Declining Potential Growth in Korea*

2017. 9. 7

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❖The views expressed herein are those of the authors and do not necessarily reflect the official views of the Bank of Korea or Korea Development Institute.

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2. Growth Trend of Korea
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4. Declining Natural Interest Rate and Monetary Policy
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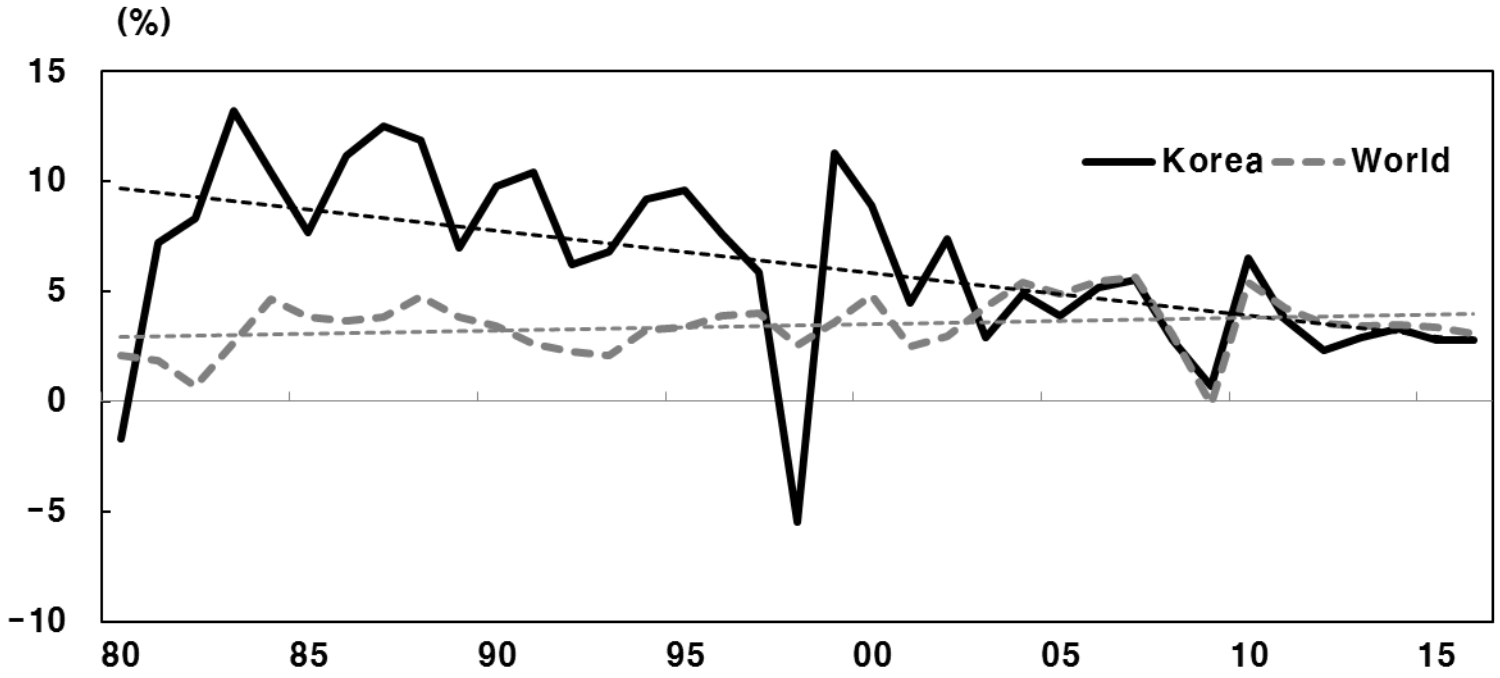
2. Growth Trend

