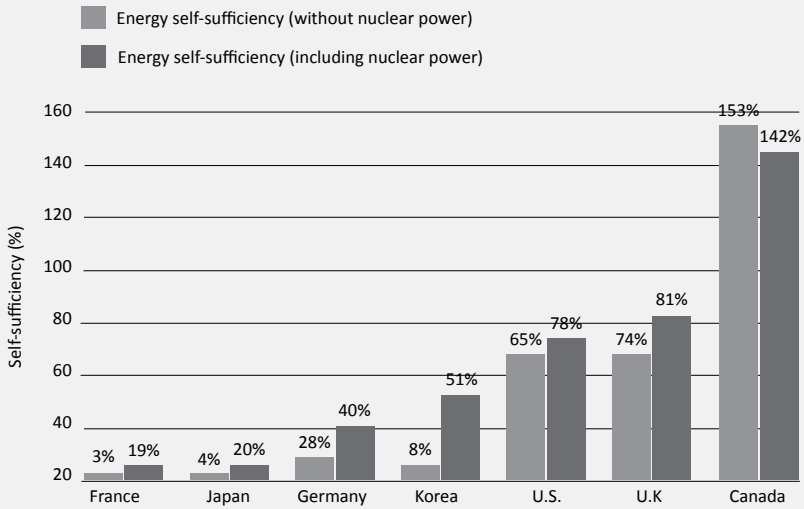
As a result the U.S., as a matter of policy, does not export either technology. It has given consent to only a few of its cooperating partners to enrich US-supplied uranium but only up to 20 percent in the isotope 235. Enrichment beyond that level greatly accelerates the time it would take a country produce weapons-grade uranium (around 90 percent for U-235). The U.S. has peaceful nuclear cooperation agreements with 24 states, Taiwan, and two international organizations, but has limited its approval to the European Atomic Energy Community (EURATOM), Japan, and more recently, India. In each of these three cases the U.S. has given so-called “programmatic consent,” i.e., advance consent to reprocessing and the use of plutonium in the peaceful nuclear programs of these countries under specified nonproliferation conditions for the life of the agreement. The U.S. consent to sensitive nuclear activities in these three cooperating partners is based on the rationale that those states possess major civil nuclear programs, already have a reprocessing capability, are adhering to their nonproliferation obligations, and are important strategic partners of the United States.

Even though the ROK has a large civil nuclear program, adheres to its nonproliferation commitments, and is a close U.S. ally, Washington has been unwilling to grant similar approval to any enrichment or reprocessing of U.S.-supplied material to South Korea. Although the U.S. is not concerned about Seoul using such facilities for nuclear weapons, it is apprehensive about the presence of such capabilities in areas of instability or serious proliferation concern such as the Korean Peninsula where Pyongyang continues to test missiles and nuclear weapons in defiance of UN Security Council resolutions. Washington is concerned that U.S. consent to these sensitive activities in South Korea would make it extremely difficult to persuade Pyongyang to dismantle its enrichment or reprocessing programs and damage its efforts to prevent their spread to other countries. Moreover, some in Congress are seeking to enact new legislation that would pressure all potential nuclear trade partners to forswear enrichment and reprocessing capabilities – the so-called “gold standard,” an obligation that only the United Arab Emirates has accepted in its agreement with the United States.

The view from Seoul is quite different. South Korea sees its civil nuclear power program as comparable to those in EURATOM, India, and Japan. Its 23 nuclear reactors generate roughly 35 percent of the country’s electricity, and Seoul plans to build an additional 16 reactors by 2030 to meet its energy needs (see Figures 1 and 2). Nuclear power has proven to be the cheapest source of energy for Korea (see Figure 3). The country has also emerged as a major nuclear exporter that desires the ability to provide a full package of nuclear energy services in addition to reactors.

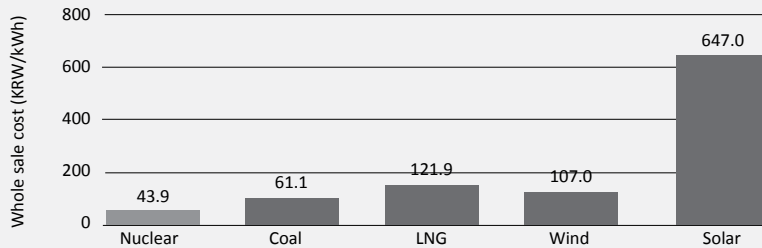


**Figure 2: Korea's Primary Energy Supply**



\* IEA, Energy balance of OECD countries 2011  
 Source: [www.kaeri.re.kr](http://www.kaeri.re.kr)<<http://www.kaeri.re.kr>>

**Figure 3: Whole Sale Electricity Cost in Korea**



Source: [www.kosis.kr](http://www.kosis.kr) (Feb. 2010) [www.kaeri.re.kr](http://www.kaeri.re.kr)<<http://www.kaeri.re.kr>>

Moreover, South Korea is a responsible member of the international community, and argues that it has the *right* to enrich and pyroprocess based on Article IV of the Nuclear Non-Proliferation Treaty (NPT) to which the ROK is a Party, which states:

“Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production, and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty.”

The ROK is not only compliant with its nonproliferation obligations under the NPT but is also a party to a number of nonproliferation treaties, conventions and arrangements, including the Proliferation Security Initiative, the Global Initiative to Combat Nuclear Terrorism, and the Nuclear Suppliers Group. It has also ratified the Additional Protocol to its safeguards agreement with the IAEA giving the Agency more information about, and greater access to, Korean nuclear activities. Seoul also takes pride in the leadership role it has played in hosting the 2012 Nuclear Security Summit. In addition, Seoul is a strong ally of the United States, a factor of increasing strategic importance as the North Korean nuclear threat grows and as U.S. policy “pivots” to Asia to counter-balance the rise of China. Given these credentials, Seoul takes the position that it should benefit from the same kind of treatment in the new U.S.-ROK agreement enjoyed by EURATOM, Japan, and India in their nuclear cooperation with the United States.

### ***The Enrichment Debate***

South Korea does not currently possess an enrichment capacity and argues that it needs to be able to enrich uranium to: 1) enhance its energy security by reducing its reliance on foreign uranium enrichment suppliers that costs about \$300 million a year,<sup>3</sup> and 2) secure its competitiveness in overseas reactor sales. The basis for the latter argument is that buyers are increasingly demanding fuel assurances with their purchase of reactors. Thus, having an enrichment capability would allow Seoul to compete more effectively with Russia’s Rosatom and France’s Areva that currently provide a package of fuel cycle services.

The U.S. response is that South Korea has no reason to be concerned about security of supply because: 1) there are several enrichment service suppliers that South Korea may call upon, 2) the international market for enrichment services has worked smoothly over the last five decades, and 3) consumers have suffered few disruptions of supply and those were for nonproliferation reasons. Thus, the U.S. deems the security of supply argument as weak. In addition, many U.S. experts believe South Korean officials may be overestimating the potential value of enrichment in selling reactors, citing market economics.<sup>4</sup> They argue that Seoul has more efficient alternatives to a national enrichment plant to meet its domestic needs for enrichment services and to promote reactor sales by providing ancillary enrichment services. The ROK could partner with an existing enrichment supplier, such as URENCO or the U.S. Enrichment Corporation (USEC), to market its reactors. Seoul would, of course, not have access to the technology. Such arrangements not only increase South Korea’s security of supply, but could be employed to supplement Korean reactor sales.

Moreover, the Korean demand for U.S. consent to enrich U.S.-supplied natural uranium supplied has little practical significance. The United States is not a major

producer or exporter of natural uranium and the international market has a fairly large number of low-cost uranium producers. South Korea can and does import natural uranium from a number of different countries, including Australia and Canada. It may enrich these materials without Washington's approval. Although South Korea converts much of this uranium in the U.S., it does not need to since it can resort to other conversion suppliers, which therefore would not attract U.S. consent rights to enrichment. Thus, South Korea would not need U.S. consent to enrich uranium. However, it appears to be seeking U.S. consent to enrichment since it would signal U.S. political acknowledgment of a South Korean enrichment capability as acceptable from a nonproliferation point of view.

U.S. resistance to giving this political endorsement is not the only obstacle that South Korea faces in obtaining a domestic enrichment capability. Seoul would either 1) have to undertake the formidable and costly task of building its own enrichment plant or 2) would have to find a country willing to transfer this technology to South Korea for either a national or multinational facility that could take up to fifteen years to construct. However, there is a strong consensus among enrichment technology holders<sup>5</sup> on the need to halt the further spread of national enrichment and reprocessing capabilities. The only transfers of this technology in recent years have been to countries that already possess an enrichment capability. The Nuclear Suppliers Group has adopted a strict new set of guidelines on the transfer of enrichment technology. For a variety of reasons, the few enrichment technology holders that exist – France, Russia, China, the U.S., and URENCO (a tripartite organization of the Netherlands, Germany and the UK) – are unlikely to be willing to provide such technology to South Korea, particularly in the face of U.S. opposition.

Moreover, the fact that the U.S. is not prepared at the present time to grant consent to Seoul to enrich uranium does not rule out the possibility that Washington would not approve it in the future if nonproliferation and economic circumstances were favorable to such a development.

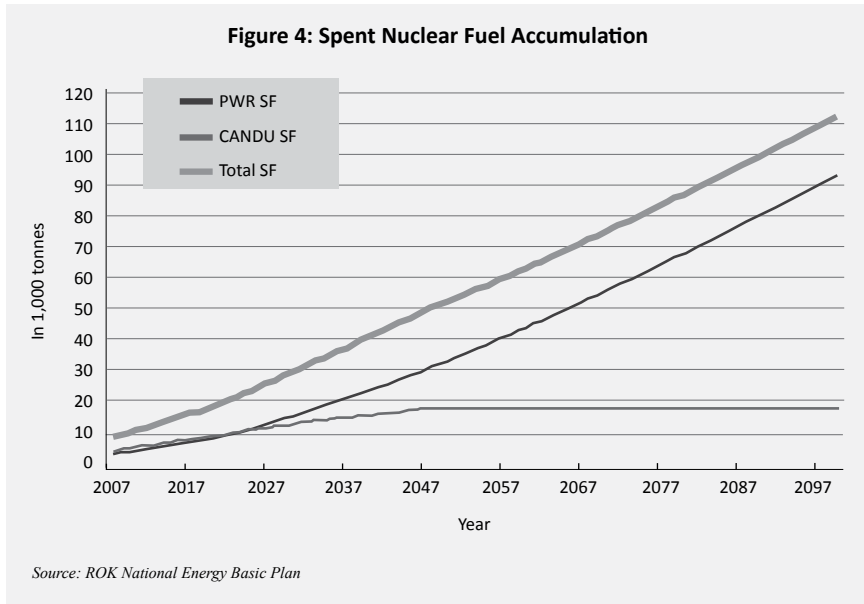
For reasons mentioned above, U.S. refusal to approve South Korean enrichment should not be a deal-breaker.

### ***The Pyroprocessing Debate***

Resolving differences over pyroprocessing, however, may prove far more difficult. Like other reprocessing methods, pyroprocessing recovers plutonium, although in a mixture, for use in new nuclear fuel and diminishes the volume of nuclear waste that would need to be disposed.

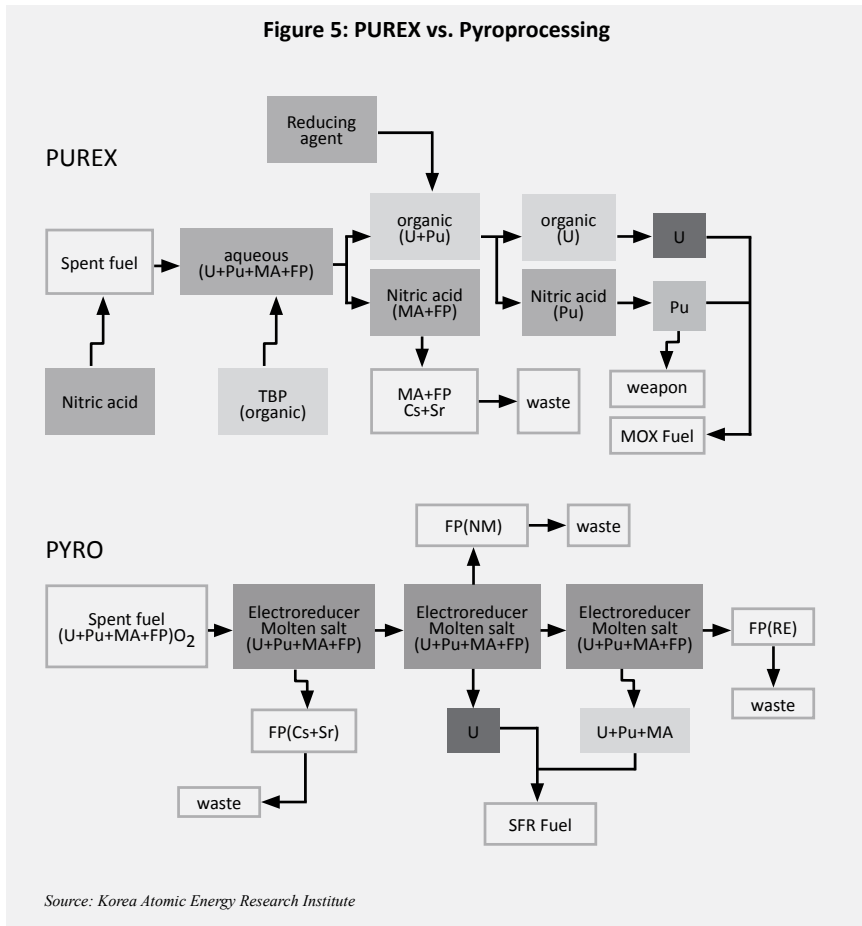
Korean scientists argue that while pyroprocessing is in the experimental study phase and untested on a production or commercial scale, it is still critical to managing Korea's increasingly urgent spent fuel management problems. Their reasons are: 1) the absence of an adequate intermediate storage facility, 2) on-site storage will reach

saturation in 2016, 3) the absence of an adequate geological repository to dispose used fuel, requiring about ten repositories the size of Finland's Olkiluoto, 4) the absence of an adequate measure to ensure the long-term safety of a repository over millions of years, and 5) it is a "bridge too far yet" to obtain support from the public and stakeholders for waste disposal.<sup>6</sup> Korea has forecast about 1,100 tons of spent fuel will be generated annually if and when all planned reactors are constructed (see Figure 4).<sup>7</sup>



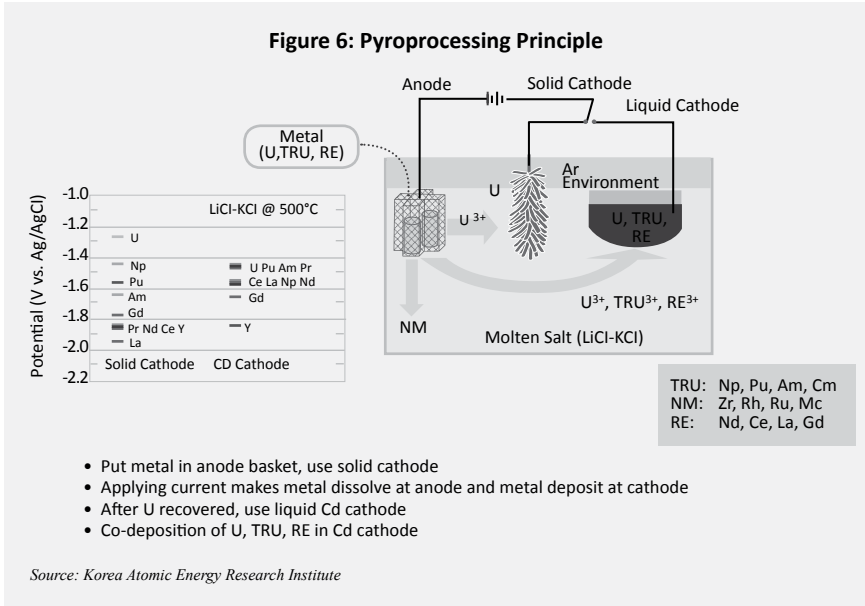
South Korea argues that pyroprocessing is more proliferation-resistant than classic PUREX reprocessing used by France, India, Japan and Russia that separates pure plutonium fully from the highly radioactive nuclear waste, thus removing the key barrier to using the plutonium for nuclear weapons either by a state diverting the material or by a terrorist stealing the plutonium. By contrast, pyroprocessing yields a material that contains some radioactive fission products that makes it less suitable for nuclear weapons. In other words, plutonium is left in a reactor-usable mixture with uranium and other transuranic elements<sup>8</sup> (see Figure 5). Scientists at the Korea Atomic Energy Research Institute (KAERI) argue that the type of pyroprocessing technology currently being developed with the U.S. under a ten-year joint R&D study<sup>9</sup> is proliferation-resistant and cannot separate plutonium, unlike both PUREX and even the existing pyroprocessing technologies (see Figure 6).<sup>10</sup> They also believe it could reduce the volume and radioactivity of spent fuels while potentially allowing the used fuel to be recycled for further use.<sup>11</sup> South Korean scientists are thus reluctant to classify what they call a new method of pyroprocessing as reprocessing.





