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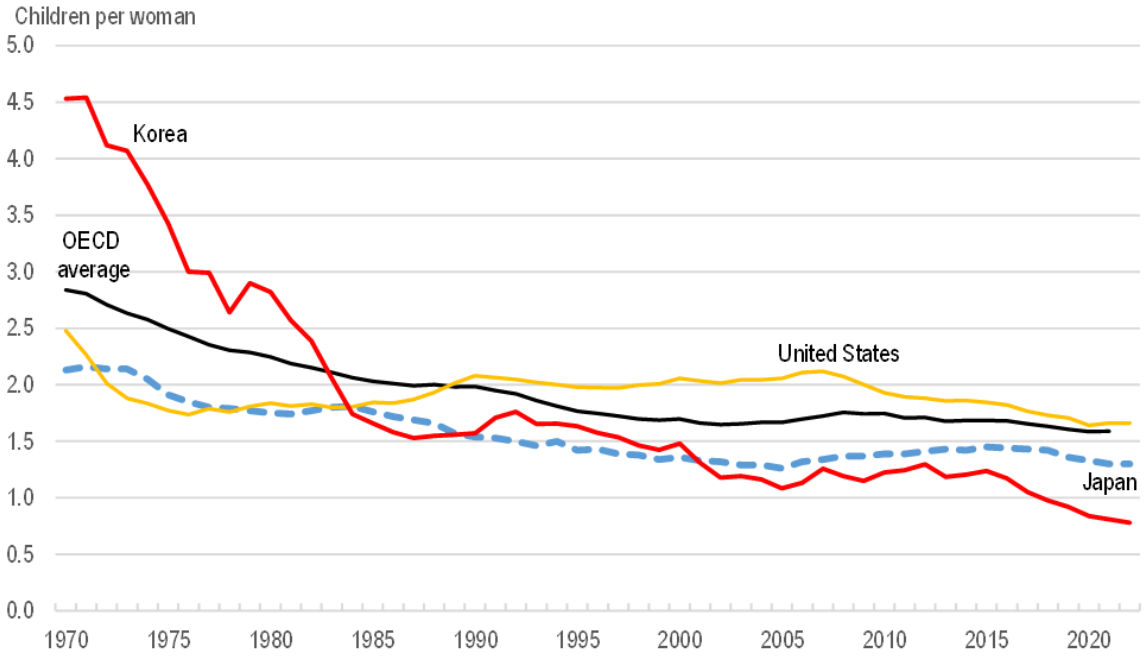
The Pied Piper of Korea

“Korea is so screwed. Wow!”

This is what Joan Williams, a professor emeritus at UC Law San Francisco, said after being informed of South Korea’s total fertility rate — 0.78. Clutching her head in disbelief, she added, “I have never heard of that low of a fertility rate.” Williams is an expert in the fields of race, gender and class. Among OECD members, South Korea is the only country where the total fertility rate is less than 1. (Fig1) The total fertility rate for January through March of this year was 0.81, almost hitting a record low for the figure during the first quarter. If this trend continues, this year’s total fertility rate may fall below that recorded last year.
At the UN population forum in 2006, demographer and Oxford University professor emeritus David Coleman estimated that South Korea may become the first country to disappear from the face of the earth from population extinction if its seriously low birth rate continued. Many of the demographers in Korea have implemented policies to relieve the declining birth rate, only to make the rate more decline. Due to the

Figure 1. Korea's total fertility rate is the lowest among OECD countries



Source: OECD Family Database.

consequent failures of the birth policies, the current administration have proposed a new immigration policy, in order to stop the population from declining. The gloomy birth rate of Korea can be analyzed by demography, economics, and psychology. With these analysis, the reality of the pied piper can be revealed and the way to get him out can be found.

In analysis by demography, Malthus' theory is the basis to understanding the rise and fall of populations. According to Malthus' theory, People would work hard enough to produce an abundant food supply in favorable times. However, he thought that they would then abuse their newfound abundance, particularly by producing larger families. The collective result of this abuse is the famous Malthusian growth model, in which unchecked population grows at a geometric ratio, whereas food increases at merely an arithmetic ratio.(fig2) When

the population reaches the crisis point, the resources(particularly food) are not sufficient to support the whole population which results in an Malthusian catastrophe. To prevent this nature takes positive