❖ **Korea's growth has been on a secular decline since the 90s.**

Growth Trends: Korea and the World



2. Growth Trend: Accounting

❖ **All 3 components (labor, capital, TFP) have decelerated.**

Growth Accounting of Korea

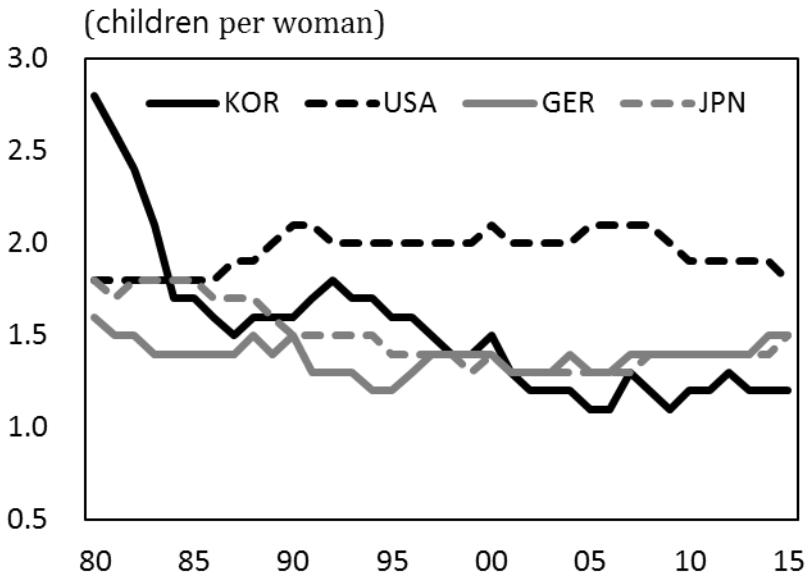
	GDP (A+B+C)	Capital (A)	Employment (B)	TFP (C)
1981~1990	9.9	4.1	1.7	3.6
1991~2000	7.0	3.8	1.0	1.9
2001~2005	4.7	2.1	1.0	1.5
2006~2010	4.1	1.8	0.5	1.8
2011~2015	3.0	1.4	1.0	0.5
2016~2020	1.7+?	1.1	0.6	?
2021~2025	1.3+??	1.0	0.3	??
2026~2030	0.7+???	0.8	-0.1	???
2031~2035	0.2+????	0.6	-0.4	????
2036~2040	0.0+?????	0.5	-0.5	?????

Source: Kwon (2017)

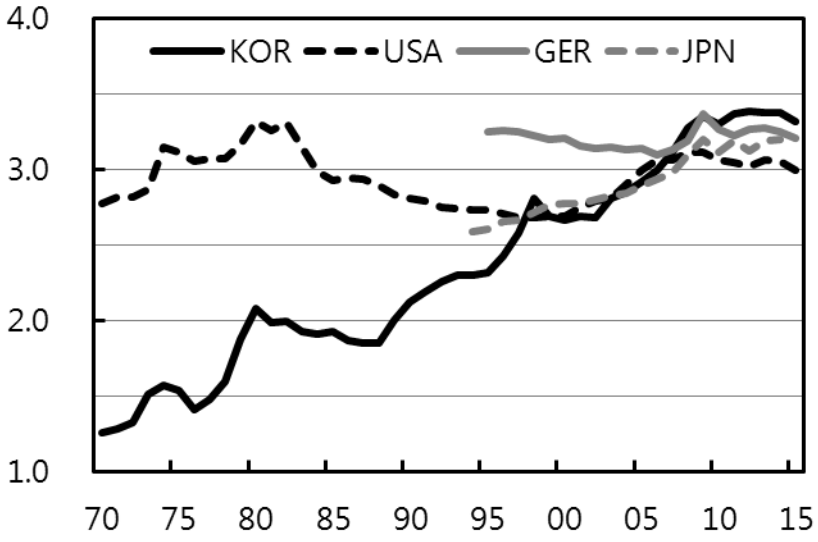
2. Growth Trend: Accounting

- Extremely low fertility rate → labor contraction in future
- High capital to output ratio → steady state in future

Fertility Rates



Capital to Output Ratios



2. Growth Trend: Efficiency

❖ TFP : the only source of growth left for Korea

❖ However, its future prospect does not seem rosy.

- **Technology gap** vis-à-vis the frontier will narrow as Korea converges.
- **Demography** will age, hampering TFP progress.
- **Improvement of institutions** to achieve more efficient resource allocation is the key factor that Korea should rely on.

2. Growth Trend: Efficiency

❖ Evidences on allocation efficiency are not encouraging.

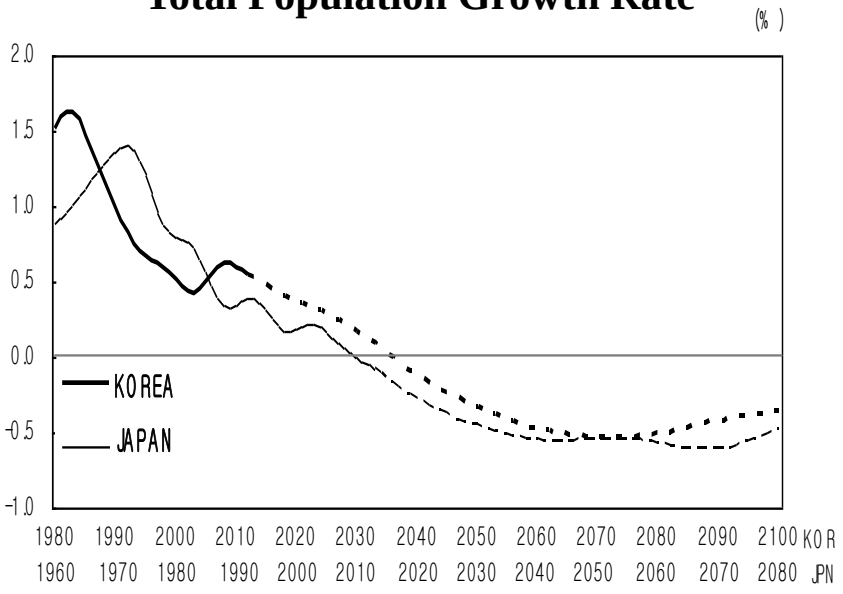
- **Labor mobility** has been significantly lowered**. (**Kwon and Kim (2014))
- **Financial market efficiency** is eroded by zombies. (Jeong (2014))
- **Product market efficiency** has been declining. (Oh (2017))