South Korea also believes that the US has sent conflicting signals on the issue of whether pyroprocessing is reprocessing, and whether it offers effective proliferation-resistance compared to traditional PUREX reprocessing. The two sides signed an R&D agreement on pyroprocessing in 2002 and South Korean scientists have participated in such joint experiments at U.S. laboratories.<sup>12</sup> Some officials during the Bush Administration took the position that pyroprocessing is not as vulnerable to diversion to a nuclear weapon as conventional PUREX reprocessing. However, the view that pyroprocessing is more proliferation-resistant than PUREX was not shared by all in the U.S. government. The U.S. Department of Energy (DOE) assessed a range of “proliferation resistant” technologies including pyroprocessing as part of its Global Nuclear Energy Partnership (GNEP) initiated by the George W. Bush Administration. In 2008, DOE released a draft Nonproliferation Impact Assessment (NPIA) of the GNEP Programmatic Alternatives that reached the preliminary conclusion that the candidate reprocessing technologies studied, including pyroprocessing, suggest

only modest improvements in reducing proliferation risk over existing PUREX technologies, and these would reduce the risks that non-state actors, but not states, would be able to gain access to the plutonium.



As one U.S. official put it in 2011, Washington concluded that pyroprocessing poses proliferation concerns because its key elements – electro-reduction and electro-refining – “have moved to the point that the product is dangerous from a proliferation point of view. So, for that reason, pyroprocessing is reprocessing, and that’s part of the problem. [DOE] states frankly and positively that pyroprocessing is reprocessing. Period. Full stop. [DOE] did not take that position five years ago when we started down the road of cooperation on pyroprocessing. Then the product was not weapons usable.”<sup>13</sup> Many American experts also believe pyroprocessing poses safeguards challenges and lacks effective mechanisms to detect the diversion of nuclear material.

The two countries also have different perspectives on their current ten-year joint feasibility study, as well as the economic feasibility and proliferation resistance of pyroprocessing. South Koreans believe that the assumption underlying the study was that if it produces economically efficient and proliferation-resistant pyroprocessing technology that deals with both the U.S.’ and South Korea’s spent fuel problems, Seoul would be able to proceed to put in place a pyroprocessing capability at the commercial level. The Americans did not make any such assumption about future pyroprocessing. There are also differing views on what constitutes “economically feasible” pyroprocessing technology. Korean

scientists argue that pyroprocessing is one of the most economic ways to manage the spent fuel problem, while most U.S. experts believe that the once-through fuel cycle is less expensive than any kind of reprocessing and should provide adequate security of fuel supply for at least one hundred years, perhaps more.

Since Washington regards pyroprocessing as reprocessing, the U.S. has been unwilling to justify an exception for South Korea to its long-standing policy of preventing the further spread of this sensitive nuclear technology. Washington believes that exempting Seoul from this policy would be controversial domestically, set a poor nonproliferation precedent, and spark regional and global nonproliferation concerns.

## NORTH KOREA AND STRATEGIC CONTEXT

The North Korean nuclear threat hovers over the negotiation of the U.S.-ROK civil nuclear cooperation agreement. In 1992 the two Koreas signed a Joint Declaration in which they agreed not to possess either enrichment or reprocessing capabilities. Since then, North Korea has operated its reprocessing facility and constructed one or more enrichment facilities. It has also developed and tested nuclear weapons and missiles in defiance of UN Security Council resolutions. Pyongyang claims the 1992 Joint Statement is null.<sup>14</sup>

One could argue that North Korean actions have rendered the 1991 Joint Declaration meaningless and that Seoul should no longer be bound by it. However, Seoul has exercised restraint on this issue despite calls from within and outside the South Korean government to scrap the 1992 pact in the aftermath of continued North Korean provocations. Moreover, the U.S. clearly maintains that the existence of any reprocessing plant in the ROK would be inconsistent with the commitments Seoul made in the 1992 Joint Declaration.<sup>15</sup> In addition, a Six Party Talks agreement struck in September 2005 states that, “The 1992 Joint Declaration of the Denuclearization of the Korean Peninsula should be observed and implemented.”<sup>16</sup>

Despite U.S. efforts to strike a sustainable deal with North Korea on dismantling its nuclear programs in return for a range of economic and security guarantees, Pyongyang continues to provoke the South, seems committed to continuing nuclear and missile tests in defiance of UN Security Council Resolutions, and now threatens that the U.S. mainland is “well within” the range of its nuclear weapons. North Korea also regards itself as a nuclear weapons state, and prospects for the DPRK ever abandoning its nuclear programs are increasingly doubtful.

The DPRK’s nuclear weapons program has been and will continue to be a major source of instability on the Korean Peninsula until it is resolved. The U.S.

believes that persuading North Korea to dismantle its nuclear programs would be considerably more challenging if the South were to move toward acquiring enrichment or reprocessing capabilities.

## THE U.S. CONGRESS: A POTENTIAL WILD CARD

Some in Congress are taking a very tough stance on preventing the spread of nuclear weapons that may take the form of demanding future agreements contain a legal ban on enrichment and reprocessing by U.S. nuclear trade partners. In 2009 the United States concluded a peaceful nuclear cooperation agreement with the United Arab Emirates (UAE) in which the UAE agreed to forswear the acquisition of enrichment and reprocessing capabilities, a condition that became known as the “gold standard.” There has been an on-going debate in Washington on whether the U.S. should apply this gold standard to all future U.S. peaceful nuclear cooperation agreements. However, we understand that the U.S. is not pressing the ROK to renounce its rights to enrichment and reprocessing since Seoul has an advanced nuclear program, is compliant with its nonproliferation obligations, and is a close strategic ally. South Korea in any event seems highly unlikely to renounce what it regards as its sovereign right to such technologies as a Party to the NPT.

However, in 2011 the House Foreign Affairs Committee (HFAC) unanimously adopted legislation (H.R.1280) that, among other things, proposes to include the gold standard in all new agreements. In addition, the proposed legislation would change the existing congressional review process by requiring that a new peaceful nuclear cooperation agreement could become effective only if both Houses of Congress cast an affirmative vote in its favor. However, the HFAC bill allows an exception if a new agreement contains the gold standard. New agreements that meet this condition would be subject to the current congressional review procedure that allows an agreement to enter into force after 90 days of continuous session unless Congress enacts a joint resolution of disapproval. The administration has raised strong objections<sup>17</sup> to H.R.1280, which died without a vote on the House floor. It is unclear whether an identical or similar bill will be introduced during this current session of Congress. Nevertheless, the views reflected in this bill may be important to the outcome of any congressional review of the new civil nuclear pact.

## OPTIONS

Given all these considerations, it is no surprise that Seoul and Washington have found it challenging to reach a mutual understanding on U.S. approval of South Korea enrichment and/or pyroprocessing. The question then is what options are realistically available to the two parties to resolve their differences given the fast-approaching expiration of the existing agreement.

## **Enrichment**

The U.S. is not likely to accommodate Korean demands for U.S. consent to enrich US-origin natural uranium. As noted above, South Korea does not need such consent since it can and already does purchase less costly natural uranium from several other countries. Moreover, Seoul would face major economic and technical obstacles if it sought to build its own enrichment capacity despite the South Korean industry's impressive nuclear skills and capability. Enrichment technology holders are also unlikely to transfer enrichment technology to South Korea. Members of the Nuclear Suppliers Group recently adopted a new set of guidelines to govern the transfer of enrichment technology. Among other things they agreed to:

- "avoid, as far as practicable, the transfer of enabling design and manufacturing technology associated with such items; and
- seek from recipients an appropriate agreement to accept sensitive enrichment equipment, and enabling technologies, or an operable enrichment facility under conditions that do not permit or enable replication of the facilities."<sup>18</sup>

This is a so-called "black-box" condition. It is intended to limit an importer's access to the technologies and prevent the replication or reverse engineering of the technology.

**Multinational, black-boxed enrichment plant.** Seoul might be quite amenable to establishing a multinational enrichment facility or a joint venture in Korea under black-box conditions. Proliferation risks could be reduced by placing any enrichment facility in South Korea under multinational or international auspices, and by implementing black-box controls. However, the U.S. has not been an enthusiastic endorser of multinational enrichment plants, and some U.S. experts doubt the effectiveness of black-boxing since it does not completely prevent the host state from acquiring information about centrifuge design and operation.<sup>19</sup> For example, centrifuges for the facility arrive in parts and are assembled on-site with operators having to understand how the centrifuges respond to variations in operating parameters. China is believed to have adopted Russian design details for its domestically made centrifuges after obtaining centrifuges from Russia on a black-box basis. In essence, some view the black box as more of a grey box.<sup>20</sup> Establishing a joint venture or multinational operation presents challenging management and operational problems that could affect the efficiency of any such operation. Finally as noted above, Seoul might find it difficult to find a technology holder to transfer such technology to South Korea even under black-box conditions. Still, the U.S. and ROK could cooperate in R&D studies on multinational approaches to the fuel cycle.

For all reasons mentioned above, the most practical and most likely outcome of the negotiations may be that Seoul would go along with Washington's refusal to grant its approval to South Korea to enrich U.S. natural uranium or to put

its stamp of approval on a South Korean enrichment capability. The fact that South Korea would have a reciprocal right with respect to any nuclear material it exports to the United States might help make this outcome more politically palatable to Seoul. South Korea would still be able to avoid any concerns about security of supply by relying on a well-functioning international market in both uranium and enrichment services. Security of supply could be further addressed by U.S. assurances that it would be prepared to give South Korea access to its national reserve of enriched uranium or support South Korean access to the IAEA nuclear fuel bank in the event of a supply disruption. Moreover, a U.S. right to consent to enrichment is not the same as a ban on enrichment and does not rule out the possibility that the Washington could give such consent at some time in the future if justified by nonproliferation and economic considerations. Finally, South Korea's joint ventures with existing enrichment suppliers could help the marketing of Korean reactors on the global market.

### ***Spent Fuel Management Options***

South Korea clearly faces a legitimate, pressing problem in managing the spent fuel from its power reactors. Its current at-reactor storage capabilities will reach their saturation point in 2016. If the ROK government cannot resolve this problem soon, some of the power reactors may have to be shut down. But Seoul has a few options.

**Pyroprocessing.** Seoul claims pyroprocessing is the best way to manage its growing quantities of spent fuel, but pyroprocessing is not a realistic way forward, at least in the short term. Even if the ten-year U.S.-Korea study due for completion in 2021 was to conclude that this technology is economically feasible and offers adequate proliferation resistance, Seoul could not build a commercial size pyroprocessing plant for at least two decades. Hence, even if the U.S. were to consent to pyroprocessing in the text of the new agreement, it would not immediately solve South Korea's urgent spent fuel problem. Still, it would be prudent for the U.S. and ROK to continue R&D on pyroprocessing as well as other potential technologies for managing South Korean spent fuel problems.

**Transfer spent fuel out of country.** One option that could provide near-term relief is to transfer some South Korean spent fuel to EURATOM for reprocessing. The ROK made informal inquiries with the U.S. about this possibility in the 1990s, but the Clinton administration quietly discouraged it. The ROK government is reportedly willing to revisit this question, and the U.S. may now be more willing to consider third country reprocessing. In 2009 the U.S. gave consent to the United Arab Emirates (UAE) to ship spent fuel subject to the U.S.-UAE agreement to EURATOM for reprocessing. However, South Korean resort to this option is not without its problems. First, while France and the UK accept foreign spent fuel for reprocessing, both countries would require that the high-

level waste as well as the recovered plutonium and uranium must be sent back to the ROK after reprocessing. Second, in granting its consent to Seoul to transfer spent fuel to EURATOM for reprocessing, the U.S. would insist on retaining prior consent rights over any further disposition of the recovered plutonium and, for nonproliferation reasons, it is highly doubtful that the U.S. would approve the retransfer of recovered plutonium from EURATOM back to South Korea. This would leave Seoul with the dilemma of what to do with the recovered plutonium. The world is awash in this material because reprocessing in EURATOM, Russia, and Japan has continued, while its use as fuel in commercial power reactors in many countries has not kept pace. Thus, Korea could not find a market for its plutonium in Europe that the U.S. would approve, and would be faced with the costly storage of this material. In addition, Seoul would find it difficult to take back its high-level waste from Europe because it has no available storage or disposal site.

A similar option would be to ship spent fuel to Russia. However, Russia takes back only used fuel produced from Russian supplied fuel. The U.S. would have prior approval rights over such transfers and it is not clear whether the U.S. would grant consent to such transfer. It is also unclear that Seoul would be politically comfortable in sending its spent fuel to Russia.

**Return of spent fuel to the U.S.** Washington could help Seoul's spent fuel problem by offering to take some of it back to the United States for storage and/or disposition. However this "cradle-to-grave" option is not realistic in the foreseeable future for several reasons. The U.S. has no national waste program of its own and no place to put the spent fuel currently stored at its own reactors. Moreover, bringing back foreign spent fuel to the United States would face formidable legal and political obstacles, and Congress would have to approve any such take-back. Still, it makes good sense for Washington to begin exploring the possibility of taking spent nuclear fuel back from countries that do not have sensitive fuel-cycle facilities.<sup>21</sup> But such a policy will not come to fruition in the foreseeable future, if ever, and therefore offers no practical solution to South Korea's immediate problems of managing its spent fuel.

**Conditional consent.** The two sides could strive to reach agreement on a conditional consent arrangement on pyroprocessing. Under this option, South Korea would not be allowed to reprocess or alter in form or content U.S. nuclear material until: 1) the joint study is completed so that South Korea would not engage in pyroprocessing for at least ten years, and 2) based on the study, both sides would conclude that pyroprocessing is economically feasible and affords adequate proliferation resistance. In addition, the U.S. would have to insist that it retain the right to determine whether South Korean pyroprocessing of U.S. nuclear material meets U.S. statutory standards. Section 131 of the AEA stipulates that prior to approving any requests for reprocessing, the Secretary of Energy must determine that the proposed consent "will not be inimical to the common defense

and security” of the United States and “will not result in a significant increase in the risk of proliferation” beyond that which exists at the time the approval is requested.<sup>22</sup> Among the factors that the Secretary of Energy and the Secretary of State must consider in making this judgment is whether or not the reprocessing or retransfer will take place under conditions that will ensure “timely warning” to the United States of any diversion well in advance of the time at which a nuclear weapon state could transform the diverted material into a nuclear explosive device.

South Korean negotiators may find it very difficult to accept any conditional consent arrangement that gives the U.S. the unilateral degree of discretion that the U.S. side believes it needs to meet its own legal requirements. Seoul would quite understandably seek greater predictability and certainty in any conditional consent arrangement, and strive to define a set of precise criteria that, if met, would allow it to proceed with some pyroprocessing, preferably on a long-term, programmatic basis for the life of the agreement, or at least proceed with some further development of the technology perhaps with the construction and operation of a pilot facility on a trial basis.

Given its statutory requirements, the U.S. will have to resist accepting any specific set of conditions that, if met, would be sufficient for U.S. consent to South Korean pyroprocessing. Rather, Washington is likely to insist on considerable leeway in deciding whether approving the ROK pyroprocessing “will not be inimical to the common defense and security” and “will not result in a significant increase in the risk of proliferation.” Among other factors that will influence such a determination are: 1) how it would affect efforts to denuclearize the North, 2) the status of the North Korean nuclear program, 3) whether it would have an adverse effect on broad US interests in preventing the spread of enrichment and reprocessing, and 4) its impact on regional and global stability.

