Miracle on the Han River and Beyond
Overview of Korea’s Rapid Industrial Development and the Future

President & CEO Tae-shin Kwon
Korea Economic Research Institute

Vanderbilt University, September 22nd, 2016
I. Overview of the Korean Economy

II. Key Drivers of Sustained Growth

III. Foreign Exchange ("FX") Crisis of 1997

IV. Current Status of Korean Economy

V. Future Challenges

VI. Opportunities Ahead
I. Overview of the Korean Economy
The Korean Economy Before its Take-off

- **Colonization**: 1910-45
- **Disruption** in economic activities due to the departure of Japanese
- **Territorial division**: economic complementarity lost
- **Korean War**: 1950-53
- **President Rhee**: 1948-60
  Lower priority on economic development
A Brief Summary of Korean Development History: Initial Conditions

- In 1961, Korea had:
  - Per capita income of US$82, approximately the same level as Ghana and Sudan
  - Scarce natural resources
  - Infrastructure damaged from Korean War
  - Low level of savings (8%) and high level of poverty
  - US aid accounted for 50% of its budget, 70% of imports, 80% of foreign exchanges

- Korea also had a number of advantages
  - Abundant labor with high level of literacy
  - Relatively equal income distribution
Korea’s Rapid Economic Growth

- **GNI per capita (US$)**

- **CAGR 1960-2015 : 9.9%**

- **Six 5-Year Economic Development Plans**

- **Joined OECD**

- **Global Financial Crisis**

- **Asian Financial Crisis**

- **Liberation from Japanese Colonial Rule**

- **2015**

- **27,340** (2015)

- **17,531**

- **11,735**

- **2,355**

- **607**

- **105**

- **1945**

- **1955**

- **1965**

- **1975**

- **1985**

- **1995**

- **2005**

- **2015**

- **(2015)**

- **27,340**

- **17,531**

- **11,735**

- **2,355**

- **607**

- **105**

- **1945**

- **1955**

- **1965**

- **1975**

- **1985**

- **1995**

- **2005**

- **2015**
## Korea Over the Last Five Decades

<table>
<thead>
<tr>
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<th>1961</th>
<th>2015</th>
<th>2015 Compared to 1961</th>
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<tbody>
<tr>
<td><strong>Per Capita GNI (US$)</strong></td>
<td>82</td>
<td>27,340</td>
<td>330 times</td>
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<tr>
<td><strong>Commodity Exports (US$)</strong></td>
<td>41 million</td>
<td>527 billion</td>
<td>13,000 times</td>
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<tr>
<td><strong>Trade/GDP Share (%)</strong></td>
<td>3.3%</td>
<td>69.8%</td>
<td>66.5%↑</td>
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<tr>
<td><strong>Trade</strong></td>
<td>$33million</td>
<td>$96.3billion</td>
<td>6006 time</td>
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<td><strong>Life Expectancy</strong></td>
<td>55 (1960)</td>
<td>82</td>
<td>27 years ↑</td>
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<tr>
<td><strong>Enrollment Rate (%)</strong></td>
<td></td>
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<td></td>
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<tr>
<td>High School</td>
<td>29.3 (1970)</td>
<td>93.5</td>
<td>3.2 times</td>
</tr>
<tr>
<td>University/College</td>
<td>9.0 (1970)</td>
<td>70.8</td>
<td>7.9 times</td>
</tr>
</tbody>
</table>
Economic Policies During the Development Period

- Strong economic growth with outward-looking strategy (1960~1980)
  - Government-led development
  - Transition from import substitution to **export-driven industrialization**
  - Heavy and Chemical Industries ("HCI") drive in the 1970s

- Changes in development strategy (1981~1997)
  - Stabilization policy in the early 1980s
  - Market-oriented reforms (phasing-out of policy loans, interest rate deregulation, investment adjustment in HCI, etc.)