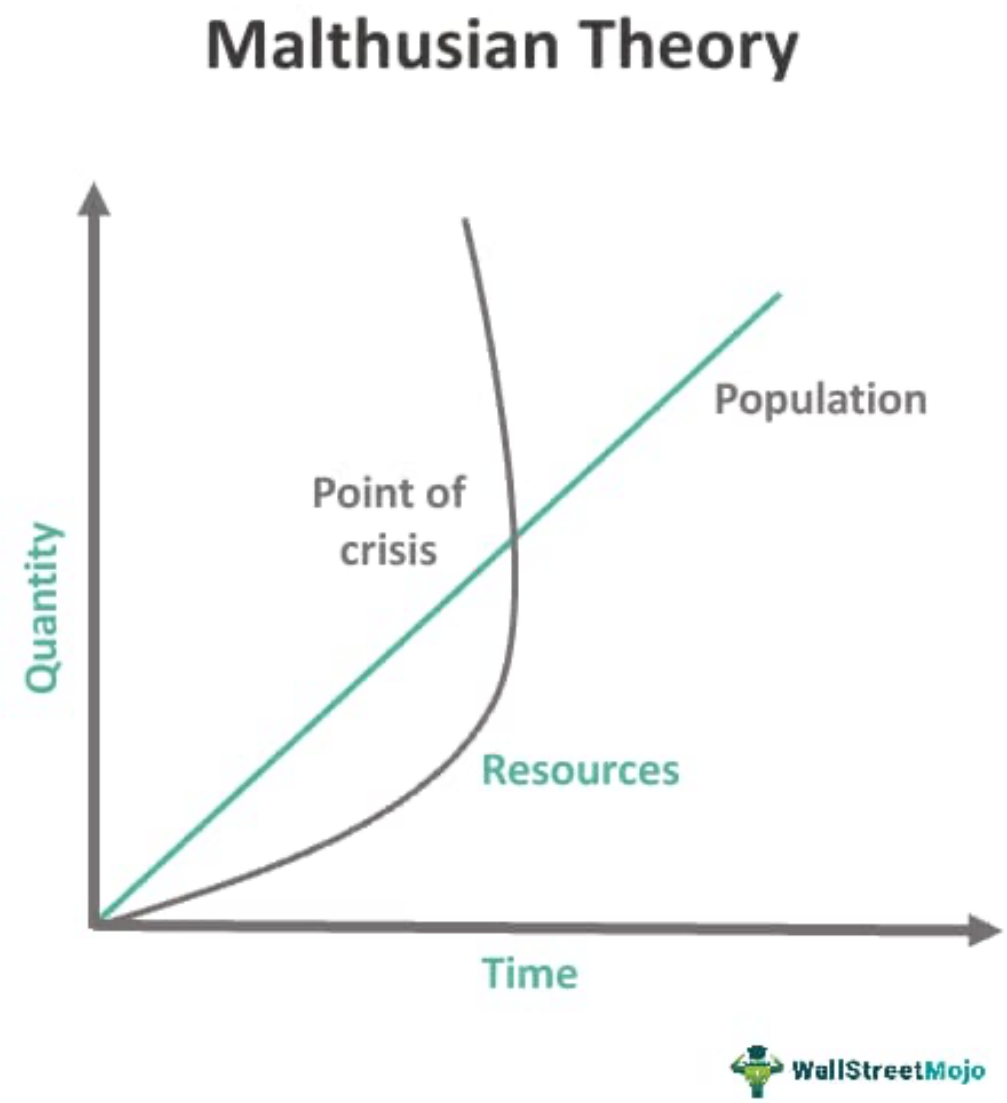


Figure2: resources follows a linear function, while population follows a quadratic function. The point where the two functions meet is the ' crisis point'.

checks and preventive checks. Positive checks refer to the natural

checks that occur occasionally; they include floods, famine, wars, plagues, earthquakes, and other natural calamities. Preventive checks are methods applied by the public in their daily and personal lives that technically prevent or avoid the disbalance of food supply, such as late marriage, having no child, self-control, simple living, etc.