3. Japanization?: Similarities

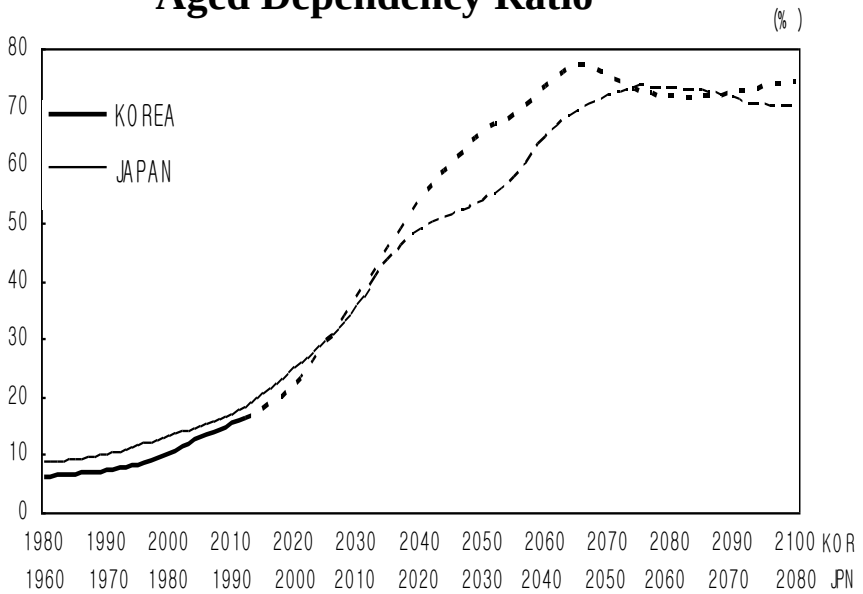
❖ Some fundamentals of Korea are similar to those of Japan.

- Korea's **demography** follows Japan's with a lag of approximately 20 yrs.