- Paving the way for an advanced economy
II. Key Drivers of Sustained Growth
Key Drivers of Sustained Growth

- Human capital: High investment in education, high quality workers and entrepreneurs
  - Population with tertiary education (2014)
    - 17% (55~64 year olds) vs 68% (25~34 year olds)

<Population with tertiary education>

(unit: %)
Key Drivers of Sustained Growth

- Policy
  - Sound macroeconomic policies
  - Adoption of export-oriented, pro-growth policies
  - Responded rapidly and flexibly to external shocks
  - Some policies right, some wrong; learning through trial and error
  - Government intervention, ingredient for growth?
    - may differ at different stages of development

- Institution
Strong Top Leadership During the Development Period

- **Strong leadership commitment** to economic development

- **Monthly meetings presided by the President:** Economic Conditions Review Meetings, Meetings for Export Performance Monitoring

- **Strong support from think tanks** such as KIST and KDI

- **Partnership with big businesses (Korea, Inc.)**
  - Strong incentives provided while closely monitoring big businesses
  - Largely free from corruption and interest group pressures
Government: coordination, monitoring, resource allocation

Large business groups: implicit development partners

Conditions for success

- **Effective monitoring**: top leadership with vision and commitment; strong and relatively clean bureaucracy

- **Strong incentives**: subsidized credit, etc.

- **Sensible performance criteria**: export performance, etc.
Promotion of Exports and Industrialization: Export-Oriented Economic Takeoff in the 1960s

- Export incentives
  - Industry neutral: based on export performance
  - Exchange rate realignment
  - Credit & tax incentives, export-import link system, etc.

- Institutions for export promotion
  - Export-targeting; monthly meetings for monitoring
  - KOTRA
  - General trading companies
  - Free export zone
Foreign Direct Investment

- FDI playing only a minor role
  - Fear of foreign domination
  - Gradual liberalization since the 1980s

- Was it a good policy?
  - Missed chance of technology transfers and skills training
  - Too much dependence on borrowing caused a crisis
  - Borrowing cheaper than FDI?
  - Better for deepening local technological capabilities in the long run?
Heavy and Chemical Industry ("HCI") Drive in the 1970s

- Steel/shipbuilding/machinery/electronics/chemicals
- Export/industrial structure upgraded
- Macroeconomic policy distortions
  - Interest rate control; significant preferential credit -> financial development delayed; inflationary pressure
  - Currency appreciation (due to increased repayment burden on foreign debt)
- Inefficiency: excessive/duplicative investment; lack of technology & skills; import protection, etc.
- Concentration of economic power
Changing Export Structure:
From Agriculture to Light Industry, and to HCI

50%

80%

14%

6%


Wig  Textile  Automobile  Semiconductor

Semiconductor, Mobile Phone, DTV, Display, Automobile, Shipbuilding, etc.
Challenges of 2nd-Stage Import Substitution

- Constraints on capital, technology & skills

- **Small domestic market** -> not merely import substitution, but to grow as export industries

- **Harder to identify** the industries to be promoted

- **Concentration of economic power**; monopolistic profits & corruption <- import protection

- **Macroeconomic instability**
Price Stabilization in the Early 1980s

Difficult to rely entirely on **demand management** (tight fiscal & monetary policies) in recession

**Incomes policy** may be effective under some circumstances

- **Credibility/consistency** of the government policies
- Public economic education
- **Tools**: unofficial wage guideline through low salary increase for civil servants
Business Groups: Their Roles and Issues

- **Development partners of the government**: capturing policy-induced profit opportunities

- **National champions in the global market**: undertaking long-term, risky R&D investment

- **Seeking family and/or controlling shareholders’ interests first?**
  - Cross-shareholding, poor corporate governance
  - Extensive diversification and internal transactions
  - High dependence on debt; overinvestment
  - Poor profitability (for smaller groups)
III. Foreign Exchange (“FX”) Crisis of 1997
FX Crisis of 1997: Causes

- **Weak financial and corporate sectors** due to continued government-bank-chaebol tie-up:
  - Moral hazard; poor governance; accumulated non-performing loans

- **Poorly managed (external) financial liberalization:** prudential regulation; financial safeguards, etc.

- **Poor management of the external sector**
  - Small FX reserves; high short-term debt
  - Currency appreciation due to capital inflows
Post-Crisis Reform

- Financial reform
  - Restructuring non-viable financial institutions
  - Strengthening prudential regulation/supervision

- Corporate restructuring
  - Legal frameworks & practical methods of workout
  - Reform of corporate governance

- Strengthening social safety nets while redressing labor market rigidity
Comparison: Pre- and Post-Crisis Period

- Pre-crisis period of 1990-1997:
  - Chronic overcapacity problems
  - 8-year long trade deficits
  - FDI inflows were insignificant
  - Vulnerable external position
  - Explosive corporate debt growth
  - Weak financial sector

- Post-crisis period since 1998:
  - Structural improvements
  - Continued current a/c surplus
  - FDI inflows increased ten times
  - Much improved external position
  - Significant de-leveraging trend
  - Sound and efficient financial sector
IV. Current Status of Korean Economy
Korea achieved a solid growth post-crisis.

