South Korea: Reviving the Miracle on the Han River

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Slide 3: Historical Growth

South Korea has been a global shining star of growth and resilience over the past fifty years. Beginning just after the Korean War, the *Miracle on the Han River* (coined after *Miracle on the Rhine* representing the great economic comeback of post-war Germany) was an outward facing and export-centric economic policy that ushered in an era of industrialization and massive technological development following a complete depletion of capital stock post-war. One of the key contributors to this success was General Park Chung Hee who led a military coup in 1961. Despite substantial evidence of human rights violations and the suppression of his people, Park lead efforts to develop the first 5-year Economic Development Plan highlighted by: development of coal and electric power industries, expansion of agricultural production, investment in economic infrastructure, promotion of science and technology, and increased employment. Under this plan, Korea was able to develop a competitive advantage in labor-intensive manufactured products leading to increased exports. To counter-act low domestic savings and attract foreign investment, the government began to reign in over-regulation in the private sector. This policy increased parity between the rural and urban sectors and also increased competition and innovation between firms. During the Asian Financial Crisis of 1997, the Korean government acted relatively swiftly and was assisted by the IMF (with a bailout package of around $58 billion) to contain the damage. The recovery began in Q1 1999 and was driven by thoughtful labor market policy to increase economic activity. The 2000s' saw Korea suffer shocks after the 9/11 attacks and again during the financial crisis of 2008 as their economy was particularly sensitive to macro conditions based on its export driven nature. But again due to timely stimulus activity and increased domestic consumption, Korea was able to avoid a recession and make-up for decreasing demand of exports. Korea has been named a *Next Eleven* economy and is projected to grow around 4% for the next 20 years.

Slide 4: Growth Decomposition

Using log normal growth rates, one can clearly see Korea's impressive growth over the past 50-years. When rates are calculated and disaggregated using the Cobb-Douglas production function, one can see the distinct drivers of Korean success. Across the bottom of the slide, the elements of growth are broken out. K/L is the capital labor ratio representing the amount of "stuff" (machines, technology, etc.) that each worker has to use. L/N is the number of workers given the population (employment). And TFP is the Total Factor Productivity which represents how efficient and effective the economy is at using its inputs (capital and labor). It is important to note the consistency of a "developed" market like the U.S. and how it performs over the long/medium-term. The TFP growth leap that Korea experienced during the 60's, 70's, and 80's is clear and begging for explanation. This growth was part of the *Miracle on the Han River* under General Park where Koreans focused on investing in technology and the productivity level. The consistency of Korea's employment is also important as even when the country has faced downturns in global economic conditions, it has always rebounded enough maintain a high labor per capita ratio than even the U.S.

Slide 5: What's Behind the Growth?

This goes a bit deeper into some of the trends seen on the previous slide and applies them to the half century since 1960. The slide breaks out the policies that Korea implemented and how they effected each component of growth.

Slide 6: Current Policy Successes and Challenges

Good Policies

- Educational System: Korean schools are evaluated annually by external monitoring groups that examine teaching and learning practices, curriculum and student needs. The Ministry of Education has recently added school-based performance awards in which top-performing schools receive bonuses. However, while there is the bonus upside, these school reviews are not used punitively, but rather, lower performing schools are given extra administrative support. And in the nature of good public policy and transparency, the results of the evaluations are publicly available.
- R&D: As of 2011 Korea spent 3.7% in R&D(USA 2.8%), ranking 3rd among OECD countries (average 2.3%).
- Information Technology: Korea's minister of Science and Technology actively supports the IT infrastructure and the adoption of new technology. In January 2014 the Government announced it would invest 1.5 billion in the development of a 5G network that is expected to be fully operational in 2020. It will enhance the connection speed by a factor of 1,000. It currently boasts a country-wide median download speed of 75 MB/S, compared with the United States at 16.9.
- Diversify Economy: Korea Ranks 7th in the economic complexity index, which measures how diverse the country's exports are (in terms of goods). Korea exports a variety of goods, and none of them represent more than 10% of the total exportation value. This makes the economy more resilient to business cycles as it has essentially diversified its portfolio of exports. Their major exports are: Refined Petroleum, Integrated Circuits, Cars, Cruise Ships and LCDs .