Total Population Growth Rate



Aged Dependency Ratio

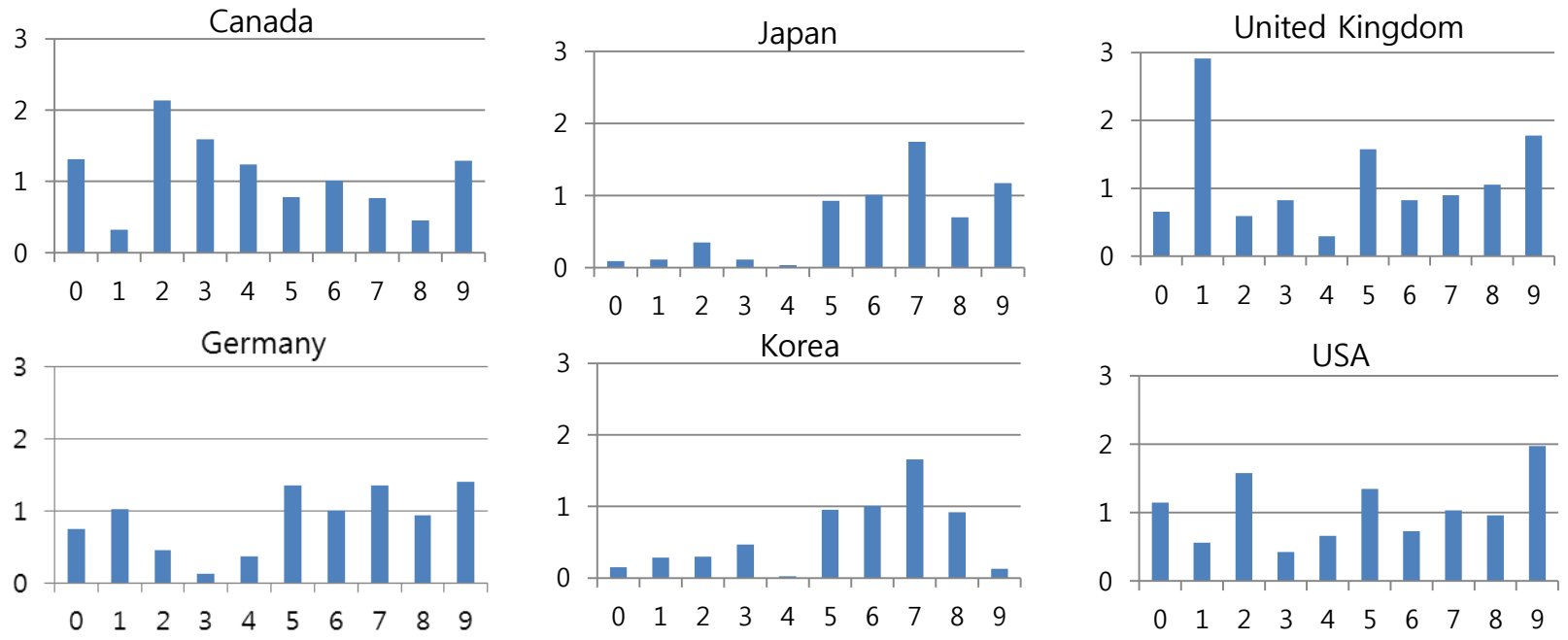


3. Japanization?: Similarities

❖ Some fundamentals of Korea are similar to those of Japan.

- **Industrial structures** are similar. (Note SITC 7 industry)

Revealed Comparative Advantages

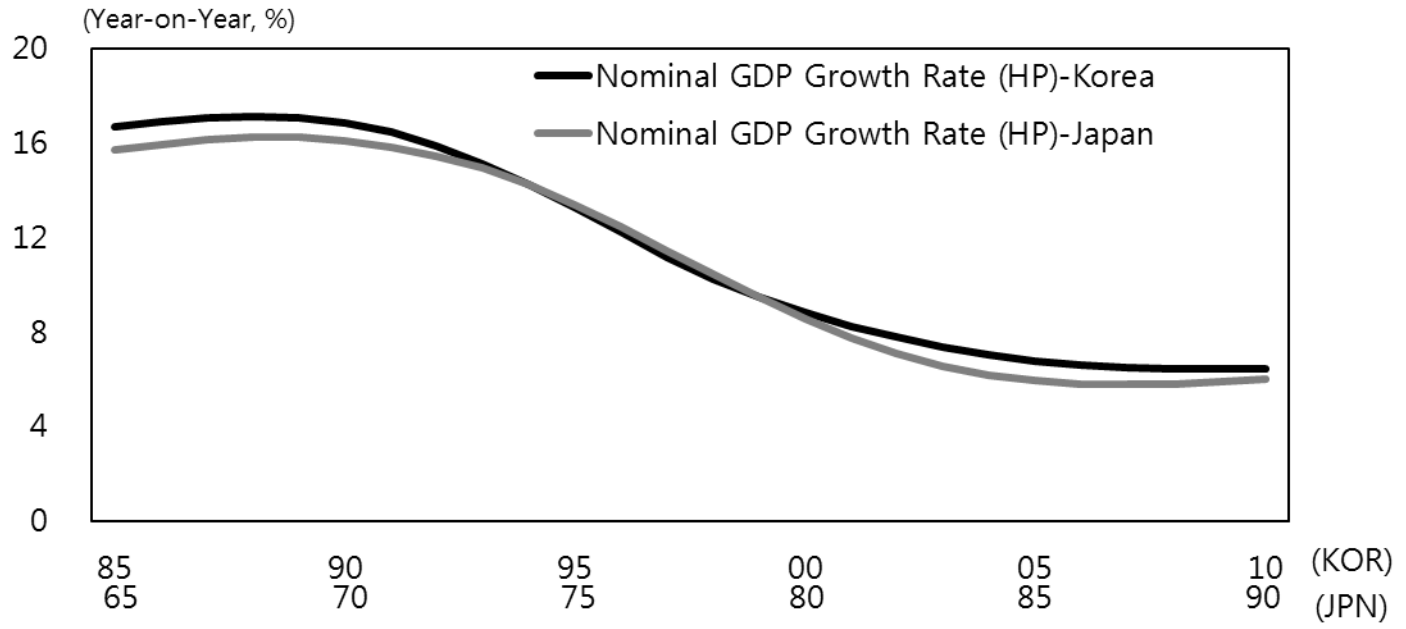


3. Japanization?: Similarities

❖ Some fundamentals of Korea are similar to those of Japan.