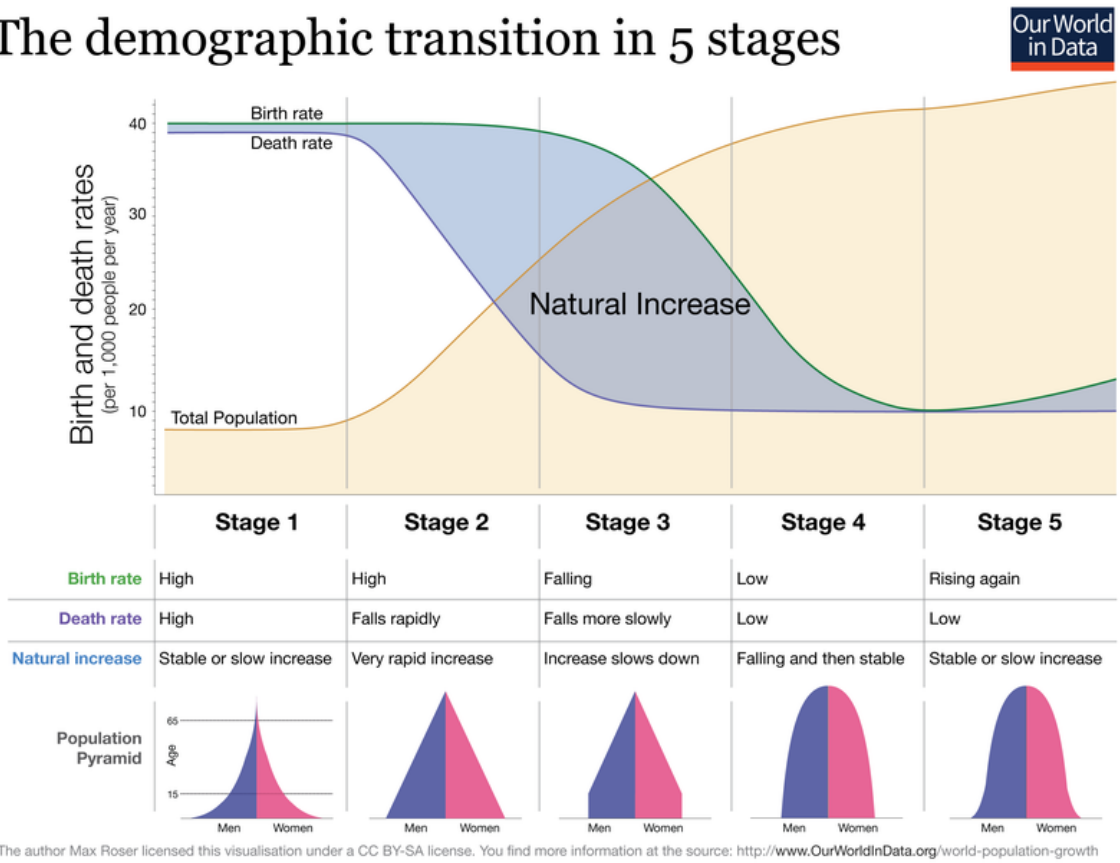
While Malthus focused on resources as food, one of Malthus' successors, Paul Ehrlich stated that it is the environment, not specifically the food supply, that will play a crucial role in the continued health of planet's population. Ehrlich's ideas suggest that the human population is moving rapidly toward complete environmental collapse, as privileged people use up or pollute a number of environmental resources such as water and air. He advocated for a goal of **zero population growth** (ZPG), in which the number of people entering a population through birth or immigration is equal to the number of people leaving it via death or emigration. While support for this concept is mixed, it is still considered a possible solution to global overpopulation.

In contrast to the pessimistic theory of humans eventually wiping themselves up, Cornucopian theory asserts that human ingenuity can resolve any environmental or social issues that develop. For example if there is inadequate amount of food, agricultural scientists will figure

out how to grow crops more efficiently , as they have already been doing for centuries.

By applying the three and substantial amount of studies, Demographers have been able to predict people will always adapt to changing circumstances, we can see clear patterns in population growth. Societies develop along a predictable continuum as they evolve from unindustrialized to postindustrial. **Demographic transition theory** (Caldwell and Caldwell 2006) suggests that future population growth will develop along a predictable four-stage (sometimes five-stage) model.(figure3)