Policy Challenges

- Bankruptcy Law: The current Korean business environment punishes failure severely and in many cases can make individuals liable for business bankruptcies. On average, resolving insolvency takes 1.5 years and costs 4% of the debtor's estate with the average recovery rate at 82.3 cents on the dollar. (WB-IFC. Doing Business Report). To put that in perspective, "In America, under Chapter 11, a court typically appoints new managers to restructure the firm or to liquidate it in an orderly fashion; in Korea, most bankrupt firms simply carry on as before. Managers stay at their desks and rarely shut businesses". *The Economist* to add a little more color: "*Approximately one-fourth of listed Korean companies are on the brink of insolvency." Business Korea reported.*
- Rigidity of Employment: According to the World Economic Forum, Korea ranks 94th among 140 countries in rigidity of employment. This is mainly explained by the hiring and firing regulation, where Korea Ranks 115th/140. The minimum wage of a 19 year-old worker is $728/Month and the minimum length of a single fixed-term contract is 24 months.
- Saving Banks and Regulation: General recourse savings banks in Korea are secondary financial institutions that typically lend to those unable to obtain loans from major lenders. In the decade after the Asian financial crisis, a total of 8.5 trillion won of public funds were used to bail out struggling Banks. Despite the bailouts, many savings banks remain in deep crisis. South Korean officials have tried to understate the risks of wider economic damage by stressing that savings institutions only account for 3-5 percent of the banking sector. Risky lending, however, has not

been limited to savings banks. Last year it was revealed that five major commercial banks were holding bad loans related to construction and real estate projects worth 3.3 trillion won ($3 billion)

- Social Expenditure: Korea has the lowest social welfare expenditure among OECD countries, which prevents middle-income women from taking on high value-added Jobs outside home.

Slide 8: Social Investment

Low Fertility Rate: Low birth rate in Korea has been linked to an emphasis on education – and a *costly* education. About three quarters of high-school students have private tuition and a similar proportion go on to university. Families worry that their children will struggle to find a good job or a suitable spouse, without a degree – and the steep costs of education discourage families from having more than one child. Additionally, low public expenditure in tertiary education makes university very expensive.

Slide 9: Social Investment (2/2)

Low Women participation rate: Related to the point above, long work hours ("By law the longest that South Korean firms can now ask their employees to work is 40 hours a week plus 12 hours of overtime. Violations are still rampant: a recent government inspection found that almost 87% of manufacturing workplaces failed to stick to the overtime limit". *The Economist*) scare public childhood care support and the rigidity of the labor market makes women, especially after their 30s stay out of the job market. Though some improvement has been undertaken the government aims to provide public childcare for 30% of children by 2017. It is also doling out generous contributions to private care. Since March of 2013 it has paid allowances to everyone with a child under six.

Slide 10: Banking Sector and Household Debt

Banking System and Household Debt: 25% of the population relies on non-financial institutions debt, paying an average of 12% on mortgages compared with 3% of American borrowers (MGI). More than 90% of mortgages in Korea are adjustable-rate mortgages, making the sector vulnerable to international interest rate changes. In addition, the tax system penalizes the ownership of more than one house.

Slide 12: Future Growth Model

This slide sets up three policies that can help Korea maintain its impressive progress from the last 50-years. On the left are the key issues that face the country leading into the policy recommendations on the right of the slide.

Slide 13: Future Growth Prospects by Policy Adjustment

This slide shows future growth for Korea based on the policy recommendations from the previous slide. Below is the table of assumptions based on the effects that we predict these policies will have on the economy.

	Base	LTV	SME	Women	Super
Pop. Growth	0.40%	0.40%	0.40%	0.60%	0.60%
TFP Growth	0.90%	1.20%	1.60%	1%	2.00%
Investment Rate	20%	22%	22%	20%	23%
Depreciation	5%	5%	5%	5%	5%
Alpha	0.33	0.33	0.33	0.33	0.33

To add some color, let's discuss. For the base year, we used rounded averages of the previous 10-years for population and TFP growth rate and for the overall investment rate. In the scenario when the loan-to-value ratio is increased and the banking sector is strengthened, we predict an increase in TFP and investment from the base case. The increase in TFP is a result of stronger banking institutions and empowered borrowers that will get low rates from first tier banks. According to a recent McKinsey report, loosening LTV limits on mortgages could save $8 billion in debt for households. Along those same lines, the investment rate will increase with more activity and growth. In the second scenario, the improvement of high end services and SME support as there are improved financial and technical support systems for small/medium enterprises. This will improve competition and innovation in the economy as well. We base the increase in the savings rate because SMEs are the main source of income for the middle class and any gains there will be realized by this population. For the scenario in which there is significant empowerment of women in society, we assume a bump in population growth. Similarly, we feel that an increased workforce that includes women will be more prepared and educated thus increasing total factor productivity. The final scenario is the "Super" scenario in which all policies are undertaken.