- Korea's **nominal income growth** trails Japan's by 20 years.

Trends in Nominal GDP Growth Rates

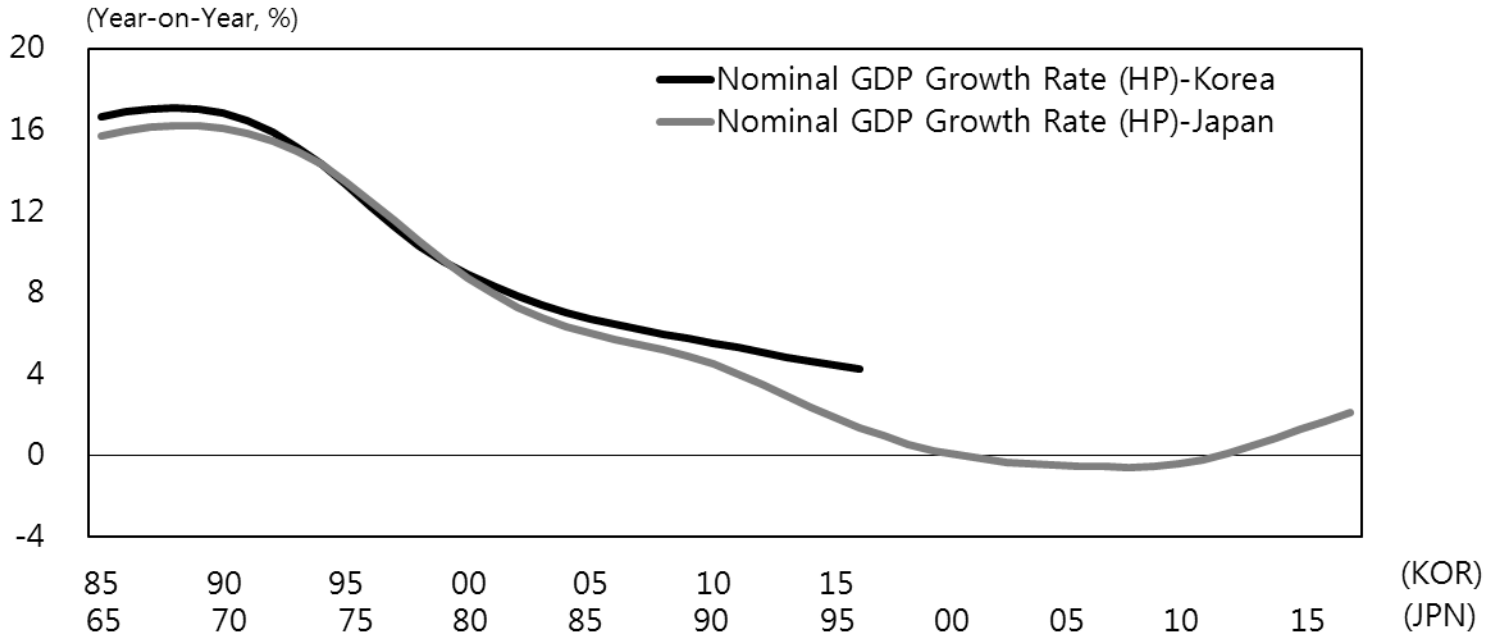


3. Japanization?: Differences

❖ Will Korea fall into chronic deflation as in Japan?

- Recent data, however, send a relieving signal.