GDP Growth % YOY

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>US</td>
<td>4.4</td>
<td>4.3</td>
<td>4.1</td>
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<td>1.6</td>
<td>2.2</td>
<td>1.5</td>
<td>2.4</td>
<td>2.4</td>
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<td>Japan</td>
<td>1.8</td>
<td>-1.1</td>
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<td>10.2</td>
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<td>1.7</td>
<td>3.1</td>
<td>2.6</td>
<td>2.4</td>
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<td>8.5</td>
<td>-0.9</td>
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<td>3.7</td>
<td>4.7</td>
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<td>-6.7</td>
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<td>2.3</td>
<td>2.9</td>
<td>3.3</td>
<td>2.6</td>
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<td>India</td>
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<td>1.2</td>
<td>1.7</td>
<td>1.8</td>
</tr>
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<td>Latin America</td>
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<td>3.0</td>
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<td>OECD</td>
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<td>3.1</td>
<td>3.9</td>
<td>1.9</td>
<td>1.3</td>
<td>1.3</td>
<td>1.9</td>
<td>2.2</td>
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<td>World</td>
<td>4.2</td>
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<td>3.5</td>
<td>3.3</td>
<td>3.4</td>
<td>3.1</td>
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</table>

Core inflation remains stable.

- **Headline CPI**
- **Core CPI**

![Chart showing Core inflation for various regions and years]
The current account surpluses continued since 1998 and hit record high at 105.9 billion US$ in 2015.
This enabled Korea’s FX reserves to rise from 4 billion US$ in 1997 to 368 billion US$ in 2015, the 7th largest in the world.
Debt-equity ratios dramatically declined and corporate profitability has significantly improved.

**Corporate Sector: Sharp De-leveraging, Improved Profitability**

Note: Corporate ordinary income/sales trend is only available until 2006.
**Financial Sector: Restored Soundness**

**BIS ratios** increased to the international standard and **NPL ratios** substantially lowered

### BIS Ratio (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Ratio (%)</th>
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<tr>
<td>1997</td>
<td>7.0</td>
</tr>
<tr>
<td>1999</td>
<td>11.8</td>
</tr>
<tr>
<td>2004</td>
<td>12.1</td>
</tr>
<tr>
<td>2007</td>
<td>12.3</td>
</tr>
<tr>
<td>2010</td>
<td>14.6</td>
</tr>
<tr>
<td>2011</td>
<td>14.0</td>
</tr>
<tr>
<td>2012</td>
<td>14.3</td>
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<tr>
<td>2013</td>
<td>14.5</td>
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<td>2014</td>
<td>14.0</td>
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<tr>
<td>2015</td>
<td>13.9</td>
</tr>
<tr>
<td>2016.6</td>
<td>13.1</td>
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### NPL Ratio (%)

<table>
<thead>
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<th>Year</th>
<th>Ratio (%)</th>
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<td>1997</td>
<td>2.7</td>
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<tr>
<td>1999</td>
<td>12.9</td>
</tr>
<tr>
<td>2004</td>
<td>1.9</td>
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<tr>
<td>2007</td>
<td>0.7</td>
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<td>2011</td>
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<tr>
<td>2015</td>
<td>1.8</td>
</tr>
<tr>
<td>2016.6</td>
<td>1.8</td>
</tr>
</tbody>
</table>

*Source: FISIS*
Government debt increased substantially in the process of the crisis resolution, but stands at a low level at an international standard.
V. Future Challenges
Our potential growth is slowing down very fast, and expected to continue to fall unless we do something.

Source: OECD
### Future Challenges

#### Low Birth Rate and Aging Society (Silver Tsunami)

<table>
<thead>
<tr>
<th>Country</th>
<th>Aging (7%+)</th>
<th>Aged (14%+)</th>
<th>Post-Aged (20%+)</th>
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</thead>
<tbody>
<tr>
<td><strong>Korea</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>US</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Germany</strong></td>
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<td></td>
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<td><strong>France</strong></td>
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<tr>
<th></th>
<th>1942</th>
<th>1972</th>
<th>1980</th>
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<tr>
<td>Aging to Aged</td>
<td>73</td>
<td>37</td>
<td>40</td>
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</tbody>
</table>