Agreeing on language on a conditional consent basis may prove difficult for both sides, but it may be the only way forward on the pyroprocessing issue. In the meantime, South Korea will have to find some way to store its spent fuel on an interim basis.

## DASH TO THE FINISH LINE

Given the strong differences of views between the ROK and the U.S. over enrichment and reprocessing, it will be a monumental challenge to reach agreement on a text and to submit it to their respective legislatures for review and approval before the March 2014 expiration date. In the case of the United States, the AEA requires a proposed agreement lie before Congress for ninety days of continuous session before it may enter into effect. Given the Congressional calendar, this could take six or seven months. Therefore, the new agreement realistically should be submitted to Congress by spring or early summer of this year. This will be an extremely challenging schedule for the United States to meet. Once the two



sides agree to a text on an ad referendum basis, the executive branch by law must prepare extensive documentation in support of the agreement, including: 1) a nonproliferation assessment statement, 2) the secretaries of State and Energy must recommend the agreement to the president for his approval, and 3) the independent Nuclear Regulatory Commission must provide the president its views on the agreement. Then the president must approve the text for signature, and the two governments must sign the text. Only after all these steps are completed may the proposed agreement be submitted to Congress for its review. These various steps take considerable coordination and time to complete. There may simply be insufficient time to conclude the negotiations and prepare the required documentation in the coming months. The two sides are facing the real prospect that the agreement may lapse without a new agreement in place.

While the Park Geun-hye administration that took office on February 25th is expected to maintain a position similar to the Lee Myung-bak administration on the U.S.-ROK nuclear trade pact, it is unclear what exact conditions it will find acceptable. Thus, the change of administration may delay the negotiations.

Given the challenges of the calendar, the U.S. and South Korea realistically have only a few options:

**Lobby for an affirmative congressional approval.** Given the positions of the two sides, it may be difficult to reach an understanding on these issues by spring or summer of this year. However, if the two sides manage to reach agreement but not in time to meet the ninety-day legislative review period before the existing agreement expires in March 2014, the U.S. administration could lobby Congress to pass a resolution of approval so that a lapse could be avoided. However, this increases the risk that some members of Congress could seek to add conditions to the approval of the agreement that would be unacceptable to either the U.S. administration or the South Korean government. As noted, some in Congress believe the U.S. should require all future cooperating partners, including South Korea, agree to a legal commitment to abstain from acquiring any enrichment or reprocessing capability. Proponents of the gold standard might vote against any new agreement that does not contain this provision, thus risking disapproval of the new U.S.-ROK peaceful nuclear cooperation. In any event, persuading Congress to vote on the new agreement before the existing one expires would require a major lobbying effort by the administration.

**Allow the agreement to lapse for a short period.** The likelihood of a lapsed agreement currently appears greater than expected with both parties firm in their respective positions on enrichment and pyroprocessing.

The economic consequences of such a lapse are uncertain for both countries. The United Nations Commodity Trade Statistics Database (Comtrade) estimates U.S.

exports to Korea of nuclear components and fuel elements at \$818.8 million between 2001 and 2010, while large exports under licenses such as reactors and major components are estimated up to \$200 million apiece.<sup>23</sup> Korean officials have been unable to confirm or accurately track the value of U.S. imports dependent on the renewal of the US-ROK agreement. However, the \$20 billion contract for Seoul to provide reactors to the UAE would be threatened by a lapsed agreement. Roughly \$2 billion of work on the UAE Barakah plant is expected to go U.S. companies while some US components and subcomponents need to be exported to Korea for further fabrication before shipping to the UAE.<sup>24</sup>

However, the economic effects of a short-term lapse are not likely to be significant for two reasons. First, the U.S.-EURATOM agreement lapsed only for a couple of months without any significant economic or political fallout. Anticipating a lapse, U.S. companies took steps to obtain the relevant export licenses and approvals well in advance of the expiration date of the agreement and thus avoided significant disruptions in trade. American and Korean companies could do the same in the event of a likely lapse of their agreement. Second, the Atomic Energy Act requires an agreement for cooperation only for the export of nuclear material, nuclear facilities and their major components (in the case of reactors—the pressure vessel, the complete control rod system, the primary coolant pump, fuel charging, and discharging machines). The U.S. does not manufacture the last item, and all other nuclear components and substances may be exported without an agreement, provided the ROK gives the U.S. appropriate nonproliferation assurances. Under the AEA and existing Department of Energy regulations, U.S. technology may be exported outside an agreement for cooperation. The export of any nuclear technology to a specified list of countries requires specific authorization of the Secretary of Energy. However, South Korea is not on that list, and most technologies may be exported under general license to the ROK. Only sensitive nuclear technology (SNT) to the ROK would require a DOE approval, and the US as a matter of policy does not export SNT.<sup>25</sup> Hence some nuclear trade may legally continue in the absence of an agreement. However, it is not clear that the US would be willing to issue licenses or approvals in the absence of an agreement.

However, a lengthy lapse could have adverse economic and political consequences. The South Korean industry could lose confidence in the U.S. as a reliable supplier and turn to other partners. Politically, a lengthy lapse would show that the two close allies cannot agree on the important subject of their nuclear cooperation. The U.S.-ROK alliance has never been stronger as it was during the Barack Obama-Lee Myung-bak administrations. However, both presidents postponed settling some of the most complex and sensitive bilateral issues for their successors. It is now up to Presidents Obama and Park Geun-hye to settle other outstanding issues without straining the alliance. Top security issues include the transfer of OPCON (operational command), defense cost burden sharing amid fiscal constraints in

both countries, the relocation of U.S. bases within Korea, and the North Korean threat. Both sides will want to avoid a repeat of the beef issue that ignited anti-American sentiment in South Korea and will not want to add civil nuclear trade to the list of unsettled issues. Failure to come to closure on a peaceful nuclear trade pact may lead to South Korean public criticism of the alliance.

**Short-term extension of the existing agreement.** The two sides could agree to try to extend the current agreement for a specified period of time, such as two or three years or perhaps until the joint study is completed in ten years. This option would give both sides more time to reach agreement on the enrichment and pyroprocessing issues.

However, this course of action carries considerable risk. Since the existing U.S.-ROK agreement does not meet all the requirements of the Atomic Energy Act for a peaceful nuclear cooperation agreement, the agreement may not enter into effect after the U.S. president has submitted it to Congress for a ninety legislative day review. Rather, approval of the agreement would require an affirmative vote by both houses of Congress. It is proving increasingly difficult to pass important issues through Congress, and it is questionable whether both Houses would take a vote on a timely basis. Even in the event of a timely vote, this option would run the same risks noted above of Congress possibly seeking to add conditions onto the approval of the agreement that would be unacceptable to either the U.S. executive branch or the South Korean government. This option would require a major lobbying effort by the administration.

## CONCLUSIONS

A new bilateral peaceful nuclear cooperation agreement offers the potential for strengthening the ROK-U.S. nuclear partnership and could open up new avenues of collaboration such as combining Korea's nuclear manufacturing and construction abilities with U.S. technology, and global marketing outreach aimed at strengthening joint competitiveness in the global nuclear market that is currently dominated by France and Russia.<sup>26</sup>

To realize this potential, the two sides will have to resolve their differences over the enrichment and pyroprocessing issues. This will require acknowledgment of the political sensitivities and legal requirements of both countries. South Korea views its existing relationship with the U.S. as one-sided and giving the U.S. unilateral control over its civil nuclear program. It also sees the U.S. policy as discriminatory compared to Washington's treatment of Japan and India. In addition, Seoul believes that the US needs to implement the current "strategic alliance" declared by then President Lee Myung-bak and President Barack Obama in 2009.<sup>27</sup> On the other hand, Seoul has to recognize US nonproliferation priorities, America's strict legal requirements for approving sensitive nuclear activities, its concerns about setting a damaging nonproliferation precedent, and the implications of a new U.S.-ROK civil nuclear trade pact for denuclearizing North Korea.

None of these options discussed here are ideal. All have real costs and risks, but the two sides need to move quickly in deciding how they wish to work their way out of the political thicket, avoid the political and economic costs of failure, and come to a timely closure on a new peaceful nuclear trade pact.

## ADDENDUM

Since the March publication of this paper, the U.S. and the ROK agreed in April 2013 to extend the existing peaceful nuclear cooperation for two years until 2016. The intention was to provide ample time for negotiators to resolve the ENR issue during the presidential terms of both President Barack Obama and President Park Geun-hye.<sup>28</sup> This extension, however, will require approval by the U.S. Congress. The House of Representatives passed a bill (HR 2449) in September registering its approval of the extension. The Senate passed a bill (S. 1901) in January 2014 extending the U.S.-ROK agreement for two years. However, the House and Senate versions of the bill are not identical and the two Houses of Congress will need to reconcile these differences before the existing agreement expires in March. The two countries will still need to move expeditiously to resolve their differences over enrichment and pyroprocessing. At the time of the extension agreement, a proposal was already on the table to allow the ROK to conduct some research and development at ROK facilities including first phase pyroprocessing (electro-reduction).<sup>29</sup> Since then, the chief U.S. negotiator has changed to Assistant Secretary of State for International Security and Nonproliferation Thomas Countryman, and ROK President Park Geun-hye has set three priorities: 1) spent fuel management, 2) reliable enriched uranium fuel supply assurance, and 3) ROK competitiveness as a nuclear exporter. Failure to come to an agreement in two years may result in another extension.

## ENDNOTES

- <sup>1</sup> Consent rights can be granted in two ways: 1) in the agreement itself, as done in the Japan and EURATOM agreements, or 2) after the agreement enters into force in what is called a subsequent arrangement. The US has given its consent to reprocessing in agreements with EURATOM and Japan, and through the subsequent arrangements process with Japan and India.
- <sup>2</sup> Nuclear Nonproliferation Act of 1978: Congress laid out nine conditions, including an assurance of peaceful non-explosive use, safeguards for non-nuclear-weapon states, safeguards in perpetuity, an assurance of physical protection, and consent rights over enrichment, reprocessing and alteration of nuclear material subject to the agreement. All of these conditions must apply to any transfer of sensitive nuclear technology (enrichment and reprocessing).
- <sup>3</sup> Seongho Sheen, "Nuclear Sovereignty versus Nuclear Security: Renewing the ROK-US Atomic Energy Agreement," *Korea Journal of Defense Analysis*, Vol. 23, No. 2, June 2011, pp. 273-288.
- <sup>4</sup> Miles A. Pomper, "How to Unsnag US-South Korea Nuclear Negotiations," *Bulletin of the Atomic Scientists*, 25 September 2012.

- <sup>5</sup> Fred McGoldrick, "New US-ROK Peaceful Nuclear Cooperation Agreement: A Precedent for a New Global Nuclear Architecture," Center for US-Korea Policy, Asia Foundation, November 2009.
- <sup>6</sup> Lee Han-soo, "Advanced Fuel Cycle Pyroprocessing Technology," 1 February 2013.
- <sup>7</sup> Park Seong-won, "Why South Korea Needs Pyroprocessing," *Bulletin of the Atomic Scientists*, 26 October 2009.
- <sup>8</sup> KAERI scientists.
- <sup>9</sup> The US and ROK agreed in 2011 to conduct a 10-year Joint Fuel Cycle study on spent fuel management options including pyroprocessing in parallel negotiations on the US-ROK nuclear cooperation agreement.
- <sup>10</sup> H.D. Kim, H.S. Shin, D.Y. Song, T.H. Lee, B.Y. Han, S.K. Ahn, and S.H. Park, "Application of Safeguards-By-Design for the Pyroprocessing Facilities in the ROK," *Journal of Nuclear Materials Management*, Summer 2012, Volume XL, No. 4.
- <sup>11</sup> Ibid.
- <sup>12</sup> The US agreed to such R&D level cooperation on a case-by-case basis. South Korean scientists were restricted from using natural uranium, which not contain plutonium and from "hot" processing of used nuclear fuel on Korean soil.
- <sup>13</sup> Richard Stratford, U.S. Department of State, deputy chief negotiator, panel remarks at the 2011 Carnegie International Nuclear Policy Conference, 29 March 2011.
- <sup>14</sup> North Korea's state-run KCNA report, January 25, 2013.
- <sup>15</sup> Pre-Hearing Questions for the Record, Senator Richard Lugar Nomination of Helen M. Tauscher to be Under Secretary of State for Arms Control and International Security, <http://Lugar.senate.gov>.
- <sup>16</sup> At the time, North Korea's HEU activities were not officially confirmed, and one way to deal with HEU suspicions was to include the 1992 South-North joint declaration clause in the September 2005 Six Party Joint Statement.
- <sup>17</sup> State Department Fact Sheet, July 15, 2011: "The United States' ability to use 123 Agreements to strengthen nonproliferation conditions in global nuclear commerce would therefore be significantly diminished, while at the same time the U.S. nuclear industry's ability to be a major player in global civil nuclear cooperation in the future would be crippled, resulting in the loss of potential American jobs... as H.R. 1280 would also require that every 'subsequent arrangement' under a 123 Agreement be approved by affirmative action by Congress, it would severely restrict the movement of nuclear material between countries, as well as the conduct of other routine nuclear commerce, under existing 123 Agreements."
- <sup>18</sup> IAEA document INFCIRC/254/Rev.10, Part 1.
- <sup>19</sup> Scott Kemp, remarks at "Fuel Cycle Policy and Fuel Supply Assurance: Opportunities and Challenges to Collaboration," GABI-KAIST Nuclear Energy Workshop, Washington, DC, 9 November 2012.
- <sup>20</sup> Ibid.
- <sup>21</sup> Ellen Tauscher, "Addressing the Nuclear Fuel Cycle: Internationalizing Enrichment Services and Solving the Problem of Spent-Fuel Storage," *Multinational Approaches to the Nuclear Fuel Cycle*, American Academy of Arts & Sciences, 2010.
- <sup>22</sup> See Section 131 of the Atomic Energy Act
- <sup>23</sup> Mark Holt, "US and South Korean Cooperation in the World Nuclear Energy Market: Major Policy Considerations," 28 January 2013.
- <sup>24</sup> Ibid.
- <sup>25</sup> This situation could change. DOE is presently considering amending its regulations on technology to require that only countries with an agreement for cooperation in effect

with the United States would be eligible for a general license. All others would require a specific authorization from the Secretary of Energy.

- <sup>26</sup> Jun Bong-geun, “The ROK-US Nuclear Partnership for the Peaceful Use and Nonproliferation,” EAI-CSIS Workshop on US-ROK Cooperation for Global Nuclear Governance, 16 November 2012.
- <sup>27</sup> June 16, 2009 US-ROK Joint Vision: “We aim to make low-carbon green growth into a new engine for sustainable economic prosperity and will closely cooperate in this regard. We will strengthen civil space cooperation, and work closely together on clean energy research and the peaceful uses of nuclear energy.” A similar agreement was reached on August 6, 2008 between then Presidents George W. Bush and Lee Myung-bak.
- <sup>28</sup> Senior officials in the State Department and the ROK Ministry of Foreign Affairs.
- <sup>29</sup> Official U.S. and ROK sources.



REGIONAL SECURITY LESSONS  
AND ISSUES

# EAST ASIA AT THE CROSSROADS: A COMPARATIVE STUDY ON TAIWAN'S AND KOREA'S RECONCILIATION WITH ADVERSARIES

Yeh-chung Lu, Byung Kwang Park, and Tung-chieh Tsai

## ABSTRACT

Security and political issues over the Taiwan Strait and the Korean Peninsula remain as flashpoints in East Asia since WWII. In the aftermath of the Cold War, these two cases share certain similarities: each government wishes to maintain a relatively stable relationship with its adversary, namely, China and North Korea, despite ideological differences. Research in International Relations (IR) has shed light on how certain rivals gradually reconciled with each other throughout history. Rapprochement makes conflict unlikely between two foes. In the case of Taiwan and mainland China relations, economic interdependence and positive political and societal interactions contributed to rapprochement between the two under the Ma Ying-jeou administration, while North Korea continued to threaten the existence of South Korea in the Lee Myung-bak era despite the latter's provision of economic assistance.

The authors argue that economic interdependence, together with negotiations and the political will of top leaders to pursue peace and stability, create a virtuous circle across the Taiwan Strait. This research further explores whether these conditions exist in inter-Korean relations.