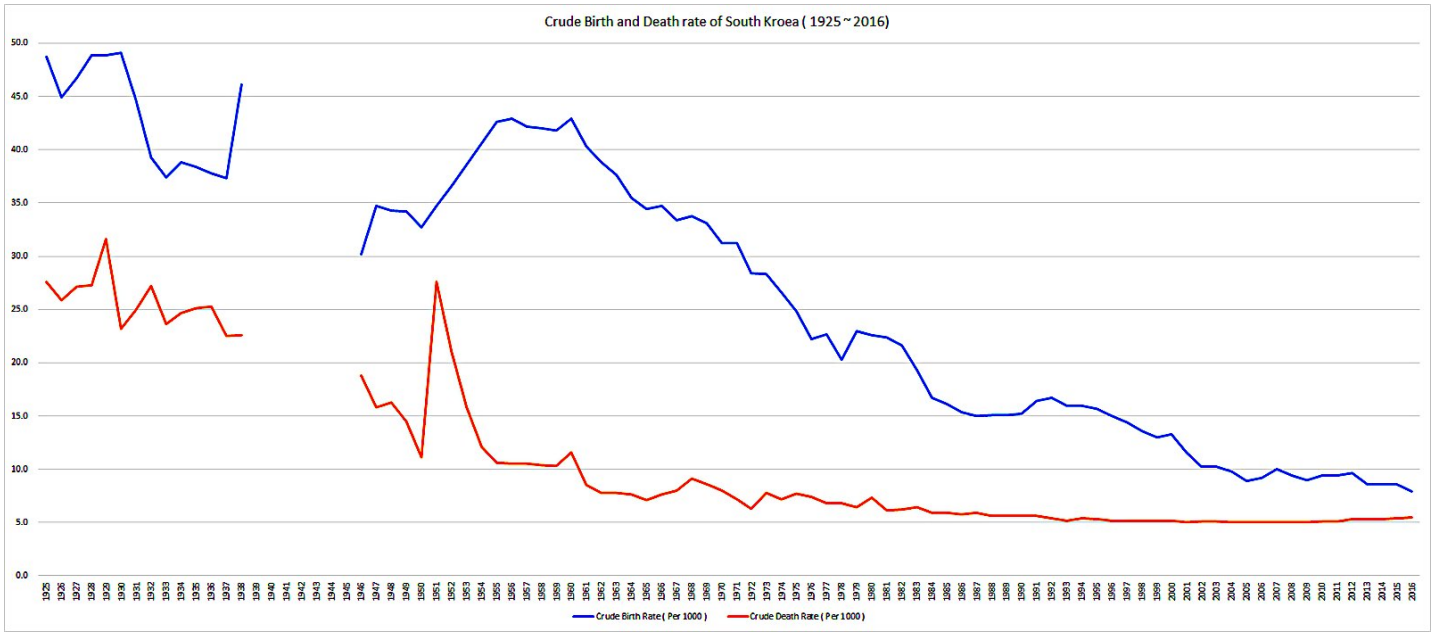
Figure3:The demographic transition in 5 stages



In Stage 1, birth, death, and infant mortality rates are all high, while life expectancy is short. An example of this stage is the 1800s in the United States. As countries begin to industrialize, they enter Stage 2, where birthrates are higher while infant mortality and the death rates drop. Life expectancy also increases. Afghanistan is currently in this stage. Stage 3 occurs once a society is thoroughly industrialized; birthrates decline, while life expectancy continues to increase. Death rates continue to decrease. Mexico's population is at this stage. In the final phase, Stage 4, we see the postindustrial era of a society. Birth and death rates are low, people are healthier and live longer, and society enters a phase of population stability. Overall population may even decline. For example, Sweden is considered to be in Stage 4. Some scholars have added Stage 5, suggesting another stage when fertility either remains below replacement levels, or begins to rise slowly again.

The Korean Doomsday can be investigated with the **Demographic transition theory.** Among the five stages of the demographic transition, current Korean state of population change can be inferred by the birth and death rate, the Population Pyramid (a frequency distribution table showing each age as a class and population of each age as a class mark) and the total population change. First, Korean birth and death rate change can be seen in the graph below(figure4)

Figure4: Birth rate and Death rate of Korea



The graph shows the crude Death and Birth rate of Korea. From 1925 to 1939 korea is in stage 1, its birth rate and death rate high. In this era Korea was in the rule of Imperial Japan, and the birth and death rate was as the similar to the times when the Chosen Dynasty ruled. The 7 years of data between 1937 to 1945 is lost because of the reinforced ethnic control policies of imperial Japan. Right after the Independence of 1945, death rates fell and birth rates rose, only to drop again by the following Korean War. The effect of the war was devastating; Death rate rose almost 3times, and birth rate fell. The demographic transition theory only can be applied starting in the late 1950s; it starting from

stage2. In the early 1960s birth rate began to fall, displaying the advent of stage3. 3-5years later, in the late 1960s death rate was maintained at low levels but the birth rate kept falling. This tendency is still true. In short, Korea can be seen as in the 3.6stage.