Source: Korea Statistics Bureau
Future Challenges

- Low Birth Rate and Aging Society (Silver Tsunami)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Active Persons Supporting One Old Person</th>
</tr>
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<tbody>
<tr>
<td>1970</td>
<td>17.5</td>
</tr>
<tr>
<td>1980</td>
<td>16.4</td>
</tr>
<tr>
<td>1990</td>
<td>13.5</td>
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<td>2000</td>
<td>9.9</td>
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<td>2010</td>
<td>6.7</td>
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<tr>
<td>2020</td>
<td>4.6</td>
</tr>
<tr>
<td>2030</td>
<td>2.7</td>
</tr>
<tr>
<td>2050</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Source: Korea Statistics Bureau
Future Challenges

- **Household Debt Burden**
  - Aggregate Household Debt in 2015 = ₩1203 trillion = $973 billion
  - Household Debt / GDP Ratio (2015) = 77%
    - 85% (Spain), 61% (Greece)
Future Challenges

- Increasing household debt causes domestic demand to shrink
  - Household debt / GDP: 44.3% (1996) → 80.8% (2014)
  - Average Propensity to Consume in 2015 3Q was record low
Future Challenges

- Dual Labor Market, Inflexible Labor Union, and Absence of Social Dialogue
  - Youth unemployment: UR 12.5% (2.6 times of aggregate UR)
  - PT work, Discouraged young workers, Youth Labor Under-utilization 23.4%
  - Group (D) (1.4 million workers) controls the whole labor market of 26 million workers → They refuse labor market reform to maintain their vested interests.
Future Challenges

- Possibility of secular stagnation (Japanese style)
  - Aging society, Housing market slump → shrinking domestic demand

### <Korea>

<table>
<thead>
<tr>
<th>Period</th>
<th>Net Export</th>
<th>Domestic Demand</th>
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<tr>
<td>'01~'05</td>
<td>0.9</td>
<td>3.9</td>
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<tr>
<td>'06~'10</td>
<td>0.8</td>
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<td>'11~'14</td>
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<td>2.0</td>
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</table>

### <Japan>

<table>
<thead>
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<th>Period</th>
<th>Net Export</th>
<th>Domestic Demand</th>
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</thead>
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<tr>
<td>'81~'85</td>
<td>5.1</td>
<td></td>
</tr>
<tr>
<td>'86~'90</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td>'91~'95</td>
<td>0.1</td>
<td>2.2</td>
</tr>
<tr>
<td>'96~'00</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>'01~'05</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>'06~'10</td>
<td>0.8</td>
<td></td>
</tr>
</tbody>
</table>
Future Challenges

- Superabundant Demand for Welfare

% of Main Expenditures in Consolidated Finance

Source: JK Hyun (2012)
Future Challenges

- Weakened National Competitiveness

![WEF National Competitiveness (rank)](chart)

- 2007: 11th
- 2008: 13th
- 2009: 14th
- 2010: 22nd
- 2011: 24th
- 2012: 19th
- 2013: 25th
- 2014: 26th
- 2015: 26th
VI. Opportunities Ahead
Opportunities Ahead

Thus, we need to strengthen growth potentials by

- Fostering business-friendly environment to successfully
  - transform HCI to high value-added manufacturing (ICT)
  - discover new engine of growth in IT, BT, NT
  - and develop high value added service industries
- Enhancing labor market flexibility and social mobility
Opportunities Ahead

- We need more than simple manufacturing
  - Smart Factory, IoT
  - IT, BT, NT

1st: Mechanization, water power, steam power
2nd: Mass production, assembly line, electricity
3rd: Computer and automation
4th: Cyber Physical Systems
Opportunities Ahead

- Service industry will be a source of another Economic Big Bang for Korea.

41 cities with population of more than 1 million within 2-hour flight distance from Incheon Int’l Airport, Korea.
Opportunities Ahead

- De-regulation of service industry will be a new source of job and value-added creation
  - Deregulation will create about 350 thousand jobs in medical, education, law and contents service sectors in 8 years.

< Effect of Service Industry Deregulation >

<table>
<thead>
<tr>
<th>Industry</th>
<th>Value-added (billion USD)</th>
<th>Job creation (person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>3.6</td>
<td>93,000</td>
</tr>
<tr>
<td>Medical</td>
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<td>104,000</td>
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<tr>
<td>total</td>
<td>15.2</td>
<td>349,000</td>
</tr>
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</table>

Source: “Service Industry Deregulation and Job Creation” KERI(2013)
Thank You