With identification of the conditions under which peace was maintained through these years, this comparative study provides policy suggestions for not only Korea and Taiwan, but also for the United States. *Trustpolitik*, as proposed by President Park Geun-hye, seems to be the right direction in which regional stability is more likely to occur on the Korean Peninsula, due to its emphasis on nurturing goodwill with the North. This comparative study also provides lessons learnt from each other.

**Key words:** *cross-Strait relations, economic interdependence, inter-Korean relations, trustpolitik, rapprochement*

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## INTRODUCTION

Security and political issues over the Taiwan Strait and the Korean Peninsula remain as flashpoints in East Asia since WWII. In the aftermath of the Cold War, these two cases share certain similarities: each government wishes to maintain a relatively stable relationship with its adversary, namely, China and North Korea, despite ideological differences. This paper aims to explore and compare how the policy choices adopted by the two governments contributed to regional peace and stability, or the lack thereof.

Research in International Relations (IR) has shed light on how certain rivals gradually reconciled with each other throughout history. The conception of *rapprochement*, defined as a process to reestablish cordial relations between two previously hostile countries, is central to this research. *Rapprochement* makes conflict unlikely between two foes. In the case of Taiwan and mainland China relations, economic interdependence and positive political and societal interactions contributed to *rapprochement* between the two under the Ma Ying-jeou administration, while North Korea continued to threaten the existence of South Korea in the Lee Myung-bak era despite the latter's provision of economic assistance. In other words, globalization and trust worked together to achieve *rapprochement* across the Taiwan Strait, but were lacking in the case of the Korean Peninsula during the period of time under scrutiny.

Then, what are the factors behind a seemingly virtuous circle between Taiwan and China, in which economic interdependence seems to take roots in shaping top leaders' mindset and result in the absence of war since the 1990s? This is a question central to this research. The authors argue that economic interdependence, together with negotiations and the political will of top leaders to pursue peace and stability, create a virtuous circle across the Taiwan Strait. This research further explores whether these conditions exist in inter-Korean relations.

With identification of the conditions under which peace was maintained through these years, this comparative study provides policy suggestions for not only Korea and Taiwan, but also for the United States. *Trustpolitik*, as proposed by President Park Geun-hye, seems to be the right direction through which regional stability is more likely to occur on the Korean Peninsula, due to its emphasis on nurturing goodwill with the North. This strategy in turn may create constituencies within the authoritarian North Korean regime.

### RAPPROCHEMENT IN CROSS-STRAIT AND INTER-KOREAN RELATIONS

The study of war and peace has been central to IR scholarship. If a government believes that war is a constant in international affairs, then preparation for war

and investment in defense seems to be the optimal policy choice. If peace is considered more likely to exist, then more trade and other economic activities are expected to follow.

One school of thought in IR, realism, has tended to deem war as the constant in world politics, and balance-of-power as a means that can help maintain peace. How to acquire and resort to “guns” rather than “butter” becomes crucial to understand and explain a world from a realist perspective. In other words, trade would give way to political antagonism between rivalries.

However, others in IR emphasize that maintaining peace despite war seems to be a constant in world affairs. In broader literature on peace research, *rapprochement* is defined as the reestablishment of bilateral relations between two rivals after a conflict. A school of thought in IR scholarship suggests that economic interdependence helps to sustain peace in the post-Cold War era.<sup>1</sup> Economic interdependence, as Richard Rosecrance maintains, could help to foster peace among “trading states,” that usually see trading more profitable than invading.<sup>2</sup> And, the increase of communication resulted from trade would consequently nurture mutual trust in their dyadic relations. Thus, “butter” seems to be the main theme in world politics and the leadership of any given country should cooperate for mutual benefits.

Scholars who side with Rosecrance seem more sanguine to argue that the growing trade volume has played a crucial role in preventing direct conflict in the dyadic relations between two antagonist countries and the high volume of trade has helped to forge a strong interest in peace.<sup>3</sup> Though this sort of statement seems logically sound, many critics are suspicious of assertions of a causal relationship between trade and peace. While liberals argue that trade could lead to peace, the evidence also suggests that, in the face of deep trade relations with other European countries, Germany still engaged in WWI and WWII. In addition, by considering a snapshot of the level of trade relations at a single point in time, the causal arrow could be reversed so as to suggest that it is peace that leads to trade.

Cross-Strait and inter-Korean relations provide the case in point to test the validity of the realist and liberal respective arguments about war, peace, and economic interdependence. For one, if realism holds true that political and security considerations trump economic ones, then political antagonism would precede economic interdependence and there should not have been economic interactions between mainland China and Taiwan. If liberals are right about the positive effect that trade leads to peace, then both sides of the Korean Peninsula should have been closer with less degree of political antagonism. Nevertheless, these two cases seem to provide a way of thinking that can further integrate the liberal and realist perspectives. In other words, these two paradigms are not inherently in conflict with each other, especially when we are conducting problem-solving research

that aims to respond and deal with war and peace – the real world problem. The arguments of economic interdependence and societal exchanges fit in to liberal thinking, and issues regarding political will of leadership relate to the realist tradition. Only with a mutually complementary view of these two paradigms, can we better understand war and peace.

Most current studies adopt this complementary view to explore “how” to facilitate peace between two rivals. Miles Kahler and Scott Kastner investigated the conditions under which economic engagement strategies worked best to change target countries’ policy behavior.<sup>4</sup> They suggested that economic engagement policies are more likely to succeed in changing the target country’s policy when there is a broad consensus within the initiating country, along with the fact that the target is a democracy. In other words, regime type matters when economic interdependence is considered a tool to achieve political goals. Cross-Strait and inter-Korean relations between 2000 and 2006 were the main focus of their research.

As part of the analysis of bilateral interactions, other scholars and analysts employ different IR theories to demonstrate how economic cooperation between Taiwan and mainland China has steadily led to peace across the Taiwan Strait, while realism seems to dominate, once and again, in the inter-Korean relations under the Lee Myung-bak administration.<sup>5</sup> According to Hyug-baeg Im and Yu-jeong Choi, functionalism and neo-functionalism are contributing to stabilizing cross-Strait and inter-Korean relations, and yet constructivism in the former and realism in the latter are responsible for setbacks.<sup>6</sup> In other words, the paradigm shift in top leaders’ mindset is a necessary condition for rivals to escape the security dilemma and to facilitate cooperation.

A more nuanced evaluation on Taiwan’s mainland China policy under Ma Ying-jeou and South Korea’s North policy under Lee Myung-bak advised that the two-level game theory constituted an indispensable part. Both countries need to deal with the regional context set by the United States while leaders are required to respond to domestic challenges from opposition parties.<sup>7</sup> Steve Chan and his colleagues put greater emphasis on the international setting than domestic politics, wherein Ma’s mainland China policy worked to preserve peace because the U.S. preferred a relatively stable relationship with China, and Lee’s policy was highly constrained by Bush’s hostile policy toward the North. Nevertheless, U.S. support also helped both governments to ward off domestic oppositions and criticisms.

From the aforementioned research, the relationship between war, peace, and economic interdependence deserves further exploration in considering overall cross-Strait and inter-Korean relations in recent years. This essay accepts the liberal assumption that economic interdependence can serve to change state preferences and to raise costs of conflict, thus potentially altering state behavior.

However, while the liberal view adopts a snapshot analysis that focuses on a single point of time in which trade coexists with peace between two players, we argue that political will for cooperation as another variable may also serve to stabilize the current cross-Strait relations. Economic interdependence, along with negotiations and the political will of top leaders to pursue peace and stability, create a virtuous circle across the Taiwan Strait and may shed light on inter-Korean relations.

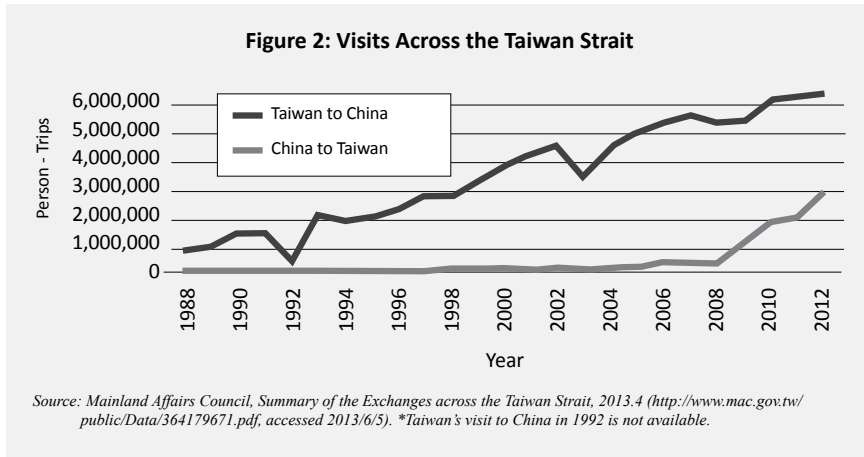
### RAPPROCHEMENT IN TAIWAN-CHINA RELATIONS, 1987-2012

Since late 1987, societal level interactions have contributed to gradually transform the cross-Strait relations. These interactions have two major components: trade and personal visits. Economic ties remain crucial to peace across the Taiwan Strait. Figure 1 indicates the trading relationship between Taiwan and China from 1979 to 2012. The increase of trade volume between the two foes creates a common interest across the Taiwan Strait. When mainland China began to reform economically in late 1978, cross-Strait economic relations improved significantly. From 1979 to 1987, Taiwan's export to mainland China has increased from US\$21.47 million to US\$1,226.5 million. Total trade between Taiwan and China increased from US\$77.76 million in 1979 to US\$1,515.4 million in 1987. This number reached US\$127.56 billion in 2012.



Tourism is another person-to-person interaction that contributes to stabilizing cross-Strait relations. Since 1988, the Taiwanese government has allowed Taiwanese people to visit mainland China for humanitarian reasons. In that single year, there were 437,700 trips made from Taiwan to China. In the same year, 386

trips were made from China to Taiwan, for cultural exchanges and humanitarian needs. Through the end of 2012, this number accumulated to 70,319,789 from Taiwan to China, and to 8,946,850 from China to Taiwan, including Chinese tourists that were granted after 2002. The statistics regarding visits across the Taiwan Strait are demonstrated as Figure 2.



With trade and more people-to-people interactions, there emerged the need for cooperation between both governments across the Taiwan Strait to cope with the issues resulting from these interactions. As a result, the Taiwanese government established the Strait Exchange Foundation (SEF) to cooperate with its counterpart on mainland China, the Association for Relations across the Taiwan Straits (ARATS). To date, there are more than 40 rounds of meetings between SEF and ARATS, with the significant Koo-Wang Talks authorized by both governments. These meetings are symbolic and substantive, functioning as a platform for both sides to iron out difficulties or concerns such as trans-border crimes. Appendix 1 indicates 17 rounds of meetings conducted by heads and high-level officials of SEF and of ARATS from 1991 to July 2013.

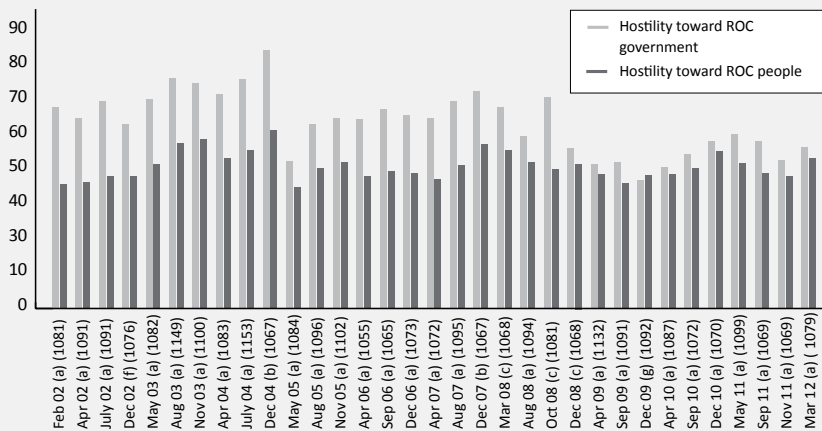
These talks and negotiations on routine issues, we argue, played a facilitating role in locking in the positive interactions between both sides across the Strait. Economic interdependence increases the costs of waging a war against each other, and negotiations and talks spread the dividends to other groups in the societal level, which contributes to nurture constituencies favorable to a stable relationship between both sides (the doves). This is a crucial component of the mechanism of two-level games.<sup>8</sup>

Economic interdependence and businesslike talks provide the incentives for *rapprochement*, and yet, these two factors are not a guarantee to peace across the Taiwan Strait. Political will of top leaders is the key to shaping political agendas,

with support from doves on both sides. Nevertheless, if a political leader believes that his power base does not come from the doves, then it becomes more likely he will pursue a more hawkish policy to satisfy those who hold a hostile view on cross-Strait relations (the hawks).

It is important to take this component into account. Mainland China delivered a plan for peaceful unification in as early as 1979, and this plan was further formalized by Chinese Marshal Ye Jianying, the Chairman of the National People's Congress, in 1981. It was dubbed "Ye's Nine-Point Proposal," in which Taiwan was able to maintain its social and economic system, and even military forces, if it were to rejoin the mainland. This proposal was in line with mainland China's need for larger investment from abroad. This argument of political will also helps us understand why mainland China turned to a hawkish policy under Jiang Zeming from 1995 leading up to Taiwan's first presidential election in 1996, despite the growing numbers in economic and societal exchanges across the Taiwan Strait. On the Taiwan side, Lee Teng-hui's "two-state theory" and Chen Shui-bian's "one country on each side statement" aimed to boost their own popularity domestically but had

**Figure 3. Taiwan's Perception of Mainland China's Hostility, 2002-2012 (Unit: %)**



Survey conducted by:

- (a) Election Study Center, National Chengchi University, Taipei (886-2-29387134)
- (b) Burke Marketing Research, Ltd., Taipei (886-2-25181088)
- (c) China Credit Information Service, Ltd., Taipei (886-2-87683266)
- (d) Center for Public Opinion and Election Studies, National Sun Yat-sen University, Kaohsiung (886-7-52520000)
- (e) Survey and Opinion Research Group, Dept. of Political Science, National Chung Cheng University, Chiayi (886-5-2720411)
- (f) e-Society Research Group, Taipei (886-2-27213658)
- (g) Center for Public Opinion and Public Policy, Taipei Municipal University of Education, Taipei (886-2-23113040)

Respondents: Taiwanese adults aged 20-69 accessible to telephone interviewers

Source: Mainland Affairs Council (MAC) of Republic of China (Taiwan), released April 2012, <http://www.mac.gov.tw/public/Attachment/24249412649.gif> (accessed 2012/5/30).

a negative impact on cross-Strait relations. In the meantime, as illustrated in Figure 1, Taiwan has been promoting economic ties to increase its gains from trading with mainland China, while also hoping that more interactions might someday change mainland's "at-whatever-it-costs" mindset for unification. Mainland China is also exerting the economic "carrot" as leverage to raise the cost for Taiwan's de jure independence. In other words, "economics first, politics later" has served the interests of both sides. President Lee Teng-hui's "no rush, be patient" and President Chen Shui-bian's "active opening, effective management" efforts, aimed at slowing down the pace and scope of Taiwan's ties on trade and investment with mainland China, has turned out to be futile.

President Ma Ying-jeou took office in 2008, and Taiwan began to adopt the approach of "viable diplomacy," in which Taiwan will not pursue the increase of diplomatic allies at the expense of national resources and of its relations with China. This approach demonstrated Taiwan's unilateral accommodation to build trust with

**Appendix 1: Chronology of Meetings between Taiwan and Mainland China, 1991-2013**

No.	Name of Meeting	Date	Place	Subject
1	1 <sup>st</sup> Chen-Tang Talks	Apr. 28 -May 4, 1991	Beijing	Discussion of procedural issues related to cross-Strait joint prevention of maritime crime
2	2 <sup>nd</sup> Chen-Tang Talks (Meeting on Procedural Issue Related to Cross-Strait Joint Prevention of Maritime Crime)	Nov. 4-7, 1991	Beijing	Discussion of procedural issues related to cross-Strait joint prevention of maritime crime
3	Koo-Wang Talks	Apr. 27-29, 1993	Singapore	Discussion and finalization of the four agreements to be signed by SEF and ARATS
4	1 <sup>st</sup> Chiao-Tang Talks	Jan. 31-Feb. 5, 1994	Beijing	Discussion of how to implement the "Joint Agreement of the Koo-Wang Talks" and issues for follow up routine meetings
5	2 <sup>nd</sup> Chiao-Tang Talks	Aug. 4-7, 1994	Taipei	Discussion of SEF and ARATS affairs and routine consultation issues
6	3 <sup>rd</sup> Chiao-Tang Talks	Jan. 21-28, 1995	Taipei	Discussion of SEF and ARATS affairs, routine meeting issues, and cross-Strait exchanges
7	Shi-Zhang Talks (Talks between officials in charge at SEF and ARATS to decide the agenda of the Koo-Wang Meeting)	Sep. 22-24, 1998	Beijing	Discussion of the agenda for the Koo-Wang Meeting

mainland China. The Ma administration continued efforts to restore mutual political trust with mainland China. With the statement “no unification, no independence, and no use of force” as the utmost guiding principle for cross-Strait relations, President Ma restored meetings between SEF and ARATS. President Ma further proposed to institutionalize cross-Strait relations with the signing of the Economic Cooperation Framework Agreement (ECFA) in 2010. In return, China also showed reciprocal self-restraint not to compete with Taiwan via dollar diplomacy. Figure 3 indicates Taiwan’s perception of China overtime.

