Korean Road to Developing Intermodal Transport System

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Contents

Part I  S. Korea and the international transport networks

Part II  Current policy driver: Eurasia Initiative

Part III  S. Korea’s efforts: Projects & Proposals

Part IV  Implications
Part I. S. Korea and the international Transport networks
1. South Korea’s place in the NEA

1.1. Geostrategic position: Korea Land Bridge vs *De facto* island

- The Korean Peninsular located at a crossroad in Northeast Asia
- A land bridge between land powers and sea powers (China, Japan, Russia, …US)
- Political division: *De facto* island country since 1945

Source: GTI, 2013
1. South Korea’s place in the NEA

1.2. Geo-economic position : in the heart of global production networks

- GDP: the 15th largest in world economy
  * Top 3 container exporter (with China, the United States) in “the strongest trade route”
  * Top 5 (’14): China (36.2%), United States (12%), South Korea (6.0%), Japan (5.3%), Indonesia (4.2%)

- The 7th largest among world’s top 10 manufacturers (2010) - * transport/logistics

World Top 10 manufacturers

<table>
<thead>
<tr>
<th>Rank</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United states</td>
<td>✓ China</td>
</tr>
<tr>
<td>2</td>
<td>✓ Japan</td>
<td>United States</td>
</tr>
<tr>
<td>3</td>
<td>✓ China</td>
<td>✓ Japan</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>Germany</td>
</tr>
<tr>
<td>5</td>
<td>United Kingdom</td>
<td>Italy</td>
</tr>
<tr>
<td>6</td>
<td>Italy</td>
<td>Brazil</td>
</tr>
<tr>
<td>7</td>
<td>France</td>
<td>✓ South Korea</td>
</tr>
<tr>
<td>8</td>
<td>✓ South Korea</td>
<td>France</td>
</tr>
<tr>
<td>9</td>
<td>Mexico</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>10</td>
<td>Canada</td>
<td>✓ India</td>
</tr>
</tbody>
</table>

Source: United Nations and MAPI

Note: Imports: immediate goods, exports: finished products
1. South Korea’s place in the NEA

1.2. (2) Geo-economic position: energy resources and trade

As one of the greatest energy-thirsty countries, S. Korea will remain top 5 energy importers - ‘10: the 4th (crude oil), the 3rd (coal), and the 2nd (natural gas) country in the Asia-Pacific R.

Russia’s role is recently increasing in S. Korea’s supply of energy resources in NEA

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### Top 5 coal exporters to S. Korea

<table>
<thead>
<tr>
<th>Country</th>
<th>Volume (mil.t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Australia</td>
<td>46.7</td>
</tr>
<tr>
<td>2 Indonesia</td>
<td>36.4</td>
</tr>
<tr>
<td>3 Russia</td>
<td>13.5</td>
</tr>
<tr>
<td>4 Canada</td>
<td>12.9</td>
</tr>
<tr>
<td>5 US</td>
<td>6.1</td>
</tr>
</tbody>
</table>


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### Top five importers and exporters by energy resources in Asia and the Pacific, 2010 (ktoe)

Source: Korea Customs Service, 2014
2. Changing transport networks in NEA

2.1. China: “One Belt, One Road Strategy” - main concept

“To develop wealth, you have to first build roads”

- One belt: new silk road economic belt (proposed by P. Shi during his visit to Kazakhstan. Sept. 2013)
- One road: 21st C. maritime silk road (proposed by P. Shi during his visit to Indonesia. Oct. 2013))

Five Main points for international cooperation

- policy coordination, infrastructure, trade, financing, human & cultural exchanges
- infrastructure: energy, transport (roads, railroads, high-speed railroads, ports etc)

Part I.S. Korea and the int. transport networks
2. Changing transport networks in NEA

2.2. China: “One Belt, One Road Strategy” - transport Infrastructure & AIIB

- “One belt, one road” means mega projects & investments for infrastructures
  - **Onebelt**: ex). roads, highways, railroads, high-speed railroads, pipe line etc. construction & upgrading
  - **Oneroad**: ex). port/terminal, multi- & inter- modal transport facilities..etc. construction & upgrading

- For supplying funds, AIIB was founded in June 29, 2015
  - with 57 founding member countries & US 100 billion dollars (capital stock)

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**AIIB: founding member countries**

Note: countries in blue including US and Japan did not join the AIIB.