Trends in Nominal GDP Growth Rates

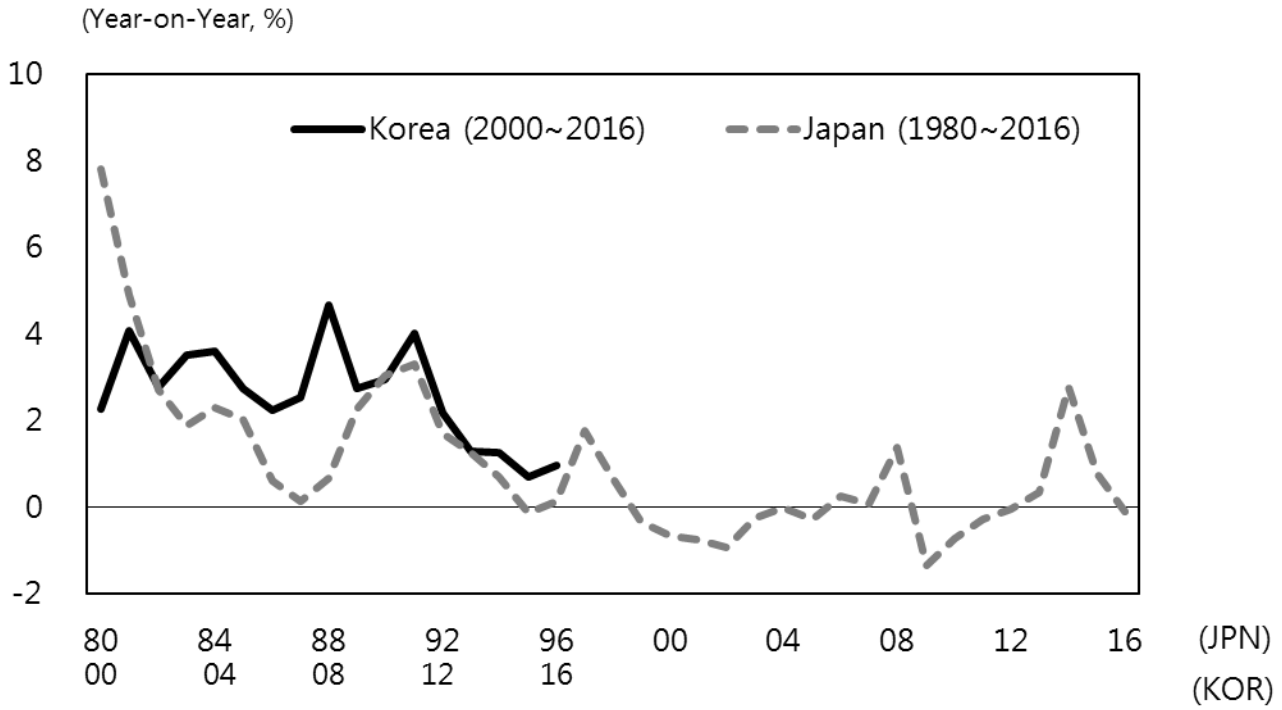


3. Japanization?: Differences

❖ The pace of disinflation was milder in Korea,

- while inflation has been lowered to a worrisome level since 2013.

CPI Inflation Rates



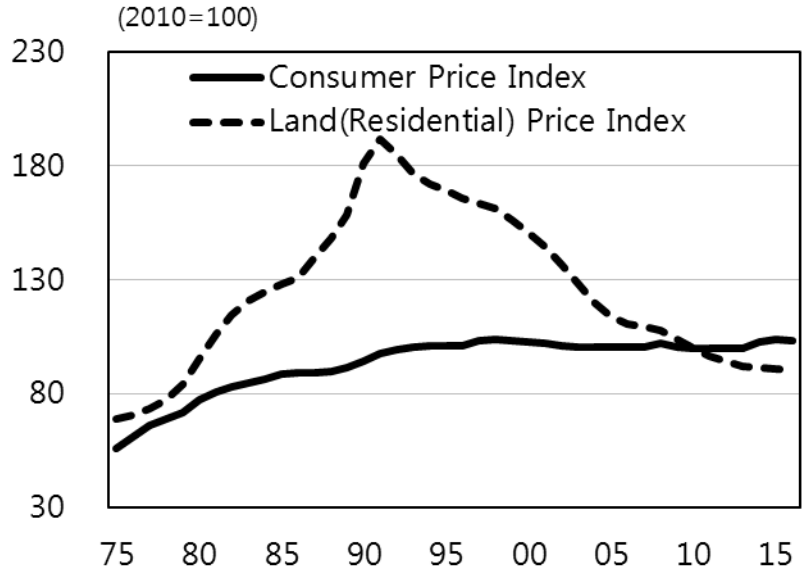
3. Japanization?: Differences

❖ The dissemblance may stem from difference in asset prices.

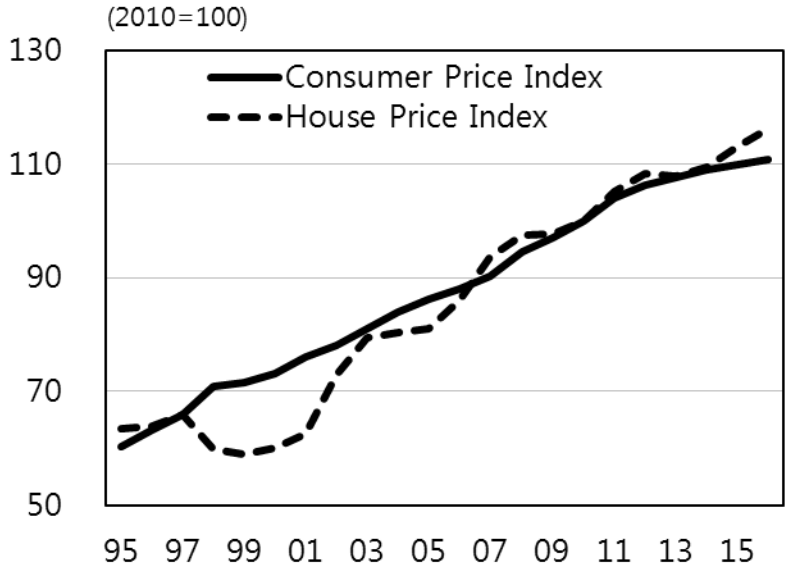
- Korea's housing prices have risen roughly in accordance with CPI.