*Rapprochement* seems to take roots in cross-Strait relations, as indicated from the above discussion. Economic interdependence, as manifested in China’s aim for economic development and in Taiwan’s need for continuous prosperity, plays a significant role in stabilizing this dyadic relationship. And, the political will of top leaders also factors into *rapprochement*.<sup>9</sup>

Chief Negotiators	Results
C.V. Chen, Tang Shubei	Established a cross-Strait communications channel and exchanged opinions on relevant issues
C.V. Chen, Tang Shubei	The two sides extensively exchanged views on cooperation areas and held substantive discussions on the place and time, without achieving concrete results
Koo Chen-fu, Wang Daohan	The two sides sign four agreements: the Agreement on the Use and Verification of Certificates of Authentication Across the Taiwan Straits; Agreement on Matters Concerning Inquiry and Compensation for [Lost] Registered Mail Across the Taiwan Straits; Agreement on the System for Contacts and Meetings between SEF and ARATS; and Joint Agreement of the Koo-Wang Talks
Chiao Jen-ho, Tang Shubei	1. The two sides issue the “joint press release by Mr. Chiao Jen-ho and Mr. Tang Shubei.”; 2. “Measures on Facilitating the Entry and Exit of SEF and ARATS Personnel” are finalized
Chiao Jen-ho, Tang Shubei	The two sides issue the “joint press release on the SEF and ARATS Taipei Talks”
Chiao Jen-ho, Tang Shubei	The two sides extensively exchange views
Shi Hwei-you, Zhang Jincheng	The two sides reach a decision on the agenda for the Koo-Wang meeting



**Appendix 1: Chronology of Meetings between Taiwan and Mainland China, 1991-2013**

No.	Name of Meeting	Date	Place	Subject
8	Koo-Wang Meeting	Oct. 14-18, 1998	Shanghai, Beijing	Negotiations on “cross-Strait charter flights” and “allowing Chinese tourists to visit Taiwan”
9	1 <sup>st</sup> Chiang-Chen Meeting	June 11-14, 2008	Beijing	Negotiations on cross-Strait air transport, sea transport, postal services, and food safety
10	2 <sup>nd</sup> Chiang-Chen Talks	Nov. 7-11, 2008	Taipei	1. Negotiations on cross-Strait joint crime-fighting and mutual judicial assistance, cross-Strait financial cooperation, regular cross-Strait flights and allowing mainland investment in Taiwan. 2. Arrangements for issues that SEF and ARATS should actively plan and prepare for in the next phase.
11	3 <sup>rd</sup> Chiang-Chen Talks	April 25-29, 2009	Nanjing	Negotiations on cross-Strait cooperation in inspection and quarantine of agricultural products; avoiding double taxation and improving cooperation on tax operations; cooperation in respect of standards, metrology, inspection and accreditation; and cooperation in fishing crew affairs.
12	4 <sup>th</sup> Chiang-Chen Talks	Dec. 21-25, 2009	Taichung	Negotiations on cross-Strait cooperation in inspection and quarantine of agricultural products; avoiding double taxation and improving cooperation on tax operations; cooperation in respect of standards, metrology, inspection and accreditation; and cooperation in fishing crew affairs.
13	5 <sup>th</sup> Chiang-Chen Talks	June. 28-30, 2010	Chongqing	1. Negotiations on the “Cross-Strait Economic Cooperation Framework Agreement” and the “Cross-Strait Agreement on Intellectual Property Rights Protection and Cooperation”; 2. Arrangements for the priority issues of next stage

Chief Negotiators	Results
Koo Chen-fu, Wang Daohan	Consensus is reached on “strengthening dialogue between the two sides to promote the resumption of institutionalized negotiations,” “agreement between the two sides on enhancing promotion of the exchange activities between SEF and ARATS personnel at all levels,” “agreement between the two sides to actively provide mutual assistance in resolving cases involving the rights and interests of the people,” “inviting Mr. Wang Daohan to visit Taiwan and Mr. Wang’s agreement to visit Taiwan at an appropriate time.”
Chiang Pin-kung, Chen Yunlin	1. SEF and ARATS officially restore mechanisms for institutionalized dialogue and negotiations. 2. The two sides sign the “Minutes of Talks on Cross-Strait Charter Flights “ and “Cross-Strait Agreement on Travel by Mainland Residents to Taiwan.” 3. Arrangements are made for following up on the issues negotiated between SEF and ARATS. 4. A course is set for future cross-Strait exchanges and cooperation. 5. Dialogue and exchanges between SEF and ARATS are strengthened. 6. Chen Yunlin agrees to visit Taiwan at an appropriate time.
Chiang Pin-kung, Chen Yunlin	1. The two sides sign the “Cross-Strait Air Transport Agreement,” “Cross-Strait Sea Transport Agreement,” “Cross-Strait Postal Service Agreement” and “Cross-Strait Food Safety Agreement.” 2. The two sides reviewed the results and implementation situation of the two agreements signed last time. 3. Arrangements are made for following up on the issues negotiated between SEF and ARATS. 4. It further confirms the institutionalized contact and exchange approach between personnel of the two organizations.
Chiang Pin-kung, Chen Yunlin	1. The two sides signed “Agreement on Joint Cross-Strait Crime-Fighting and Mutual Judicial Assistance,” “Cross-Strait Financial Cooperation Agreement “ and “Supplementary Agreement on Cross-Strait Air Transport.” They also reached a consensus on matters pertaining to promoting mainland investment in Taiwan. 2. The two sides re-examined the results and progress of implementation of the six agreements the two organizations have signed since last year. 3. Arrangements are made for following up on the issues negotiated between SEF and ARATS. 4. SEF and ARATS further consented to promoting exchanges in various areas.
Chiang Pin-kung, Chen Yunlin	1. The two sides signed three agreements: the “Cross-Strait Agreement on Cooperation in Inspection and Quarantine of Agricultural Products”; the “Cross-Strait Agreement on Cooperation in Respect of Standards, Metrology, Inspection and Accreditation”; and the “Cross-Strait Agreement on Cooperation in Fishing Crew Affairs.” 2. Re-examined the results and progress of implementation of the nine agreements the two organizations have signed since last year. 3. Arrangements are made for following up on the issues negotiated between SEF and ARATS. 4. The two organizations further consented to promoting exchanges in various areas.
Chiang Pin-kung, Chen Yunlin	1. The two sides signed two agreements: the “Cross-Strait Economic Cooperation Framework Agreement” and the “Cross-Strait Agreement on Intellectual Property Rights Protection and Cooperation”; 2. Re-examined the results and progress of implementation of the 12 agreements the two organizations have signed; 3. Consensus reached on the priority issues of the next stage; 4. The two organizations further consented to promoting exchanges in various areas.

**Appendix 1: Chronology of Meetings between Taiwan and Mainland China, 1991-2013**

No.	Name of Meeting	Date	Place	Subject
14	6 <sup>th</sup> Chiang-Chen Talks	Dec. 20-22, 2010	Taipei	1. Negotiations on the “Cross-Strait Agreement on Medical and Health Cooperation” and “Cross-Strait Agreement on Investment Protection”; 2. Arrangements for the priority issues of next stage
15	7 <sup>th</sup> Chiang-Chen Talks	Oct. 19-21, 2011	Tianjin	To conduct negotiations concerning a possible cross-Strait agreement on nuclear power safety cooperation, investment protection and industrial cooperation
16	8 <sup>th</sup> Chiang-Chen Talks	Aug. 8-10, 2012	Taipei	To conduct negotiations concerning a possible cross-Strait agreement on investment protection and customs cooperation
17	9 <sup>th</sup> Round of Cross-Strait High-Level Talks	Jun. 20-22, 2013	Shanghai	1. The first meeting to be held between the two sides since new leaders of SEF and ARATS took office. 2. Trade in Service agreement is the first free trade agreement to be concluded between the two sides on the basis of the Economic Cooperation Framework Agreement (ECFA) and the WTO’s General Agreement on Trade in Services (GATS). 3. To facilitate negotiations on possible agreements on trade in goods and dispute settlement.

\*ARATS was not yet established at this time. Tang Shubei attended the talks as deputy director of the Taiwan Affairs Office under the State Council.

## RAPPROCHEMENT IN SOUTH KOREA-NORTH KOREA RELATIONS, 1989-2012

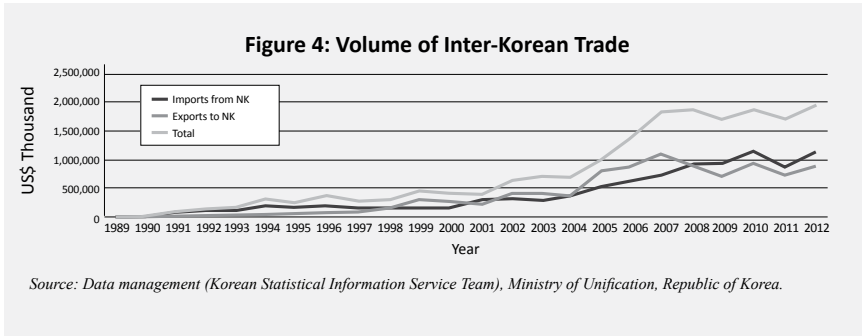
South Korea, like Taiwan, needs to reconcile with its adversary for better economic development and other national goals. Besides, South Korea and Taiwan are both eager to maintain superiority in social and economic terms as a role model to their counterparts, so that they can lead the process of *rapprochement*.

Unlike the course in cross-Strait relations, post-Cold War inter-Korean relations began with South and North Korea’s accession to the United Nations concomitantly on September 17, 1991. Both sides signed the Agreement on Reconciliation, Nonaggression, and Exchanges and Cooperation in 1992. However, this seemingly promising *rapprochement* was soon challenged by North Korea’s nuclear gambit

Chief Negotiators	Results
Chiang Pin-kung, Chen Yunlin	1. The two sides signed the "Cross-Strait Agreement on Medical and Health Cooperation"; 2. Staged consensus reached on the "Cross-Strait Agreement on Investment Protection"; 3. Re-examined the results and progress of implementation of those agreements the two organizations have signed; 4. Established the mechanism for re-examining the implementation of those cross-Strait agreements; 5. Consensus reached on the priority issues of the next stage; 6. The two organizations further consented to strengthening exchanges.
Chiang Pin-kung, Chen Yunlin	Signed the "Cross-Strait Nuclear Power Safety Cooperation Agreement"
Chiang Pin-kung, Chen Yunlin	Signed the "Cross-Strait Investment Protection and Promotion Agreement" and the "Cross-Strait Customs Cooperation Agreement"
Lin Join-sane, Chen Deming	1. Signed the "Cross-Strait Trade in Services Agreement"; 2. A Joint Opinion on the Kinmen water supply issue.

in the early 1990s. Under the Clinton administration, parties concerned reached the 1994 Agreed Framework in which North Korea agreed to a gradual, step-by-step approach that would ultimately lead to a nuclear weapons free Korean Peninsula, the construction of two light-water reactors (LWR) in the North, and normalized ties between Pyongyang and Washington.

With a relatively calm relationship between North Korea and the United States, President Kim Dae-jung extended an olive branch to the North under the name of the "Sunshine Policy" in 1998. In other words, the view of "doves" seemed to take root not only in South Korea but also in the North, with no evident opposition from the United States. With supporters, especially business groups within the South, trade volume between South and North Korea began to grow in the same period of time as indicated in Figure 4.



Although the trade volume is considered small compared to that in cross-Strait relations, many still expect that economic interdependence between the two Koreas would lead to peace. South Korea sees these trade ties as indirect economic exchanges in essence, no tariffs for these intra-Korean exchanges. In addition to economic interactions, people-to-people exchanges started with a relatively slow pace, partly due to the nature of North Korea’s authoritarian regime.

Against this backdrop, it is noteworthy that both Kim Dae-jung and Kim Jong-il agreed to hold a summit meeting in 2000, with the remarkable June 15th North-South Joint Declaration. Both sides agreed to have ministerial talks and military working-level talks, and President Kim Dae-jung received the Nobel Peace Prize for staging the summit. Appendix 2 indicates 23 rounds of meetings conducted by the heads and high-level officials of South and North Korea from 2000 to 2007.

However, the U.S. labeling of North Korea as part of the “axis of evil” put an end to the amicable atmosphere between South and North Korea. Toward the end of 2002, North Korea had adopted a more hostile policy toward other countries, including missile tests and even withdrawal from the Nuclear Nonproliferation Treaty (NPT) in January 2003. While facing nuclear tensions,

<b>Appendix 2: Chronology of Meetings between South and North Korea, 2000-2007</b>				
No.	Name of Meeting	Date	Place	Subject
1	1 <sup>st</sup> Inter-Korean Summit	June 13-15, 2000	Pyongyang	Discussion of unification, Inter-Korean communication, family reunion
2	2 <sup>nd</sup> Inter-Korean Summit	Oct. 2-4, 2007	Pyongyang	Reaffirmed the spirit of the June 15 Joint Declaration and discussion on various issues related to realizing the advancement of South-North relations
3	1 <sup>st</sup> Inter-Korean Ministerial Talk	July 29-31, 2000	Seoul	Emphasized the great significance of the historic summit talks between the heads of South and North Korea and the June 15 Joint Declaration

South Korea prioritized aid for peace as a strategy to persuade North Korea to retreat from its nuclear confrontation with the U.S.

President Roh Moo-hyun assumed office in February 2003 and continued a “politics first, economics later” policy. He initiated a more proactive South Korean role in inter-Korean relations to somewhat contradict Washington’s hawkish stance. This was in sharp contrast to the U.S. stance on the nuclear issue, to which North Korea even resorted to the first nuclear test in October 2006. President Roh, under these circumstances, still initiated a second summit with the North in October 2007. Nevertheless, in spite of North Korea’s continuing provocations, conciliatory policies adopted by Presidents Kim and Roh were perceived as a failure.

President Lee Myung-bak assumed office in 2008, wherein inter-Korean relations were about to enter a new phase given the changing international environment and the political power shift from a liberal to a relatively conservative government. To respond, the Lee Myung-bak administration proposed the “Vision 3000: Denuclearization and Openness” initiative, in which South Korea was willing to create an environment for the North to denuclearize and for both Koreas to prosper economically.

However, North Korea’s truculent behavior made it more difficult, with only limited to no reciprocation. With the same analytical framework, inter-Korean trade started in 1989, and the total volume continued to grow under the Kim Dae-Jung and Roh Moo-Hyun years. Economic cooperation improved over the years, especially in the aftermath of the June 15th joint communiqué made in Pyongyang in 2000. The Mt. Kumkang sightseeing project, Gaesung industrial complex project, and other inter-Korean trade initiatives have significantly contributed to improved bilateral relations. Nevertheless, this trading relationship remains unidirectional, with South Korea importing more from North Korea.