Source: Yonhapnews, April 15, 2015

**AIIB: shares & structure**

- China: 7.51%
- India: 5.93%
- Russia: 4.15%
- Germany: 3.5%
- S. Korea: 3.46%
- Australia: 3.19%
- France: 3.17%
- Indonesia: 3.02%
- Brazil: 2.91%

*Can be reduced to 70% if AIIB expands

**Structure**

- **Board of governors**
- **Board of directors (BOD)**
- **Management**

Source: South China Morning Post, June 30, 2015
2. Changing transport networks in NEA


- Russia aims to fully integrate into Asia-Pacific R.
  - by developing Siberia and the Russian Far east (Russia’s window to Asia”)
  - exploiting its vast area, resources, etc. (“FE & Baikal Socio-Economic Development Strategy 2025”)

- For the purpose, Russia is implementing a number of huge transport infra projects
  - Ex) “Russian transport development project 2030”, TSR/BAM improvement, port developments, etc
Part Ⅱ. Current policy driver: Eurasia Initiative
1. Eurasia Initiative: main concept

1.1. Background

- October 2013. President Park proposed the “Eurasia Initiative”
- December 2014. S. Korean government approved the “E. I” as one of its national proposal

1.2. Vision

- “New era of Eurasia with co-prosperity” (One Eurasia, Creative Eurasia, Peaceful Eurasia)
- By building 3 networks: transport/logistic, digital, and “Korean Wave” networks

Vision

New era of Eurasia with co-prosperity

Transport/logistics Network  Digital Network  Korean Wave Network

Goal

Promoting regional investments, open economic integration

Direction

Clarifying cooperation objectives, programs & projects
Selection and concentration, issue linkages
1. Eurasia Initiative: main concept

1.3. Four main areas & strategies

- 1. **Transport/Logistics**: building transport infrastructure, industrial complexes (including hinterlands)
- 2. **Industries & trade**: expansion of trade & investments, improvement of invt. environment
- 3. **Agriculture & fisheries**: joint development in agriculture & fisheries sectors
- 4. **Energy and resources**: securing long-term energy supply and transportation stability

1.4. Three main cooperative actions for 4 main areas

<table>
<thead>
<tr>
<th>Economic cooperation networks</th>
<th>Building cooperation regional bases</th>
<th>Fostering cooperation foundation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• multi transport/logistics networks</td>
<td>• Central Asia, Russia, Mongol etc.</td>
<td>• promoting trade &amp; FDIs</td>
</tr>
<tr>
<td>• ultra-high speed communication networks</td>
<td>• North Korea</td>
<td>• improvement of business environment</td>
</tr>
<tr>
<td></td>
<td>• ASEAN countries</td>
<td>• improvement information accessibility</td>
</tr>
</tbody>
</table>

- Four main areas

| Transport/Logistics | Energy & resources | Industries & trade | Agriculture & fisheries |
2. Eurasia Initiative: “One Eurasia”

2.1. Priority 1: Silk Road Express (SRX) - transport connectivity

- (TKR)-TSR (to/from Europe): Vostochny (R) - Moscow, 9,363km
- TKR-TCR (to/from Europe): Linanyungan (C) - Yekaterinburg
- TKR- TMGR (to/from Europe): Inchon, Busan-Tianjin-Erlan..
2. Eurasia Initiative: “One Eurasia”

2.2. Priority 3: Energy transportation networks in NEA

* Oil: East Siberia-Pacific Ocean (ESPO) Pipeline

ESPO pipeline to help Russian crude make inroads into Asia

ESPO importers (2013)