Real Estate Price and CPI

Japan



Korea



4. Natural Interest Rate

❖ **There is no a priori reason to believe that Korea should follow Japan into deflation,**

- as far as inflation/deflation is a monetary phenomenon.

❖ **Yet, the changes in fundamentals do carry important implications on monetary policy.**

- The most important example is the decline in the 'natural interest rate,' which increases the probability of hitting the 'zero lower bound.'

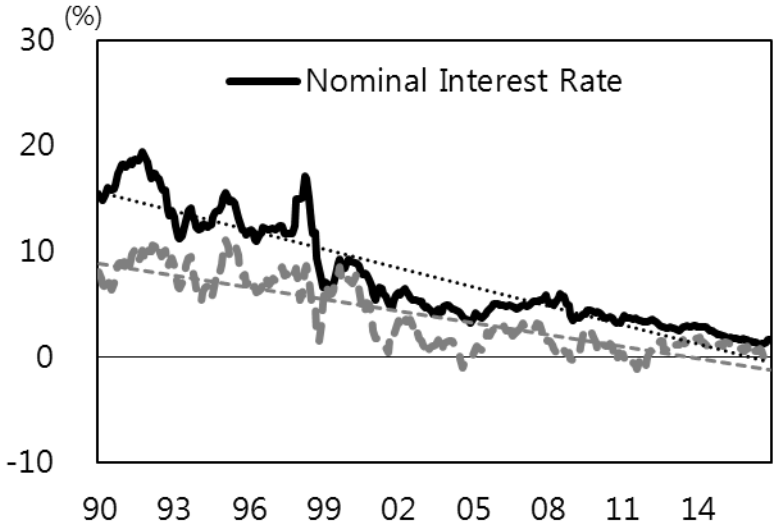
4. Natural Interest Rate

❖ Korea's (nominal) interest rate has been declining rapidly.

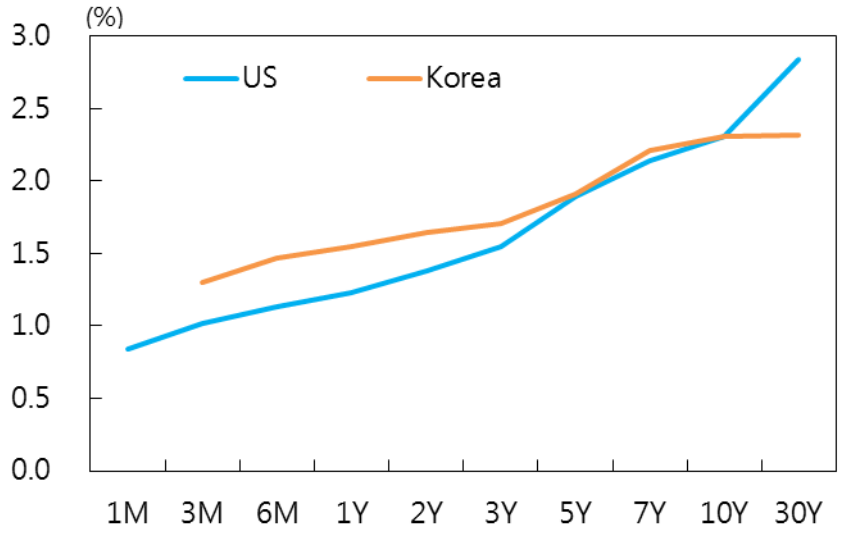
- Long-term rates finally fell to the levels similar to those of the US.

Interest Rate of Korea

Nominal and Real Interest Rates (3-year)



Yield Curve (as of June 30, 2017)