Chief Negotiators	Results
Kim Jong-il, Kim Dae-jung	Signed the June 15th North-South Joint Declaration
Kim Jong-il, Roh Moo-hyun	Signed Peace Declaration (eight-point agreement)
Cheon Kum-jin, Park Jae-kyu	Joint Press Statement, including resuming the operations of the South-North Liaison Office at Panmunjeom, rehabilitating the Seoul-Shinuiju Railway

**Appendix 2: Chronology of Meetings between South and North Korea, 2000-2007**

No.	Name of Meeting	Date	Place	Subject
4	2 <sup>nd</sup> Inter-Korean Ministerial Talk	Aug. 28 -Sep. 1, 2000	Pyongyang	Emphasized anew the great significance of the June 15 Joint Declaration
5	3 <sup>rd</sup> Inter-Korean Ministerial Talk	Sep. 27 -30, 2000	Jeju Island	Reaffirmed the points agreed to after the announcement of the June 15 Joint Declaration
6	4 <sup>th</sup> Inter-Korean Ministerial Talk	Dec. 12-16, 2000	Pyongyang	Assessed the projects undertaken during the last six months to implement the June 15 Joint Declaration
7	5 <sup>th</sup> Inter-Korean Ministerial Talk	Sep. 15-18, 2001	Seoul	Discussion of the family reunions and developing dialogue and cooperation between the two sides
8	6 <sup>th</sup> Inter-Korean Ministerial Talk	Nov. 9-14, 2001	Mt. Kumkang	Discussion on the changing international affairs after 9/11
9	7 <sup>th</sup> Inter-Korean Ministerial Talk	Aug. 12-14, 2002	Seoul	Confirmed the willingness to carry out faithfully the June 15 Joint Declaration
10	8 <sup>th</sup> Inter-Korean Ministerial Talk	Oct. 19-22, 2002	Pyongyang	Discussion on recent inter-Korean relations and confirmed the basic spirit of the June 15 Joint Declaration
11	9 <sup>th</sup> Inter-Korean Ministerial Talk	Jan. 21-24, 2003	Seoul	Exchanged each other's views on the nuclear issues
12	10 <sup>th</sup> Inter-Korean Ministerial Talk	April 27-29, 2003	Pyongyang	Discussed matters of common concern in connection with the implementation of June 15 <sup>th</sup> Joint Declaration
13	11 <sup>th</sup> Inter-Korean Ministerial Talk	July 9-12, 2003	Seoul	Discussion on the issues of mutual concern related to the promotion of peace on the Korean Peninsula and of the inter-Korean reconciliation and cooperation
14	12 <sup>th</sup> Inter-Korean Ministerial Talk	Oct. 14-17, 2003	Pyongyang	Discussion on current issues, agreed to continue cooperation in promoting peace on the Korean Peninsula
15	13 <sup>th</sup> Inter-Korean Ministerial Talk	Feb. 3-6, 2004	Seoul	Discussion on the prosperity of the Korean people and all problems to make substantive progress in inter-Korean relations
16	14 <sup>th</sup> Inter-Korean Ministerial Talk	May 4-7, 2004	Pyongyang	Shared the view that inter-Korean relations should be developed based on the basic spirit of the June 15 Joint Declaration
17	15 <sup>th</sup> Inter-Korean Ministerial Talk	June 21-24, 2005	Seoul	Assessed the accomplishments made over the past five years since the June 15 Joint Declaration and agreed to promote peace and prosperity on the Korean Peninsula

Chief Negotiators	Results
Cheon Kum-jin, Park Jae-kyu	Joint Press Statement, including family reunion, holding talks between South and North Korean military authorities, establishing a legal framework for economic cooperation
Cheon Kum-jin, Park Jae-kyu	Joint Press Statement, including family reunions, establishing a Committee for the Promotion of Inter-Korean Economic Cooperation, expanding exchange and cooperation in academic, cultural and athletic areas
Cheon Kum-jin, Park Jae-kyu	Joint Press Statement, including establishing and operating Inter-Korean Economic Cooperation Promotion Committee, cooperating in the fishing industry
Kim Ryeung-sung, Hong Soon-yong	Joint Press Statement, including revitalizing Mt. Geumgang tourism, connecting railroads among the South, the North and Russia, construction of the Gaeseong Industrial Complex
Kim Ryeung-sung, Jeong Se-hyun	No Joint Press Release because South and North Korea failed to reach an agreement
Kim Ryeung-sung, Jeong Se-hyun	Joint Press Release, including the military assurance measures for the reconnection of the inter-Korean railways and roads, family reunions, North Korea's participation in the 14 <sup>th</sup> Asian Games in Busan
Kim Ryeung-sung, Jeong Se-hyun	Joint Press Release, including making common efforts to guarantee peace and security on the Korean Peninsula, construction of the Seoul-Sinuiju and East Sea railways and roads
Kim Ryeung-sung, Jeong Se-hyun	Joint Press Release, including agreeing to hold the 10 <sup>th</sup> Inter-Korean Ministerial Talks from April 7 to 10, 2003 in Pyongyang
Kim Ryeung-sung, Jeong Se-hyun	Joint Press Release, including agreeing to hold the 10 <sup>th</sup> Inter-Korean Ministerial Talks from April 7 to 10, 2003 in Pyongyang
Kim Ryeung-sung, Jeong Se-hyun	Joint Press Release, including discussing fully the other party's position regarding the nuclear issue on the Korean Peninsula and continual cooperation
Kim Ryeung-sung, Jeong Se-hyun	Joint Press Release, but without specific agreements except setting a date for the next talk
Kim Ryeung-sung, Jeong Se-hyun	Joint Press Release, including cooperating for a fruitful second round of the Six-Party Talks, holding a military authorities' meeting, reunion of separated families
Kwon Ho-woong, Jeong Se-Hyun	Joint Press Release, but without significant results due to the North's nuclear weapons
Kwon Ho-woong, Jeong Dong-yong	Joint Press Release, including family reunions, the ultimate goal of the denuclearizing the Korean Peninsula, to hold the 3 <sup>rd</sup> inter-Korean General-level Military Talks, agreed to allow North Korean civilian vessels to pass through the Jeju Strait



<b>Appendix 2: Chronology of Meetings between South and North Korea, 2000-2007</b>				
No.	Name of Meeting	Date	Place	Subject
18	16 <sup>th</sup> Inter-Korean Ministerial Talk	Sep. 13-16, 2005	Pyongyang	Praised successful hosts of the June 15 National Unification Festival held in Pyongyang and the August 15 Grand National Festival held in Seoul
19	17 <sup>th</sup> Inter-Korean Ministerial Talk	Dec. 13-16, 2005	Jeju Island	Made a positive assessment of developments in inter-Korean relations during this year which marked a turning point in the implementation of the June 15 Joint Declaration
20	18 <sup>th</sup> Inter-Korean Ministerial Talk	Apr. 21-24, 2006	Pyongyang	Evaluated accomplishments made since the June 15 Joint Declaration, agreed to make proactive efforts to advance inter-Korean relations to a higher level
21	19 <sup>th</sup> Inter-Korean Ministerial Talk	July 11-13, 2006	Busan	Discussion on missile launch, return to Six-Party Talks
22	20 <sup>th</sup> Inter-Korean Ministerial Talk	Feb. 27-Mar. 2, 2007	Pyongyang	Shared a view that the two should normalize inter-Korean relations expeditiously and the relations ought to be upgraded to a higher level
23	21 <sup>st</sup> Inter-Korean Ministerial Talk	May 29-June 1, 2007	Seoul	No real practical discussion

Source: Ministry of National Unification of ROK, <http://eng.unikorea.go.kr/CmsWeb/viewPage.req?idx=PG0000000586> (accessed 2013/10/8), and compiled by the authors.

Humanitarian concerns also play a great role in South Korea's policy with the North. Reunions of separated families, abductee issues, and disaster relief, among others, deeply impacted Lee Myung-bak's policy design vis-à-vis the North. However, North Korea's launch of long range missiles in 2009, together with other belligerent behavior such as the 2010 Cheonan incident, proved once again the shiftiness of North Korea's policy. In other words, trust between the two Koreas becomes an illusion.

In this aftermath, the "Vision 3000" initiative, which contained the ideas of peaceful co-existence and mutual respect, gave way to a new peace initiative: a more comprehensive idea that required the North to abandon nuclear weapons as the first step to build mutual trust between North and South Korea. However, this "New Peace Initiative for the Korean Peninsula" was dead before too long.

The low intensity of the trade relationship together with the North's truculent behavior, made it difficult for both sides to build trust over time. In regards to the economic interaction and incentives for both North and South Korea, however, with the increase of imports from North Korea, this relationship seems lopsidedly in favor of the latter. We argue that a third party such as China needs to be considered. Since China has been the largest trade partner for North Korea over the past ten

Chief Negotiators	Results
Kwon Ho-woong, Jeong Dong-yong	Joint Press Statement, including agreed to give up all face-saving practices and to take practical measures to promote national reconciliation, agreed to take active measures to remove obstacles to economic cooperation and facilitate investment and exchanges between the two sides
Kwon Ho-woong, Jeong Dong-yong	Joint Press Statement, including sharing a view that the Joint Statement of the Fourth Round of the Six-Party Talks should be implemented at an earliest possible date for the denuclearization of the Korean Peninsula, agreed to expand and develop inter-Korean economic cooperation
Kwon Ho-woong, Lee Jong-suk.	Joint Press Statement, including continue their endeavors for the denuclearization of the Korean Peninsula, agreed to make efforts for the national unity, cooperating in an economic field
Kwon Ho-woong, Lee Jong-suk	No Joint Press Statement because South and North Korea failed to reach an agreement
Kwon Ho-woong, Lee Jae-jung	Joint Press Statement, including agreed to resume joint projects in the humanitarian areas and endeavor to practically resolve separated family issues, and agreed to expand and develop economic cooperation for common development and prosperity of the Korean people
Kwon Ho-woong, Lee Jae-jung	Joint Press Statement

years, North Korea has become less motivated to increase trade ties with the South. This makes it even more difficult to nurture the doves in the North who prefer stability on the Korean Peninsula. A lack of doves prevents North Korea from further economic reform.

In addition, societal integration and business negotiations resulting from people-to-people exchanges are less salient in inter-Korean relations. This lack of integration is demonstrated through North Korean refugees in the South. There are thousands of refugees living in South Korea today and they face extremely difficult situations due to their lack of education, severe competition, and some level of discrimination. Also, the cultural similarity between the North and South has widened, which in turn has made the refugees feel like outsiders. Furthermore, a generation of new narratives and identities is difficult to find in Korea as societal integration and cultural exchanges between the two Koreas are lacking — resulting in a vicious, not virtuous circle. Therefore, making stable peace through societal exchanges seems very unlikely for the Korean Peninsula.

Strong political will, as revealed in inter-Korean relations, is not a guarantee to generating peace. In other words, even though South Korea under Kim and Roh initiated *rapprochement* with North Korea, a “politics first, economics later”

approach without strong economic and social ties rendered it very difficult to complete a virtuous circle and futile to sustain a positive inter-Korean relationship.

**Table 1: Major Comparison on Political Issues between Cross-Strait and Inter-Korean Relations**

	Cross-Strait Relations	Inter-Korean Relations
Reason for Separation	Civil war between the Nationalists and the Communists	Confrontation between the U.S. and the Soviet Korean War
Plan for Unification	Prior to 1980, each side was devoted to the extinction of the other. Since the 1980s, peaceful unification has emerged to become a more attractive proposal, while mainland maintains the use of force as the last resort. Since 1996, most Taiwanese people prefer “status quo” instead of immediate unification/independence.	Prior to 1973, each side was devoted to the extinction of the other. Since the 1980s, mutual non-denial. In 1992, both sides reached the agreement for co-existence. In 2000, both sides agreed to seek for common ground for unification.
Positions on International Recognition	Since the late 1980s, Taiwan has pragmatically accepted co-existence between both sides. Mainland China, however, has continued to see itself as the sole legitimate government of China and Taiwan a renegade province.	Both sides have accepted dual recognition since the late 1980s. The concept of “one nation-state” continues and both see inter-Korean relations as a special relationship within the same nation.
Positions on International Participation	Taiwan has accepted co-existence with mainland in major international organization since the early 1990s. Mainland China has continued to reject this idea but begun to accommodate ad hoc arrangements for Taiwan’s meaningful participation in certain organizations since 2008.	Both sides joined the United Nations in 1991.

## LESSONS LEARNED

With the above discussion on cross-Strait and inter-Korean relations, certain similarities can be drawn. Beyond the historical reasons, first and foremost, Taiwan and South Korea are taking the leading role for *rapprochement* in the dyadic relationship with their respective rivals. The backbone to sustain such policy is their strength in economy vis-a-vis mainland China and North Korea. In the past, Taiwan and South Korea were among the Four Tigers, and now the GDP per capita in each country has exceeded \$20,000. Superiority in economic strength seems to be leading the way.

Second, with strength in economy and as full-fledged democracies, both Taiwan and South Korea are willing to reach out to their counterparts. And yet, North Korea has not reciprocated to South Korea as mainland China has done with Taiwan, which makes it difficult to generate a virtuous circle in inter-Korean relations.

Third, the role of the United States is important in ensuring a relatively stable external environment for Taiwan and South Korea to pursue *rapprochement* with their counterparts. Though the U.S. does not formally ally with Taiwan, its indispensable role has been evident in 1995-1996 when mainland China exerted coercion over Taiwan and was at last deterred by the deployment of U.S. aircraft carriers. Both sides of the Taiwan Strait have become more pragmatic ever since. By the same token, the U.S. has assisted South Korea, its ally, in deterring North Korea's truculent behaviors, although these efforts are often compromised by other international parties.

Having said that, differences exist in our close examination of these two cases. First, Taiwan and South Korea have different emphases in dealing with their counterparts. Taiwan adopts an "economics first, politics later" approach, in which economic interdependence comes first and helps consolidate the bilateral relationship across the Taiwan Strait. Also, this approach provides Taiwan's leaders an opportunity to distance themselves if cross-Strait relations do not evolve positively. As illustrated in Figures 1 and 3, in 2004-2005 when mainland China adopted the anti-secession law against Taiwan, most Taiwanese people perceived hostility against Taiwan's government and less to the people, and trade and societal interactions continued to grow.

For South Korea, a "politics first" approach does help to demonstrate the leadership's resolve in forging a peaceful Korean Peninsula, nevertheless, it leaves little to no room for the South to distance itself from the North during times of belligerence. In other words, the "economics first" approach helps Taiwan's leadership to demonstrate flexibility in dealing with mainland China.

Second, how their counterparts respond also differentiates Taiwan from South Korea. Mainland China has prioritized economic development as the chief national task since the late 1970s, therefore when Taiwan reached out to establish trade relations, it became less difficult for the two to reconcile politically. North Korea, however, has yet to demonstrate its willingness to reform economically and politically, which constitutes a great barrier for peace to take root in inter-Korean relations because no "doves" can voice in a repressive political regime.

Besides, Taiwan under the Ma Ying-jeou administration has been striving to institutionalize cross-Strait relations, with economic and societal interactions as the basis to continue *rapprochement*. North Korea, however, has been using interaction as a bargaining chip vis-a-vis South Korea. The North's "on again, off again" attitude on cooperation with the South is leading inter-Korean relations nowhere.

Third, North Korea's development of nuclear weapons makes the U.S. reluctant to support South Korea's policy to the North, especially under the Kim and Roh

administrations. On the contrary, the U.S. expresses appreciation for positive developments over the Taiwan Strait and thus helps the Ma administration in Taiwan to pursue an institutionalized relationship with mainland China.

Economic interdependence, societal interactions with business-like negotiations, and the political will of top leaders to push relations forward, constitute a virtuous circle for peace across the Taiwan Strait. For inter-Korean relations to evolve peacefully, it is important for the South to revise its previous “politics first” approach to an “economics first, politics later” approach. Also, for Taiwan to further institutionalize its relations with mainland China, it should reconsider the political differences over the Taiwan Strait. As opposed to the two Koreas’ pursuit of a unified Korean Peninsula, how to cope with mainland China over political issues in which China maintains a relatively rigid “one China” principle becomes a paramount task for Taiwan. The existence of a virtuous circle is essential to peace over the Taiwan Strait, nevertheless, Taiwan should note that domestic consensus and international support are prerequisites to direct political negotiations with mainland China — an important lesson from inter-Korean relations.

## CONCLUSION

For the time being, cross-Strait relations seem to continue the path for stability, and a virtuous circle composed of economic interdependence, business-like negotiations, and political will between two rivalries is taking root in Taiwan-mainland China relations. This virtuous circle has not yet emerged in inter-Korean relations.