<table>
<thead>
<tr>
<th>Country</th>
<th>Rank</th>
<th>Impt. Vol.</th>
<th>Importer</th>
<th>Portion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>1</td>
<td>8 million t</td>
<td>JX Nippon</td>
<td>37.4</td>
</tr>
<tr>
<td>China</td>
<td>2</td>
<td>5.5 million t</td>
<td>UNIPEC</td>
<td>25.7</td>
</tr>
<tr>
<td>S. Korea</td>
<td>3</td>
<td>2.3 million t</td>
<td>SK E./GSCal.</td>
<td>10.7</td>
</tr>
<tr>
<td>US</td>
<td>4</td>
<td>1.3 million t</td>
<td></td>
<td>6.1</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>4.3 million t</td>
<td></td>
<td>20.1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>21. Million t</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Argus Media FSU Energy, 2014

* Natural Gas (Sakhalin Gas Pipeline)

Russia’s potential gas exports to Asia

Source: J. Henderson et al., Feb. 2014
2. Eurasia Initiative: “One Eurasia”

2.3. Priority 2: NSR commercialization

- **Time reduction:** 8~10 days’ reduction possible
  - From Busan to Rotterdam (compared with Far East-Europe route via Suez)
  - Maritime crossroad between East-West route and North-South route
    “Singaporization of Busan Port”
- **Cost benefit is also expected**

<table>
<thead>
<tr>
<th>Route</th>
<th>Sailing Time</th>
<th>Covering area</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSR</td>
<td>18 days</td>
<td>East Asia ~ Europe</td>
</tr>
<tr>
<td>SCR (via Suez)</td>
<td>26 days</td>
<td>Asia ~ Europe</td>
</tr>
<tr>
<td>NWP</td>
<td>18 days</td>
<td>Europe ~ East Asia, N. America ~ East Asia</td>
</tr>
</tbody>
</table>
3. Eurasia Initiative and others

- Eurasia Initiative shares vision and many aspects of its methodology with others
- Improving intermodality and connectivity is crucial to achieve their goals

<table>
<thead>
<tr>
<th>Part II. Current policy driver: Eurasia Initiative</th>
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<tbody>
<tr>
<td>Eurasia Initiative - S. Korea</td>
</tr>
<tr>
<td>vision</td>
</tr>
<tr>
<td>Geographic coverage &amp; direction</td>
</tr>
<tr>
<td>Priorities</td>
</tr>
<tr>
<td>• transport/logistics</td>
</tr>
</tbody>
</table>
Part III. Proposals & projects for cooperation
1. Eurasia gate

Pan Yellow Sea, Pan East Sea Rims

Part III. Proposals and projects for cooperation

31 Trade Ports in 7 areas of S. Korea

Two-port system
2. Pan East Sea Rim

2.1. Rajin-Khasan project

- Importance: enhancing connectivity of land (TSR) - port - shipping (S. Korea’s Pohang)
  - TKR doesn’t work directly due to political reason between the two Koreas
  - Triangular intermodal cooperative project: N. Korea + S. Korea + Russia
- Port & related railway modernization (Rajin-Khasan, 54km)
  - Rajin’s No. 3 pier by joint venture, RasonContrans. * S. Korea indirectly invest via R.

Rajin-Khasan coal transport (Nov. 2014)

Project history

- Goal: Rajin – South Korean port shipping route test
- Nov. 2014. the 1st testing
  - 40.5 thousand tons of coal to Pohang
- April. 2015. the 2nd testing
  - 150 thousand tons of coal to Pohang, Gwangyang, Dangin, Boryong

Source: Sungwoo Lee, 2015
2. Pan East Sea Rim

2.2. Rajin-Hunchun project

- Importance: improvement of the connectivity of land (Hunchun, Jilin P.) - port - sea
  - for sub-regional economic integration (propelled by China’s needs), expansion of trade
- N. Korea and China agreed to jointly develop the Rason SEZ including parts of Rajin Port
  - Rajin’s No. 1, 2 piers, Wonjon-ri - Rajin road modernization (50.3km)
- S. Korea considers another triangular cooperation (N. Korea + S. Korea + China)