4. Natural Interest Rate

❖ Simulation exercises utilizing an OG model for Korea

Changes in Simulated Natural Interest Rate

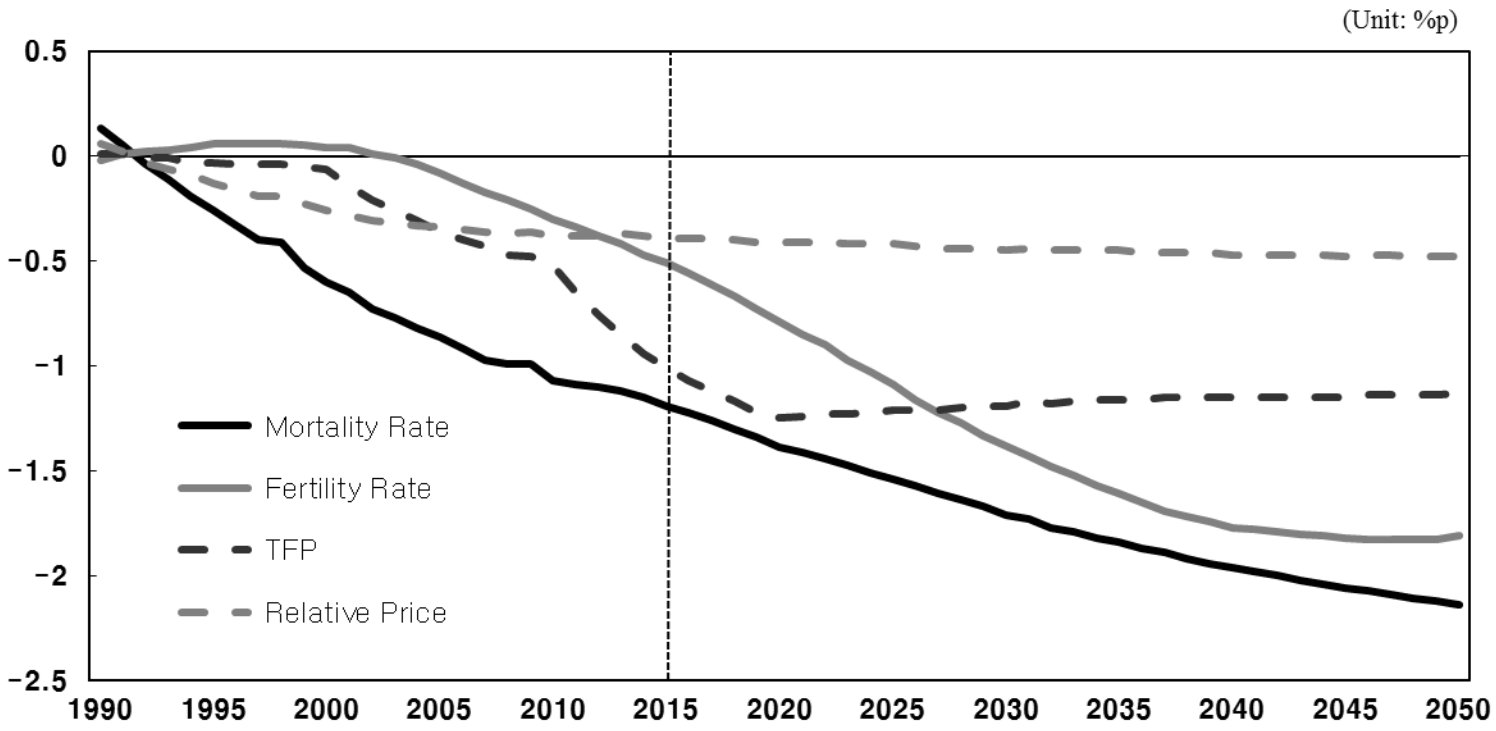
(%P)

	1990~2015 (A)	1990~2040 (B)	2015~2040 (B-A)
Change in Natural Interest Rate	-4.3	-5.9	-1.6
(1) Mortality Rate	-1.2	-2.0	-0.8
(2) Fertility Rate	-0.5	-1.8	-1.3
(3) TFP Progress Rate	-1.0	-1.2	-0.2
(4) Relative Price	-0.4	-0.5	-0.1
(5) Others	-1.2	-0.4	+0.8

4. Natural Interest Rate

❖ **Changes in demography have prolonged effects.**

Effects of the Changes in Fundamental Variables on the Natural Interest Rates



5. Conclusion

❖ Korea's potential growth will likely continue to decline.

- Given the current demography and capital deepening.
- Not so promising prospect for TFP improvement.

❖ Natural interest rate, too, is likely to decline.

- The neutral interest rate for short-term safe assets may well fall below zero in the not-so-distant future, given that its estimate is currently below 1.0%.
- The probability of interest rate hitting the zero lower bound will increase.

5. Conclusion

❖ In order to avoid deflation that Japan experienced:

- Keep inflation expectations from falling below the target level of 2%;
- Prepare emergency policy measures, including unconventional ones.

❖ Most desirable would be to improve TFP,

- which will alleviate the decline of the natural interest rate and thus reduce the probability of hitting zero lower bound.

❖ Bold structural reforms are needed.

- How to overcome resistance of vested interest groups?

Thank You!