In 2013, President Park Geun-hye declared that she would pursue a relatively modest but pragmatic course to cope with North Korea. With the concept of *trustpolitik*, Park Geun-hye aims to reach out to North Korea with economic aid and cultural contacts and expects goodwill in return. This approach, according to Park, is essential to gradually reshape North Korea’s truculent behavior for the past decades and to ensure peace and prosperity in East Asia. The goal of this approach is twofold: on the one hand, it aims to re-establish economic and cultural ties in exchange for more responsible behavior from North Korea; on the other hand, it can sustain, if not help, President Park’s popularity domestically by punishing the North if the latter decides not to cooperate. “To ensure stability,” Madame Park contended, this approach “should be applied consistently from issue to issue based on verifiable actions.” In other words, South Korea and the international community will closely monitor North Korea’s conduct to make sure it is well intended, and then provide a reward accordingly.

This paper argues that economic interdependence, followed by societal exchanges and business-like negotiations between two rival governments, constitute a necessary condition for *rapprochement*. Nevertheless, the “doves”

as a constituency can give support for political leaders to further stabilize the relationship. From the experience of cross-Strait relations, South Korea may need to make a policy shift. Step-by-step economic and societal exchanges are the foundation, and lower-level official talks might help to generate consensus and to create a larger constituency in both South and North Korea to prioritize stability. From inter-Korean relations, Taiwan shall be advised that in lack of domestic and international support, it would be premature for high-level talks or summit meetings across the Taiwan Strait.

## ENDNOTES

- <sup>1</sup> E.g. Michael Doyle, "Liberalism and World Politics," *American Political Science Review* 80:4 (December 1986), pp. 1151-1169; Bruce Russett and John Oneal, "The Classic Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985," *International Studies Quarterly* 41:2 (June 1997), pp. 267-294.
- <sup>2</sup> Richard Rosecrance, *The Rise of the Trading State: Commerce and Conquest in the Modern World* (NY: Basic Books, 1986); and "A New Concert of Power," *Foreign Affairs* 71:2 (Spring 1992), pp. 64-82. We should point out that Rosecrance's argument is actually originated from the Cobden-Angell thesis that was first made popular in the 1850s and then prior to WWI. Also see Michael Doyle, *Ways of War and Peace: Realism, Liberalism, and Socialism* (NY: WW Norton & Company, 1997), ch. 8. For more refined views on whether trade could promote peace, see Edward Mansfield and Brian Pollins, eds., *Economic Interdependence and International Conflict: New Perspectives on an Enduring Debate* (Ann Arbor: U of Michigan, 2003), pp. 207-221.
- <sup>3</sup> For how trade affects international relations in Asia, see James Richardson, "Asia-Pacific: The Case for Geopolitical Optimism," *National Interest*, no. 38 (Winter 1994/95), pp. 28-39.
- <sup>4</sup> Miles Kahler and Scott Kastner, "Strategic Uses of Economic Interdependence: Engagement Policies on the Korean Peninsula and Across the Taiwan Strait," *Journal of Peace Research*, Vol. 43, No. 5 (2006), pp. 523-541.
- <sup>5</sup> Hyug-baeg Im and Yu-jeong Choi, "Inter-Korean and Cross-Strait Relations through the Window of Regional Integration Theories," *Asian Survey*, Vol. 51, No. 5 (2011), pp. 785-811.
- <sup>6</sup> Hyug-baeg Im and Yu-jeong Choi, "Inter-Korean and Cross-Strait Relations through the Window of Regional Integration Theories," *Asian Survey*, Vol. 51, No. 5 (2011), pp. 785-811.
- <sup>7</sup> Steve Chan, Richard Hu, and Injoo Sohn, "Politics of Detente: Comparing Korea and Taiwan," *The Pacific Review*, Vol. 26, No. 9 (2013), pp. 199-220.
- <sup>8</sup> It should be noted here that the doves may be domestic constituencies, or the third party such as another country who also favors and benefits from a stable cross-Strait relationship.
- <sup>9</sup> A caveat here is that *rapprochement* does not always come without a cost. Some people are skeptical of China's growing economic and political cloud over Taiwan, in the sense that Taiwan's economy is being hollowed-out while international participation being dependent on China's goodwill. How to manage these possible side effects is crucial to Taiwan's top leaders now and for the years to come.

# LUXURY GOODS IN NORTH KOREA: TANGIBLE AND SYMBOLIC IMPORTANCE TO THE KIM JONG-UN REGIME

Soo Kim

## ABSTRACT

North Korea's adherence to self-sufficiency has its foundations in the country's *juche* ideology, meaning a spirit of self-reliance. The *juche* spirit still lives on in the DPRK, but stubbornly so, as the regime over the past several decades has confronted the limitations of being a truly self-reliant country, faced declining economic and humanitarian conditions, and has become increasingly isolated from the rest of the world. Pyongyang's insistence upon its own terms in diplomatic engagements and provocative behavior have further isolated the country, and very few countries are willing to cooperate with the DPRK, for doing so would cost their own reputations.

Consequently, North Korea pursues illicit avenues to fund the lavish lifestyle of its leader, develop its weapons programs, and strengthen the elite's allegiance to the Kim regime. One such way the Kim Jong-un regime achieves these aims is through the acquisition of luxury goods. High-end items, such as wine, liquor, jewelry, and automobiles are acquired through third-party countries to fulfill Kim's penchant for luxury goods and buy the loyalty of North Korean elites. The international community is aware of the regime's dependence upon these items. As a result, sanctions have been imposed to restrict the North's access channels to luxury products and curtail its provocative behavior. The effectiveness of sanctions has been debated, for they often lack consistency in definition and application among participating countries. Yet, due to their symbolic value as punitive measures and potential to be more effective with proper application, there is still value in implementing sanctions.

**Key words:** *luxury goods, North Korean leadership, sanctions, elite loyalty, China*

## BACKGROUND

North Korea's self-proclaimed, unswerving adherence to self-sufficiency has its foundations in the country's *juche* ideology, meaning a spirit of self-reliance. The spirit of *juche* still lives on in the Democratic People's Republic of Korea (DPRK), but stubbornly so, as the regime over the past several decades has confronted the limitations of being a truly self-reliant country, faced declining economic and humanitarian conditions, and has become increasingly isolated politically from the rest of the world. What had once been a self-imposed ideological conviction is now a reality that the North is forced to accept. Pyongyang's insistence upon its own terms in diplomatic engagements and provocative behavior have further isolated the country. Yet the North has shown very little unequivocal signs of wanting to change its course. For abandoning the *juche* philosophy would mean the regime's ineluctable opening of the country to the rest of the world, and the North would have to consider the terms of the United States, South Korea, and other like-minded countries—probably a last-resort move the Kim regime would try to avoid making at all costs. The DPRK most likely will not accept regime change by the international community's terms in the foreseeable future. Yet the state of the country renders it difficult for the regime to be truly self-sufficient. Very few countries are willing to cooperate, trade with or openly support the DPRK, for doing so would cost their own reputations, a risk they are hesitant or unwilling to take.

Consequently, the North Korean government pursues illicit avenues to satiate the appetites of its top leaders, continue to develop Pyongyang's weapons programs, obtain currency, and strengthen the elite's allegiance to the Kim regime. One such way the Kim Jong-un regime achieves these aims is through the acquisition of luxury goods. High-end items such as caviar, wine, liquor, jewelry, and automobiles are acquired through third-party countries to fulfill Kim's penchant for luxury goods and bribe the upper echelons of North Korean leadership to maintain their loyalty to the Kim regime. North Korean elites have no trouble acquiring these goods as long as they have the money to purchase them. The international community has become increasingly aware of the DPRK's surprisingly easy access to these goods, as well as the regime's dependence upon these items to maintain stability and further its political objectives. As a result, sanctions have been imposed on several occasions, both at the multilateral and bilateral level, to restrict Pyongyang's access channels to luxury products and curtail the regime's provocative behavior. The effectiveness of sanctions has been debated by many North Korea watchers, for these regulations often lack consistency and uniformity in definition and application among participating countries. Yet, because there is still a symbolic messaging value in these punitive measures as well as the potential for sanctions to be more effective with the proper application and participation from countries crucial to clamping down on the North Korean regime, there is still value in implementing and applying sanctions.



## A DELINEATION OF “LUXURY GOODS”

To make its restrictions and sanctions policy vis-à-vis North Korea clearer to both the participant countries and Pyongyang, the international community set out to define what constitutes as a luxury good. The United Nations approved Security Council Resolution 2094 (UNSCR) in response to the DPRK’s February 12, 2013 nuclear test to strengthen and expand its existing sanctions against the North by targeting the illicit activities of diplomatic personnel, transfers of bulk cash, and North Korea’s finance relationships. The resolution prevents the provision of financial services or other assets and resources to North Korea, its entities and individuals that could contribute to the North’s nuclear and ballistic missile programs or other prohibited activities.<sup>1</sup> It also imposes a travel ban and asset freezes on named North Korean entities deemed the primary arms dealer and main exporter of goods and equipment related to ballistic missiles and conventional weapons.<sup>2</sup>

More importantly for the scope of this paper, UNSCR 2094 delineates and defines “luxury goods.” It clarifies that the term includes but is not limited to the following items specified in the annex: jewelry, including jewelry with pearls, gems, precious and semi-precious stones (e.g., diamonds, sapphires, rubies, emeralds), and jewelry of precious metal or of metal clad with precious metal; and transportation items, including yachts, luxury automobiles and motor vehicles to transport people, station wagons, and racing cars.

In addition to imposing UN sanctions against the North, many individual countries have adopted their own measures to express disapproval of Pyongyang’s course of actions and policy. In August 2010, as a response to the DPRK’s sinking of the South Korean navy corvette *Cheonan*, the Obama administration signed Executive Order 13551, which targets the DPRK’s arms imports and exports, imports of luxury goods, counterfeit currency, money laundering, and narcotics trafficking.<sup>3</sup> The U.S. Code of Federal Regulations (CFR) enumerates items that are subject to a policy of denial in exporting or re-exporting to the North. As defined by the CFR, the U.S. has banned the following luxury goods from going into North Korea: luxury automobiles; yachts; gems; jewelry; other fashion accessories; cosmetics; perfumes; furs; designer clothing; luxury watches; rugs and tapestries; electronic entertainment software and equipment; recreational sports equipment; tobacco; wine and other alcoholic beverages; musical instruments; art; and antiques and collectible items, including but not limited to rare coins and stamps.

In 2011, Canada imposed sanctions (Special Economic Measures Regulations) against North Korea under its Special Economic Measures Act (SEMA) to send the message that Pyongyang’s aggressive behavior is unacceptable. The SEMA prohibited any person in Canada any Canadian outside the country from knowingly directly or indirectly exporting, selling, supplying, transferring or shipping arms and related material, resources contributing to the North’s weapons program and

luxury goods.<sup>4</sup> Canada defines luxury goods as jewelry, gems, precious metals, and watches; cigarettes, alcoholic beverages, perfume, designer clothing and accessories, furs, sporting goods, and private aircraft; lobster and gourmet foods and ingredients; computers, television and other electronic devices.<sup>5</sup> The UN and individual countries' definitions of luxury goods banned to North Korea aims to restrict the regime's access to these items. Recent reports indicate, however, that Pyongyang is still able to acquire these goods.

**Table 1: Definition of Luxury Goods**

	"Luxury Goods" defined as...
United Nations Security Council Resolution 2094	pearls, gems, precious and semi-precious stones, jewelry of precious metal or of metal clad with precious metal, transportation items, including yachts, luxury automobiles and motor vehicles to transport people, station wagons, and racing cars <sup>1</sup>
United States Code of Federal Regulations	luxury automobiles, yachts, gems jewelry, luxury watches, fashion accessories, cosmetics, perfumes, furs, designer clothing, rugs, electronic entertainment software and equipment, recreational sports equipment, tobacco, wine and other alcoholic beverages, musical instruments, art, antiques and collectibles <sup>2</sup>
Canada's Special Economic Measures Regulations	jewelry, gems, precious metals, and watches, cigarettes, alcoholic beverages, perfume, designer clothing and accessories, furs, sporting goods, and private aircraft, lobster and gourmet foods and ingredients, computers, television and other electronic devices <sup>3</sup>

1. Security Council Resolution 2094. United Nations Security Council. 7 March 2013. Accessed 2 December 2013.

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## NORTH KOREAN LEADERS' LAVISH LIFESTYLES

The North Korean regime has had a robust appetite for luxury goods since the late Kim Jong-il was designated successor to his father Kim Il-sung in the 1970s. Kim Jong-il created Office 39, a secret organization that served as a repository to generate slush funds for Kim's personal use. Kim used the funds generated through Office 39 for developing weapons of mass destruction, constructing idolization monuments and buildings throughout North Korea, maintaining elite loyalty, and fulfilling his penchant for luxury items. Fujimoto Kenji, Kim's longtime sushi chef, said that Kim had a predilection for cognac and other expensive European alcohol and wines, Iranian caviar, melons and grapes from China, sushi, and shark fin soup.<sup>6</sup> Kim reportedly also owned six luxury travel trains that included conference rooms, satellite phones, and flat-screen TVs.<sup>7</sup>

Kim's youngest son, Kim Jong-un, was considered the North's heir apparent in 2010 and succeeded his father following the elder Kim's demise in December

2011. The 30-year-old leader spent several of his formative years abroad, having attended the International School of Berne, a boarding school fifteen minutes away from the capital of Switzerland. At the English-language school, Kim befriended the children of American diplomats and learned to speak French and German.<sup>8</sup> He was also reportedly an avid fan of the NBA, idolizing basketball players such as Michael Jordan, loved skiing, and spoke highly of actor Jean-Claude Van Damme.<sup>9,10</sup> In accordance with his age, the young Kim projected a more modern, Western lifestyle to the public in his first year as the country's leader. Alongside Kim appeared his wife, Ri Sol-chu, on some of the leader's public outings. The North's first lady wore Western-style clothing and was even spotted carrying a Christian Dior bag in one of her public appearances.<sup>11,12</sup> The lavish lifestyle of Kim and his wife had been equally the focus of attention and point of criticism for many Korea watchers, as they noted the salient contrast between Kim's lavish lifestyle with the poverty and hunger confronting the average North Korean.

It appears that Kim Jong-un has not only inherited his father's penchant for luxury goods, but the young Kim's decadent lifestyle may well surpass that of Kim Jong-il's. In October, South Korea's ruling party lawmaker Yoon Sang-hyun released an analysis that examined Pyongyang's import of luxury goods between 2010 and 2012. According to the analysis, under the Kim Jong-un regime, North Korea's import of luxury items surged every year, from \$446 million in 2010 to \$584 million in 2011 and \$645 million in 2012.<sup>13</sup> The North's tally of imports in 2012 was more than twice the average under Kim Jong-il, which totaled approximately \$300 million per year.<sup>14</sup>

An examination of UN and Chinese trade data in 2012 revealed a significant increase in the export of cars, tobacco, laptops, cellphones, and domestic electrical appliances to North Korea over a five-year period.<sup>15</sup> According to Representative Yoon, the value of North Korea's luxury imports in 2011 was enough to buy 1.96 million tons of wheat.<sup>16</sup> Imports of cell phones had risen by more than 4200 percent. In the South Korean National Assembly's analysis, the most popular items to be imported to North Korea included liquors, such as scotch and wine, electronic devices, perfumes, cosmetics, fur coats and luxury items.<sup>17</sup> The North also imported expensive pet dogs and pet supplies, European and U.S. baby products, and German-made sauna facilities. From China alone, the North imported \$519,402 worth of caviar and roe in 2012—almost a 50-fold increase in volume from the previous year.<sup>18</sup> Pyongyang also imported carpets worth \$448,728, 33 times higher than in 2011.<sup>19</sup> The DPRK imported 661.7 kilograms of silver worth \$653,128 dollars from China this January; observers speculate the regime may have used the silver as presents for Kim Jong-un's birthday on January 8. Kim has also imported scores of Chinese Shih Tzu dogs.<sup>20</sup> In 2011, shipments of luxury cars were reported at over \$230 million.<sup>21</sup> Kim reportedly uses a Mercedes-Benz GL-Class sport-utility vehicle when he goes on his inspection tours throughout the country.<sup>22</sup>

In addition to importing luxury items, the North Korean regime has vigorously pursued the construction of recreational and leisure facilities, most likely for Kim's enjoyment purposes. The young leader is an avid sports fan and enjoys throwing parties. Since September 2010, when Kim Jong-un was designated successor to his father, North Korea has been constructing new villas or expanding existing ones. For instance, Kim Jong-un's office "Official Residence Number 15" in central Pyongyang has been torn down and a new building is being constructed in its place. Because the location is where Kim's mother, Ko Yong-hui had lived, and also where Kim resided during his youth, it can be inferred that the new building will most likely be intended for Kim's personal use.<sup>23</sup> North Koreans have also deconstructed Kim Jong-il's personal villa, imported building materials from abroad, and begun constructing a new vacation house that includes banquet halls and villas. In Kim Jong-un's personal villas, he has built docks from which he could sail yachts and go jet skiing.<sup>24</sup> Pyongyang has also imported equipment to produce artificial snow for the leader's ski resorts.<sup>25</sup> The South Korean press reports that in 2012, North Korea entered into negotiations to acquire some high-end European luxury yachts priced at approximately \$10 million each. Between 2009 and 2010, North Korea imported a dozen Italian jet skis. In Kim's vacation house in Kangdong County, the North Koreans constructed a new banquet hall and horse race tracks, and invited Chinese and Russian architects to build an ice rink and indoor gym. Recently, North Korea has imported dozens of special Russian horses for Kim. Pyongyang has also imported sauna equipment from Finland and Germany, possibly to "help him beat hangovers and fatigue" from late night partying.<sup>26</sup>

## AN INSTRUMENT TO SOLIDIFY KIM'S POWER GRIP

In the case of Kim Jong-il, luxury goods were acquired to satisfy Kim's decadent lifestyle, construct monuments idolizing the leadership, reward his supporters, and fund the country's weapons programs. What about his son, Kim Jong-un?