As - is

To - be

Rajin Port No. 2 pier

Source: Sungwoo Lee, 2015

Related projects

- New Tumen River Bridge
  (Quanhe – Wonjon-ri)
- Rajin-Namyang railroad modernization

Source: Sungwoo Lee et al., 2015
Note: blue and red color dots are cargo flow
Innovative proposal, doing the economic feasibility study more proactively
- conceived about the late 1990s, re-emerged in 2007, whistled recently by MOF
- Shandong P. newly proposes it, as a way for its own “One road, One belt”
- opportunity: efficient linking TCR, TMGR / distance reduction / environment-friendly

Possible routes (between S. Korea and China)
- Inchon-Yantai (270 MN) or Pyongtaek - Yantai (288 MN) TCR or TMGR
- Inchon/Pyongtaek - Dalian, Mokpo - Lianwingan routes are also considered

If using train ferry route, the distance of access to TCR can be reduced by more than 1,000km, compared with the Gyongui railway line

Source: adapted based on Hongseun, Roh, Jan. 2014

Train ferry operating on Dalian – Yantai route
4. The Korean Peninsula

4.1. Road & railway connections

Despite problems, the trade volume is steadily growing
- inter-Korean trade: US 2.3 bil. $(2014)$
- Roads & railways, shipping routes have yet to be reconnected
  - road: AH 1(western), AH5 (eastern)
  - railway (TKR):
    a. Gyongui line: Seoul-Sinuiju-Dandong(China) N-S
    b. Donghae line: Sokcho-Rajin-Khasan (Russia) N-S
    c. Gyonwon line: Seoul-Wonsan (N) E-W

Reconstruction began on August, 5, 2015.
Gyongwon L. is one of the 3 railway networks
(length: 223.7km)

Source: Moonwha Daily, Aug. 4. 2015

Source: GTI, 2013
4. The Korean Peninsula

4.2. Gas transportation network connectivity

- Part of Eurasia Initiative’s energy network construction
  - In 2010, Russia & China agreed natural gas supply (68 billion m³/year) from Russia
  - In Sept 2011, Russia completed “Eastern Gas Pipeline” (Sakhalin–Vladivostok)
- In 2011, S & N. Korea and Russia started negotiations
  - N. Korea - Russia: recently, the two have talks to connect the pipeline to Rajin

Source: Russian Gas Matrix, 2014

Source: Joongang Daily, April 18, 2015
Part IV. Implications
1. Similarities

1.1. Geographic condition

- a long divided country, de facto an “island”
- overcoming the geographic limitation = a greatest challenge for S. Korea
  - geographic barrier in term of transport/shipping costs
- The existence of neighboring countries sharing geographic space clearly demands “habit of dialogue” and cooperation
- economic interdependency and interactions, division of labor, production networks

1.2. China’s role more visible in the region

- China has announced its intentions to connect the whole of SEA by rail from Yunnan to Singapore
  - Singapore, Malaysia agreed to build high speed rail
- At the same time, military presence in respective region is likely to grow
  - possibly, like Chonjin in NEA, Kyaukphyu/Sittwe (Myanmar), Sihanoukville (Cambodia), Koh Lanta (Thailand)…etc.

Possible Regional Rail Network
2. Implications for cooperation

2.1. Coordination at domestic level

- Transport sector + manufacturing + agriculture & fisheries + environment
  - especially, consultation with shipper
- government + business + civil society (non-governmental group)
  - government: investment promotion policy, promotion of self discovery
  - business sector: new business model

2.2. Cooperation at international level

- National level
  - bilateral and/or multilateral
    - for example, bilateral summits,
      - transport ministerial talks (Korea + China, Korea + China + Japan)
- Regional(or sub-regional) level
  - international partnership. For example, GTI
- global level
Thank you!

Terima Kasih!

감사합니다!

Sung Jun, Park

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