Second, to better understand the change, age distribution analysis is necessary. The age distribution of Korea can be seen in the graph below.(figure5)The shape of the frequency distribution table is similar

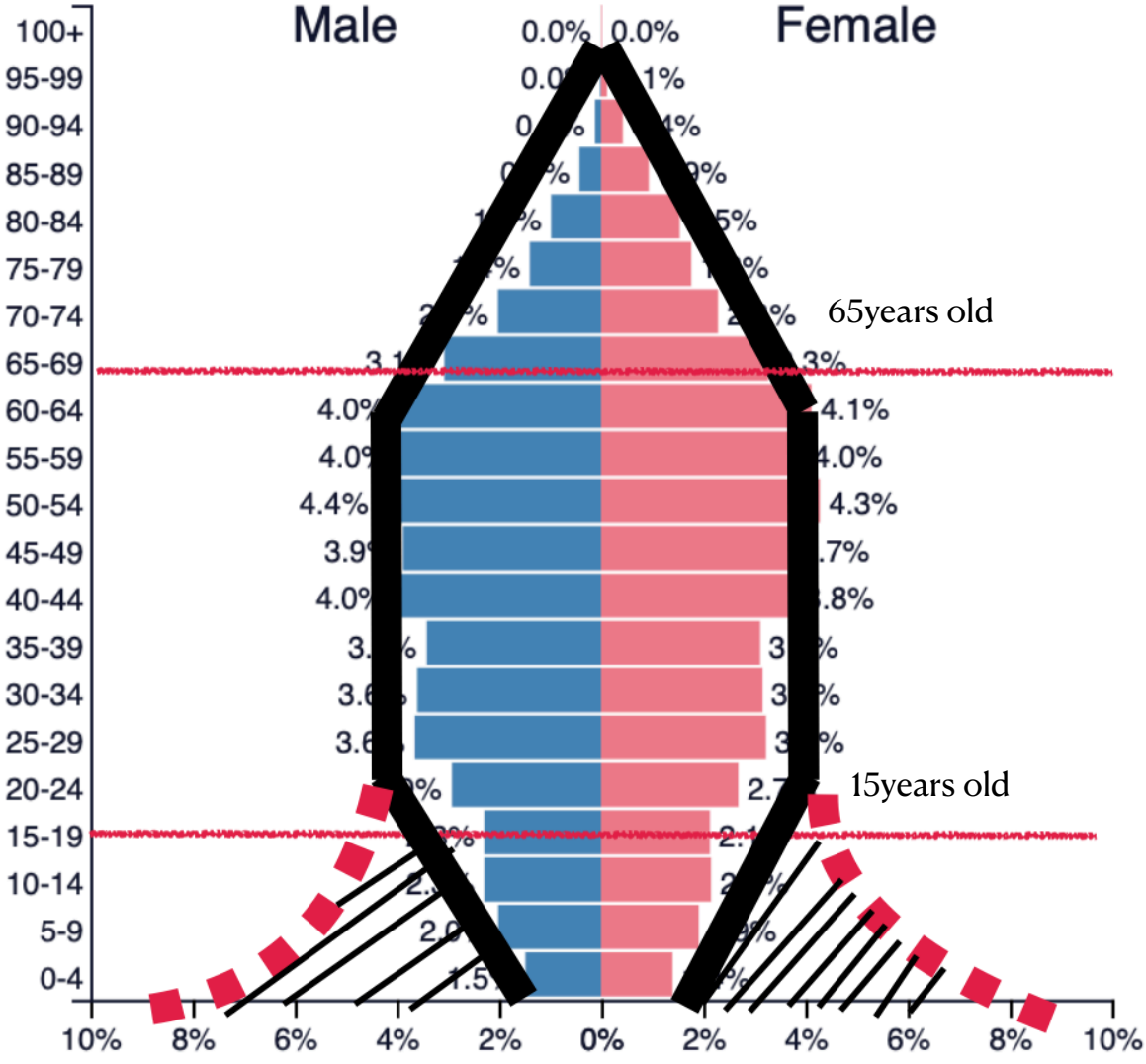


Figure5: Korean Population Pyramid

to the stage 4 or 5 of the demographic transition stage in the '65 years and older' class and the '15years-65year old' class. This is similar to the result above. However, the class 15years old and younger is greatly deprived of.

Third , the whole population is also one of the statistics used in the transition theory. As can be seen in the graph below,