With barely two years of experience leading the country, the 30-year-old Kim is young and lacks credible experience as a leader. Though he is the *de facto* leader of North Korea, Kim most likely relies on some of the officials from Kim Jong-il's rule for support and guidance. The majority of the North's old guard is several decades older than the young Kim; many of them are contemporaries and colleagues of his father. As a result, there is a generational gap that separates Kim and the Party and military elites ideologically and practically. Kim has also had exposure to the outside world in his formative years, which, to a certain extent, may have shaped his views on his country, its people, and relations with foreign countries. In any country, it is important for the leader to maintain a close network of supporters and affiliates to assert his leadership and ensure success of his policy goals. In North Korea, where allegiance to the leadership is crafted around a cult

of personality, dissent is not tolerated, and the leader wields absolute, seemingly undisputed control, the support of his cronies and the top echelons of the Party, military, and government is especially important to the leader's longevity and maintaining of power. And for Kim Jong-un, a young and inexperienced leader, loyalty from the top ranks in the Party and military is particularly crucial to ensuring a strong grip of the country. He may therefore place greater emphasis on securing his leadership in the first years of his rule by way of "buying off" the support of the older, more experienced high-ranking Party and military officials with expensive gifts.

The Kim Jong-un regime imports luxury goods for Kim's personal use, just as his father Kim Jong-il did during his rule. However, given Kim's recent assumption of rule and the lack of a solid power base around him, it is likely that luxury goods are of political import for the new leader. Kim is using these expensive items as gifts for the country's elites. One foreign official who visited North Korea in April 2012 said the regime appeared to be focusing more efforts on pampering the elites, with luxury items from Japan and the construction of high-rise condominiums for the privileged classes.<sup>27</sup> Kim has also spent money on parties for the North's high-ranking officials and purchased expensive products to buy their loyalty. For example, Kim gave Yamaha electronic violins and cellos to the North's all-female Moranbong Band.<sup>28</sup> Elite support had been an important fixture to regime survival during both Kim Il-sung and Kim Jong-il's rules, but it is even more important for Kim Jong-un, as he tries to show both the international community and the North Koreans that he is in charge of the country.

## DEALING WITH NORTH KOREA THROUGH SANCTIONS

The international community is well aware of the North Korean leadership's predilection for luxury items and the regime's dependence on these goods to encourage elites to remain loyal and supportive of the Kim leadership and generate revenue that is used to finance Pyongyang's illicit activities and programs. It understands both the tangible and political value luxury items hold for North Koreans and the Kim Jong-un leadership – no matter how dismal the national economy may be, the upper echelons of North Korean society will be able to access and obtain these expensive items. So long as Kim intends on securing and maintaining his power grip of the country and preventing an outbreak against his leadership, he will continue to rely on the support and loyalty of the North's Party and military elites, and he will obtain their support by lavishing them with gifts and rewards. Luxury goods will remain an important fixture to the Kim regime's survivability.

The United States and the United Nations are at the forefront of promulgating punitive, restrictive measures against the Kim regime in the form of sanctions. These sanctions are the international community's responses to the North's

provocative behavior, namely, the Kim regime's nuclear and missile tests. The United Nations Security Council Resolution (UNSCR) 1718, for example, was passed following the North's October 2006 nuclear test. As demonstration of the international community's condemnation of the nuclear test, the resolution prevented an enumerated list of goods from entering and leaving the DPRK, imposed an asset freeze and travel ban on individuals related to the nuclear program, and prohibited the provision of large-scale arms, nuclear technology and training, and luxury goods to the communist country.<sup>29</sup> Similarly, the UNSC responded to the North's May 2009 nuclear test, December 2012 satellite launch, and February 2013 underground nuclear test with tightened sanctions aimed to put a chokehold on any activities and transactions funding North Korea's illicit behavior or strengthening the Kim regime.

Most recently, the UN in March 2013 approved Resolution 2094, which, much like the preceding resolutions, condemned the North's nuclear test but also included tougher financial measures in an attempt to curb Pyongyang's nuclear activities. UNSCR 2094 imposed travel bans and asset freezes on individuals and entities responsible for exporting goods and equipment related to ballistic missiles and conventional weapons and the research and development of advanced weapons systems.<sup>30</sup> The resolution increased the number of individuals and entities subject to these travel bans and asset freezes and for the first time established a common definition of "luxury goods" by providing examples of banned items, including yachts, racing cars, expensive automobiles, and several types of gems and jewelry.<sup>31</sup> Prior to the passage of UNSCR 2094, each country was responsible for deciding its own definition of luxury items that were banned to North Korea.

## EFFICACY OF SANCTIONS IN CURBING THE NORTH'S BEHAVIOR

For all intents and purposes, sanctions are penalties enforced by the international community to provide incentives for the state or entity to obey international norms and regulations. In the case of North Korea, international sanctions are designed to restrict the country's access to funds and goods that enable the regime to maintain stability, pursue, develop, and proliferate weapons of mass destruction, and encourage the extravagant lifestyle of the leadership. Declaring and enforcing sanctions on Pyongyang have been the routine practice of the United States, United Nations, and other states that have an interest in safeguarding international security conditions and preserving peace.

Though sanctions send a message of disapproval vis-à-vis North Korea's chosen behavior, their efficacy as an instrument to curb or prohibit Pyongyang from perpetuating its actions and incentivize the regime to abide by international norms has been debated among North Korea watchers. Through loopholes, North Korea has been able to circumvent these punitive measures. A June 2011 visit to

Pyongyang by a group of U.S.-based researchers found that despite the imposition of the 2009 sanctions on the DPRK, North Koreans had no trouble acquiring luxury items and electronics. The visitors remarked on the number of luxury foreign cars traveling on the roads in Pyongyang—including BMWs, Mercedes-Benz, and Lincoln Continentals—as well as their newness.<sup>32</sup> Several new Hewlett-Packard and Dell computers were seen in the country's academic and research institutions, and factories were using modern machinery and equipment imported from Europe and Japan.<sup>33</sup>

Furthermore, sanctions do not appear to have had much negative impact on North Korea's trade with foreign countries. According to Chinese customs data, Beijing in 2012 exported \$77.5 million worth of pearls, precious metals and coins to Pyongyang, and \$266.9 million worth of sound and television equipment—more than triple the amount it exported in 2007.<sup>34</sup> The European Union's exports to North Korea totaled approximately 45 million euros in 2012, up from 42 million euros in 2011.<sup>35</sup>

The adoption of UNSCR 2094 was initially speculated to deal a substantial blow to the North Korean economy. The resolution, by obligating UN member states to crack down on the North's financial transactions and inspect cargo suspected of carrying prohibited WMD-related items, was expected to inflict damage on Pyongyang's trade relations and weigh on its missile and nuclear ambitions. Yet international media reported the sanctions having little adverse impact on the North's financial transactions and access to luxury goods from abroad. In late March, shortly after the adoption of UNSCR 2094, international press reported the extent of shopping by North Koreans in Beijing. It indicated that North Koreans—the elites, in particular—did not have any difficulties acquiring televisions, cameras and perfumes from stores near the North Korean embassy in Beijing.<sup>36</sup> Sources living close to the North Korea-China border said they had not observed or heard of tighter measures on the North's access to luxury goods since the sanctions were announced.

The actual effectiveness of sanctions in changing the North's behavior or cutting off the regime's access to luxury items may not be apparent or significant, but it is one way for the international community to convey a message of disapproval and attempt to gradually change the course of Pyongyang's actions. The international community may not be able to alter North Korea's calculus through these sanctions and restrictions within an envisioned timeline – sanctions are not a short-term solution for the North Korea dilemma. However, there is an understanding that sanctions on luxury items demonstrate the community's awareness of the value the regime places on these goods to fund its illicit programs and strengthen Kim's power base. As long as the regime depends on these goods for survival, the international community will most likely go after Pyongyang's avenues for accessing these products.

## BEIJING'S STANCE MATTERS

The international community's concerted efforts to restrict North Korea's access to financial assets and luxury items are, without a doubt, necessary in sending the DPRK an unequivocal message of intolerance toward its behavior and chosen policy path. The United States and the UN have been at the forefront of imposing these sanctions and punitive measures against the North, but what about China's stance? Clearly, as much as the efforts of the US and UN have helped mobilize a collective, unified approach with Pyongyang, and as much as their involvement is crucial to sending a clear message to the DPRK, China also has an important role to play in negotiating with the Kim regime. For one, China and North Korea share an intimate bond since the Korean War days. Beijing-Pyongyang ties are so close, the two countries frequently allude to the relationship as being intimate as "lips and teeth." Despite small ruptures in bilateral relations in recent years, North Korea still regards China as its biggest economic and political support. Beijing supplies Pyongyang with almost all its fuel and more than 83 percent of its imports, ranging from heavy machinery to grain and consumer goods.<sup>37</sup> It is North Korea's largest trading partner, with DPRK-PRC two-way trade totaling approximately \$1.3 billion in the first three months of this year.<sup>38</sup> In 2012, trade between the two countries totaled around \$6 billion.<sup>39</sup> Trade with China makes up almost 62 percent of North Korea's imports.<sup>40</sup>

Pyongyang manifestly reaps economic and political benefits by maintaining close ties with Beijing. China, too, has political interests in backing the Kim regimes. For one, China's support for the DPRK serves as a bulwark against U.S. and South Korean political interests. As China views the U.S. as its archrival, it will have a political, economic, and security interest in balancing or thwarting U.S. influence in the East Asia region by propping up the North Korean regime. Additionally, it is in Beijing's interest to maintain regional stability; the enforcement of strict policies toward the North could potentially induce Pyongyang to pursue provocative, destabilizing means to get what it wants. China has, for the most part, nominally echoed international voices condemning North Korea, but it has stopped short of imposing practicably harsh sanctions and punitive measures against Pyongyang. Beijing's hesitation to fully cooperate with world efforts to handle the North has been a perennial issue of criticism by the international community. For instance, China had been criticized for failing to publish a list of items it sanctioned under the UNSCR 1718 in 2006 and for a lax implementation of the sanctions compared with other countries. Beijing will notionally agree with the Security Council's decisions, but do nothing to actually implement the sanctions.

China's response to the North's December 2012 nuclear test, however, runs counter to its usual practice of extending nominal support for international punitive measures against Pyongyang's bad behavior, suggesting it is sincere in meeting its commitments to cooperate with the international community's efforts



to be less tolerant of the DPRK's actions. In addition to supporting UNSCR 2094, China began cracking down on the North shortly after the passage of the resolution by cutting back on exporting seafood to Pyongyang and the number of freight forwarders for cargo passing into North Korea through Dalian from around twenty to two.<sup>41</sup> The reduction in freight forwarders shrank the number of cargo ships that enter North Korea from Singapore from seven to three. Chinese authorities also attempted to curb the North's illegal money laundering activities by putting the brakes on the operations of the Beijing and Dandong offices of several North Korean banks.<sup>42</sup> In May, the state-run Bank of China announced it would be ending all dealings and shutting down its account with North Korea's Foreign Trade Bank.<sup>43</sup> In September, China published a list of weapons-related technology and products banned from export to North Korea because of the potential for these materials to be used in building nuclear, chemical and biological weapons as well as long-range missiles.<sup>44,45</sup> The U.S., South Korea, UN, and other parties intent on changing the course of North Korean behavior have viewed the change in China's stance with cautious optimism.

## RECOMMENDATIONS

Patently, North Korea's unwillingness to cooperate under international norms and access to luxury goods and assets to sustain the Kim regime cannot be curbed or discouraged through one swift action or policy, no matter how concerted the efforts of the involved parties may be. It should be underscored that the international community's handling of the DPRK's luxury goods issue yields repercussions on other North Korea-related issues, ranging from Pyongyang's leveraging power vis-à-vis contentious foreign policy dilemmas such as its nuclear and missile programs, to the viability and stability of the Kim regime and the DPRK's economic conditions. Devising economic sanctions and other punitive measures that successfully tighten the North's access to luxury goods may therefore help to weaken the Kim regime, as it runs low on funds and high-quality items with which it could bribe officials and reward those who have successfully accomplished the North's foreign policy and security goals. The weaker and lackluster the elite support for Kim, the less maneuverability the young leader has in both pushing forward his domestic and foreign policy objectives. On the other hand, ineffective handling of the issue would not only create loopholes for the DPRK and do very little to curb the regime's bad behavior, but it could also bolster Kim Jong-un's confidence to play in the international field on his terms.

The efficacy of economic sanctions in punishing the North is demonstrably debatable. On the one hand, sanctions send Pyongyang a message that the international community disapproves of its behavior and to a certain extent incentivizes the regime to moderate its aggression. As symbolic and nominal the actual effects of the sanctions are, they do contain a messaging value. On the other hand, sanctions appear

to be more effectual at certain points than others. For instance, a clear definition of prohibited luxury goods denies Pyongyang access to specific items. Specifying the items banned to the North and individuals and companies to be boycotted not only makes the sanctions more palpable to the regime, but it also sends a message to the DPRK of the international community's seriousness in its intent to punish the North's bad behavior and illicit practices. Furthermore, member countries should go beyond nominally supporting international sanctions against Pyongyang, but, as the United States and in recent months China has done, take direct, concrete steps to targeting specific behavior, individuals, and entities. The more palpable the effects of the sanctions are to Pyongyang, the more seriously it will take these international condemnatory measures.

The international community should take both multilateral and bilateral approaches to condemn the North's behavior. A multilateral approach combines the strengths and interests of numerous countries to send a powerful message to Pyongyang that it is not a single country that is refusing to condone the DPRK's actions, but rather a bevy of like-minded states and entities intent on changing the North's behavior. Bilateral approaches, on the other hand, indicate that the individual country disapproves of Pyongyang and will take direct, confrontational measures to punish the North.

China's role is clearly important in this. As the North's longstanding ally and source of political and economic support, Beijing's policy vis-à-vis Pyongyang could determine dramatically different outcomes. Should China decide to take a weaker approach with the North by nominally supporting international efforts to punish Pyongyang, the Kim regime may become more emboldened, as it interprets Beijing's actions as a tacit sign of support or approval. But if Beijing takes a clear stance in echoing the international community's stern approach by taking concrete measures to curb North Korea's provocative acts, Pyongyang could perceive its biggest ally as withdrawing support for the Kim regime. This is not to say that China is North Korea's single viable ally; however, as Pyongyang's biggest and most reliable neighbor, Beijing's refusal to tolerate the North's policies and illicit activities could send a strong message to the latter to reconsider taking the path that would further isolate the regime.

In view of the fact that there is no one-stop, end-all solution to the North Korean dilemma, the US, UN and the international community should continue to pursue multilateral and bilateral solutions and send a clear, direct and stern warning of punishment to the North with palpable consequences to its political and economic future. Furthermore, as China's close relationship with the DPRK is of import in determining Pyongyang's response, the international community should make concerted efforts to encourage Beijing's greater participation in these efforts.

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